REGULATIONS, COURSE STRUCTURE AND SYLLABUS FOR UNDER GRADUATE PROGRAMME

B.Sc. (COMPUTER SCIENCE) (HI)

UNIVERSITY OF KERALA

NISH

Under Credit based Semester System (CBSS)

For Revision 2019

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A. GENERAL OVERVIEW

Access to higher education improves skills and provides opportunities for a successful career. It will give an equal space to individuals in this competing world. The Students with hearing impairment (HI) who manage to pass the plus two level through mainstream or special education experience many barriers in undergoing the mainstream degree program due to their deficient language capabilities caused by their disability or speech & hearing impairment. Considering the absence of early intervention, their language skills lag behind those of the regular students and they are not sufficiently equipped to study the regular degree programmes which are taught in highly language-oriented-lecture environment. The HI students require a degree curriculum which is taught in an environment where alternate methods of teaching are employed and also the curriculum has to have continued emphasis on language development, especially written and expressive English. This calls for a special scheme, syllabus and assessment. Nevertheless, it is to be ensured that the core course content in the curriculum remains the same and the degree level skill acquisition is ensured for the student.

The Degree programme in Computer Science for Hearing Impaired students was envisaged as an attempt to provide higher education facilities to hearing impaired students by providing an appropriate and accessible teaching environment. The degree programme aims:

- To prepare these students to become competent professionals and equip them to meet the industrial need
- To develop the skills needed for a career in application development
- To train & equip the students to meet the requirements of the Software Industry

The programme shall provide

- Special scheme and syllabus
- Modified evaluation techniques
- Computer-aided teaching methods
- Accessible pedagogy
- Job-oriented curriculum

The scheme of the programme was first prepared and implemented in 2008. The radical changes in technologies, and their ever increasing adaptation to newer areas of application, demand updating of the curriculum so that the students can rise to the expectation of the Industry. Extensive reviews by experts and faculty have resulted in recommending revisions to the curriculum so as to improve the knowledge acquisition at-par with the regular hearing students.

A degree programme for the HI students calls for some special consideration in the courses taught, the mode of evaluation and assessments. Not everyone who applies for the degree program is ready for higher education. The skill sets of the students enrolling for the degree programs are

not up to that expected of a student who has passed plus two level. There are severe shortfalls in the language and mathematical skills of the HI students seeking admission to the degree program. This makes it very difficult for them to follow and comprehend concepts and to write exams. The Preparatory Year is included to develop the readiness and build a foundation in the three R's of education – reading, writing and arithmetic. Once this foundation is built, the student will find it easier to assimilate the course content and the teaching faculty will find it easier to teach technical concepts.

Since the HI students lack a first language in the verbal mode, the knowledge of sign language will help them to understand concepts and also give them the ability to communicate with each other. Currently HI students use gestures and locally developed sign languages to communicate and the vocabulary required for academic transaction is limited. An exposure to standardized Indian Sign Language (ISL) will help them to be able to assimilate academic content more meaningfully. The students will be able to understand the teachers who use ISL to communicate and teach in class. Hence, the Preparatory Semesters contains courses in ISL.

Additionally, throughout the degree curriculum there is a need to provide support in English language and hence the modified curriculum will have additional courses in English language comprehension, grammar and writing.

The programme will have theory and lab sessions with more stress on lab sessions. This will help the students have more hands-on practice time that will help them to assimilate the knowledge more easily.

B. REGULATIONS

1. Eligibility for Admission

a. Candidates seeking admission to the B.Sc. (Computer Science) (HI) should have passed the Plus Two/Pre-Degree or its equivalent from any Board or University in India, recognized as equivalent for admission to a degree course in the University of Kerala.

b. Admission is restricted to those who are deaf/hard of hearing, as defined in "Rights for Persons with Disabilities (RPWD) Act 2016".
(a) "deaf" means persons having 70DB hearing loss in speech frequencies in both ears;
(b) "hard of hearing" means persons having 60DB to 70DB hearing loss in speech frequencies in both ears;

2. Mode of Selection

Selection of eligible candidates shall be made on the basis of the marks obtained in the Aptitude test conducted by the Institute.

3. Strength and Reservation of seats

Number of seats for the programme shall be 30.
Reservation for SC/ST shall be as per rules for admission followed by the University of Kerala from time to time. No other reservations shall be given.

4. Duration of the programme

The normal duration of the Programme shall be four years consisting of eight semesters. Each semester shall comprise of at least 90 working days.

The first and second semesters are Preparatory Semesters. Only students who secure a pass in the Preparatory Semesters shall be eligible to register for the third semester. A Student must pass the Preparatory Semesters in a maximum of two successive attempts failing which the student will be required to discontinue the Degree programme. However, the performance in the Preparatory Semesters shall not be considered in the final grading of the students for the issue of Degree.

The maximum period for completing the Degree programme shall be six years from the year of admission (inclusive of the year of admission) to the programme. A student who fails to complete the programme and does not successfully pass all Courses within six (6) years since his/her first admission to the programme will not be allowed to continue. Further, a student must successfully pass all Courses in a particular Semester in a maximum of five (5) successive attempts.

5. Programme Structure

5.1 The Courses of study shall be in accordance with the scheme and syllabus prescribed.

5.2 The student shall secure the Credits assigned to a Course on successful completion of the Course. The students shall be required to earn a minimum of 120 Credits as indicated below within a minimum period of 8 Semesters for the award of the Degree.

5.3 No Course shall carry more than 4 Credits, except for Major Project. Audit only Courses will carry Zero Credit.

5.4 The Preparatory Semesters carry no credits and shall not be considered in the final grading for the issue of Degree.

5.5 Attendance: Students who secure a minimum of 75% attendance in the aggregate for all the Courses of a semester taken together alone will be allowed to appear for End Semester Examination. Others shall have to repeat the semester along with the next batch, unless they could make up the shortage of attendance through condonation. However, the award of Grade for attendance in CE shall be made course-wise.

Condonation of shortage of attendance shall be as per existing University rules. This condonation shall not be considered for awarding marks for CE. Benefits of attendance shall be granted to students who participate/attend University Union activities, meetings of the University Bodies and Extra-Curricular Activities, on production of participation/attendance certificate by the University Authorities/Principals as the case may be. In such cases condonation will be considered for award of marks for CE.

Students with shortage of attendance beyond condonable limit will not be eligible to register for the End Semester Examination. In such cases the student shall be given one chance to repeat the semester along with the subsequent batch of students after obtaining re-admission, subject to provision contained in clause 4 and they will have to repeat the CE for all Courses.

6. Outline of the Credit Based Semester System (CBSS)

'Programme' means the entire course of study and examinations for the award of a degree as per the given Scheme and Examinations.

'Semester' means a term consisting of a minimum of 90 working days distributed over a period of approximately 18 weeks.

'Course' comprises 'Paper(s)' which will be taught and evaluated within a programme.

‘Language Courses’ are Courses in English and an additional language viz. Indian Sign Language.

‘Core Course’ means a compulsory course related to the Computer Science discipline.

‘Complementary Course’ means a course which is generally related to the core course.

‘Audit Course’ means a Course without earning Credits (Zero Credit Course). It is one in which the student attends classes, does the necessary assignments, takes exams. However, the arrangement will be between the instructor and the student. An Audit Course will be graded Satisfactory/Non-satisfactory (S/NS)). A student needs to secure a Satisfactory (S) in the exams for pass in the semester. Such a course does not count towards credits required for the degree

‘Elective Course’ means a Specialized Course from the frontier area of the Core Subject, and is generally a course that can be chosen from a pool of courses.

‘Credit’ (C) of a Course is a measure of the weekly unit of work involving lecture or lab session or seminar or similar activity assigned to the Course.

‘Grade’ indicates the level of performance of a student in a Course.

‘Grade Point’ is an integer indicating the numerical equivalent of the broad level of performance of a student in a Course. The product of Grade Point and the Credit of a Course is called ‘Credit Point’.

‘Semester Credit Point Average’ (SCPA) is an index of the overall performance of a student at the end of a semester. It is obtained by dividing the sum of the Credit Points obtained by a student at the end of a semester by the sum of the Credits of Courses in the semester.

‘Cumulative Credit Point Average’ (CCPA) indicates the broad academic level of performance of the student in a Programme. It is obtained by dividing the sum of the Credit Points in all the Courses taken by the student for the entire Programme by the total number of Credits.

The Degree programme in BSc (CS) (HI) programme shall include:

1. Language courses which includes English and an additional language course in Indian Sign Language [ISL].
2. Core courses
3. Complementary courses (Mathematics)
4. Elective courses
5. Audit Courses
6. Project

Each course shall have a unique alphanumeric code number, starting with three alphabets representing name of the programme, followed by four digits starting with 1, which indicates Degree programme. The second digit is from 1 to 8, indicating the corresponding semester in which the course is offered. The third numeral indicates the type of course as follows:

Number	:	Representing Course
0	:	Audit course
1	:	Language/Additional Language Course
2	:	Foundation course
3	:	Complementary course
4	:	Core course
5	:	Open Course
6	:	Elective Course

The last digit indicates the order of the course (1, 2, etc.) in the semester. For example, BCS 1541 represents,

BCS	-	Bachelor in Computer Science
1	-	Indicates Degree programme
5	-	Fifth Semester
4	-	Shows Core Course
1	-	First core course in that semester

In addition, the following coding are also used which represents:

EHI	-	English for the Hearing Impaired (HI)
MHI	-	Maths for the Hearing Impaired (HI)
PY	-	Preparatory Year (common for Degree (HI) programmes)

Each course shall have certain credits. Credit is a unit of academic input measured in terms of weekly contact hours/course contents assigned to a course. For passing the degree programme, the students are required to achieve a minimum of 120 credits as detailed below.

Language courses	:	28 credits (for English courses).
Core courses	:	80 credits (including 3 credits each for four Mini Projects and 6 credits for the Major Project).
Complementary courses	:	8 credits (for Mathematics)
Elective Course	:	4 credits

7. Evaluation and Grading

7.1 General

The students shall be evaluated continuously through each semester. The evaluation for a Course shall involve – (1) Continuous Assessment (CA) and (2) End Semester Examination (ESE).

For all courses (Theory & Lab), the marks distribution for ESE and CA shall be:

a) Marks of End Semester Examination (ESE)	:	80
b) Marks of Continuous Assessment (CA)	:	20
Total Marks (ESE+CA)	:	**100**

7.1.1 Continuous Assessment (CA)

A maximum of three Continuous Assessments, each comprising of an assignment and test paper, shall be conducted for each Course. The best two marks from the three shall be considered for consolidating CA.

7.1.1.1 Assignments

Each student shall be required to do at least two assignments. The teacher shall define the expected quality of an assignment in terms of structure, content, presentation etc. and inform the same to the students. Assignments received after the due date may not be accepted or evaluated.

7.1.1.2 Tests

The test papers shall be of 1 hour duration carrying 25 marks (which shall be consolidated to 10 marks as mentioned below in clause 7.1.1.4).

7.1.1.3 Attendance

Percentage of attendance shall be calculated at the end of the Semester for each Course individually. The attendance shall be graded as given below.

% of attendance	Marks
91 - 100	5
81 – 90	4
71- 80	3
61-70	2
51 – 60	1
<51	0

(Decimals are to be rounded to the next higher whole number)

7.1.1.4 Final consolidated CA

Final consolidated CA shall have a maximum of 20 marks. The marks of CA shall be consolidated by adding the marks of Attendance, two Assignments and two Test papers respectively for a particular Course.

The faculty member concerned shall do the Continuous Assessment (CA) for each Course.

Components of Continuous Assessment	Marks
Attendance	5
Assignment (2 x 2.5 = 5)	5
Test papers (2 x 5 = 10)	10
Total	**20**

7.1.2. End Semester Examination (ESE)

There shall be a final examination at the end of every semester in each theory and lab course. The end semester examinations shall be of 3 hours duration. The maximum mark for ESE for a Course shall be 80.

The examinations for the Preparatory Semesters, namely the first and second semesters, shall be conducted by the Head of the Institute/Principal of the college. It is mandatory for the students to pass the Preparatory Semesters to register for the third semester. However, the marks obtained in the Preparatory semesters shall in no way be considered for the final grading of students for the issue of degree.

End Semester Examinations for the Odd Semesters, namely the third, fifth and seventh semesters shall be conducted by the Head of the Institute/Principal of the College. The marks secured by the students in the End Semester examination conducted by the Head of the Institute/Principal of the college shall be forwarded to the University and shall be recorded in the consolidated mark list issued to the student on completion of the programme.

For the Even semesters i.e.; the fourth, sixth and eighth semesters, the University of Kerala shall conduct the End Semester examination.

Students who secure a minimum of 75% attendance in the aggregate for all the Courses of a semester taken together alone will be allowed to register for End Semester Examination. Others shall have to repeat the semester along with the next regular batch, unless they could make up the shortage of attendance through condonation.

7.2. Syllabus for Examination

For each End Semester Examination only the syllabus of the current semester shall be followed. All modules may be given equal weightage.

7.3. Submission of record books for Lab examinations

Students appearing for the Lab examinations should submit bonafide Record Books prescribed for lab examinations, duly certified by the Head of the Department. Otherwise the students will not be permitted to appear for the Lab examination. However, in genuine cases, the student may be permitted to appear for the lab examination, provided the concerned Head of the Department certifies that the student has completed the exercises prescribed for the Course. For such students zero (0) marks will be awarded for record books.

7.4. Mini Project

The fourth, fifth, sixth and seventh semesters include a Mini Project each, which shall be a group work. Team size shall preferably be three. Individual projects may be permitted in exceptional cases, for valid reasons. Mini Projects shall be purely internal in nature. The Mini Project should be done by the students based on concepts of the tools/platform/language taught in the particular semester.

The following shall be the components for internal evaluation of the Mini Project:

Presentation of the work	- 5 marks
Individual involvement & team work	- 5 marks
Timely submission & creativity	- 5 marks
Attendance	- 5 marks
Total	- **20 marks**

7.5. Major Project

The eighth semester shall include a project work that will involve the individual effort of the student to complete an assigned task under the guidance of a faculty member. This project should provide exposure to current industry best-practices. External evaluation of the Project work shall be done by an examiner(s) appointed by the University. Internal evaluation of the Project work shall be done by the Faculty Guide and/or other faculty members. The work shall be reviewed at least twice during the Semester and shall be considered as CA marks.

7.6 Criteria for Grading

For all Courses (Theory and Lab), Grades are given on a 7-point scale based on the total percentage of marks as given below.

Percentage of marks	ESE + CA	Letter Grade
90 and above	9 and above	A+ Outstanding
80 to < 90	8 to<9	A Excellent
70 to <80	7 to <8	B Very Good
60 to < 70	6 to < 7	C Good
50 to < 60	5 to < 6	D Satisfactory
35 to < 50	3.5 to < 5	E Adequate
Below 35	<3.5	F Failure

7.7. Criterion for Passing

A candidate will be declared to have passed a Course if he/she secures

i. a minimum of 35% in the End Semester Examination (ESE), and
ii. a minimum of 40% for Continuous Assessment and End Semester Examination (CA +ESE) put together

7.8. Consolidation of SCPA (Semester Credit Point Average):

SCPA is obtained by dividing the sum of Credit Points (CP) obtained in a semester by the sum of Credits (C) in that semester. After the successful completion of a semester, Semester Credit Point Average (SCPA) of a student in that semester shall be calculated.

Suppose there are four Courses each of 4 Credits and two Courses each of 2 Credits in a particular semester, after consolidating the Grade for each Course.

SCPA has to be calculated as shown in the example given below: **Consolidation of SCPA**						
Course Code	Title	Credit(C)	Marks(M)	Grades	Grade Points(G=M/10)	Credit Point CP=C*G
01	.....	4	82	A	8.2	32.8
02	.....	4	60	C	6.0	24.0
03	.....	4	50	D	5.0	20.0
04	.....	4	45	E	4.5	18.0
05	.....	2	75	B	7.5	15.0
06	.....	2	40	E	4.0	8.0
Total		20				119.8
SCPA = Total Credit Points/Total Credits =119.8/20 =5.99 = D Grade						

For the successful completion of a semester, a student has to score a minimum SCPA of 4.00 (E Grade). However, a student is permitted to move to the next semester irrespective of his/her SCPA.

7.9. Consolidation of CCPA (Cumulative Credit Point Average):

An overall letter Grade (Cumulative Grade) for the whole Programme shall be awarded to the student based on the value of CCPA using a 7- point scale, as given below. It is obtained by dividing the sum of the Credit Points in all the Courses taken by the student, for the entire Programme by the total number of Credits.

Consolidation of CCPA		
Semester	SCPA Credit Point(CP)	SCPA Credit(C)
1	119	4
2	120	4
3	110	4
4	105	4
5	100	2
6	120	2
Total	674	120
CCPA = Total Credit Points of all semesters/Total Credits of all semesters = 674/120 = 5.62 = D Grade		

Overall Grade in a Programme

Percentage of marks	ESE + CA	Letter Grade
90 and above	9 and above	A+ Outstanding
80 to < 90	8 to<9	A Excellent
70 to <80	7 to <8	B Very Good
60 to < 70	6 to < 7	C Good
50 to < 60	5 to < 6	D Satisfactory
35 to < 50	3.5 to < 5	E Adequate
Below 35	<3.5	F Failure

For the successful completion of the Programme and award of the Degree, a student must pass all Courses and must score a minimum CCPA of 4.00 or an overall grade of E

7.10. Re-appearance of Failed Students

If a student fails in one or more Courses, he/she need re-appear only for the failed Courses(s). He/she shall reappear for these Courses in the examination conducted for the next regular batch of students. A student is required to pass all the Courses of a particular Semester in a maximum of five (5) successive attempts and the same has to be done within a period of twelve (12) continuous semesters including the semester in which they have first appeared.

Students who fail to secure SCPA of 4.00 have to reappear for the ESE with the next regular batch of students for such courses for which they have secured the least Grade for improving the SCPA. Here also the number of appearance is limited to 5 and the same has to be done within a period of 12 continuous semesters including the semester in which they have first appeared.

8. Issue of Degree

The University of Kerala shall award the Bachelors in (Computer Science) (HI) degree on successful completion of the requirements of the Programme. The Students should have completed the course within the prescribed number of years.

9. Assessment

Special consideration shall be given to the mode of evaluation. Parts of the questions shall be multiple choice or one word questions with emphasis on testing comprehension. Special consideration shall be given to the issue that these students are not used to referring text books or reference books mentioned in the syllabus. However, the preparatory semesters is expected to improve this situation. Notes prepared by specialists for each subject of the special programme shall also be considered as reference notes. Short answer questions that test the comprehension of the subject matter shall be preferred to long essay type questions.

9.1. Pattern of Questions for Theory Courses (Core)

Section	Question Type	Total number of Questions	Number of Questions to be answered	Marks for each Question	Total Marks
A	Objective Questions : Multiple choice/ True or False/Match the columns/Fill in the blanks	20	20	1	20
B	Very short answer type, Declaration statements, (One word to Maximum of 2 sentences)	10	10	1	10
C	Short answer	14	10	2	20
D	Long Answer	8	5	3	15
E	Short essay / practical problems	5	3	5	15
	Total Marks				**80**

9.2. Pattern of Questions for Lab Courses

Section	Question Type	Total Marks
A	Program 1 – Easy to Medium level (Logic – 10 marks, Successful compilation – 10 marks, Output – 5 marks)	25
B	Program 2 – Difficult level (Logic – 15 marks, Successful compilation – 10 marks, Output – 5 marks)	35
	Quiz / Viva Voce	10
	Lab Record	10
	Total Marks	**80**

10. Note

The regulations for regular BSc Computer Science program shall be followed in all situations except in cases mentioned above.

C. SCHEME

Preparatory Year: Semester I

Course Code & Name		Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
		L	P					
PY 1.1	Reading & Writing English – Basics	12	-	20	80	28	100	40
PY 1.2	Mathematics – I	8	-	20	80	28	100	40
PY 1.3	Indian Sign Language – I (Audit Only)	4	-	-	-	-	-	S/ NS
PY 1.4	Office Automation Software Lab – I	-	6	20	80	28	100	40
Total:		**30 hrs.**		**60**	**240**	**-**	**300**	-

Preparatory Year: Semester II

Course Code & Name		Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
		L	P					
PY 2.1	Reading & Writing English – Intermediate	12	-	20	80	28	100	40
PY 2.2	Mathematics – II	8	-	20	80	28	100	40
PY 2.3	Indian Sign Language – II (Audit Only)	4	-	-	-	-	-	S/ NS
PY 2.4	Office Automation Software Lab – II	-	6	20	80	28	100	40
Total:		**30 hrs.**		**60**	**240**	**-**	**300**	-

[Note: Preparatory year carries zero (0) credits.]

Semester III

Course Code & Name		Credits	Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
			Lecture	Lab					
EHI 1311	Communicative English I	4	4	-	20	80	28	100	40
MHI 1331	Mathematics I	4	5	-	20	80	28	100	40
BCS 1341	Computer Fundamentals	4	5	-	20	80	28	100	40
BCS 1342	Introduction to Operating system	4	4	-	20	80	28	100	40
BCS 1343	Introduction to Operating system Lab	3	-	6	20	80	28	100	40
BCS 1344	Web Programming Using HTML - Lab	3	-	6	20	80	28	100	40
Total:		22	30 hrs.		120	480	-	600	-

Semester IV

Course Code & Name		Credits	Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
			Lecture	Lab					
EHI 1411	Communicative English II	4	4	-	20	80	28	100	40
MHI 1431	Mathematics II	4	5	-	20	80	28	100	40
BCS 1441	Programming using C	4	5	-	20	80	28	100	40
BCS 1442	Programming using C Lab	3	-	6	20	80	28	100	40
BCS 1443	Digital Design Lab	3	-	6	20	80	28	100	40
BCS 1444	Mini Project	3	-	4	20	80	28	100	40
Total:		**21**	**30 hrs.**		**120**	**480**	**-**	**600**	**-**

Semester V

Course Code & Name		Credits	Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
			Lecture	Lab					
EHI 1511	Communicative English III	4	4	-	20	80	28	100	40
BCS 1541	Data Structures	4	5	-	20	80	28	100	40
BCS 1542	Programming USING C++	4	5	-	20	80	28	100	40
BCS 1543	Programming using C++ Lab	3	-	6	20	80	28	100	40
BCS 1544	Multimedia Lab	3	-	6	20	80	28	100	40
BCS 1545	Mini Project	3	-	4	20	80	28	100	40
Total:		**21**	**30 hrs.**		**120**	**480**	**-**	**600**	**-**

Semester VI

Course Code & Name		Credits	Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
			Lecture	Lab					
EHI 1611	Communicative English IV	4	4	-	20	80	28	100	40
BCS 1641	Database Management System	4	5	-	20	80	28	100	40
BCS 1642	Computer Networks	4	5	-	20	80	28	100	40
BCS 1643	Programming using C# Lab	3	-	6	20	80	28	100	40
BCS 1644	Database Management System Lab	3	-	6	20	80	28	100	40
BCS 1645	Mini Project	3	-	4	20	80	28	100	40
Total:		**21**	**30 hrs.**		**120**	**480**	**-**	**600**	**-**

Semester VII

Course Code & Name		Credits	Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
			Lecture	Lab					
EHI 1711	Communicative English V	4	4	-	20	80	28	100	40
BCS 1741	Software Engineering	4	4	1	20	80	28	100	40
BCS 1742	Programming using Java	4	5	-	20	80	28	100	40
BCS 1743	ASP.Net Programming Lab	3	-	6	20	80	28	100	40
BCS 1744	Programming using Java Lab	3	-	6	20	80	28	100	40
BCS 1745	Mini Project	3	-	4	20	80	28	100	40
Total:		21	30 hrs.		120	480	-	600	-

Semester VIII

Course Code & Name		Credits	Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
			Lecture	Lab					
EHI 1801	Communicative English VI (Audit Only)	0	4	-	-	-	-	-	S/ NS
BCS 1841	Advanced Computing Concepts	4	4	-	20	80	30	100	40
BCS 1861.1 BCS 1861.2	**Electives**: PHP Lab Android Lab	4	-	8	20	80	30	100	40
BCS 1842	Major Project	6	-	14	100	300	105	400	160
Total:		14	30 hrs.		140	460	-	600	-

D. SYLLABUS DETAILS

Preparatory Year: Semester I

Course Code & Name		Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
		L	P					
PY 1.1	Reading & Writing English – Basics	12	-	20	80	28	100	40
PY 1.2	Mathematics – I	8	-	20	80	28	100	40
PY 1.3	Indian Sign Language – I (Audit Only)	4	-	-	-	-	-	S/ NS
PY 1.4	Office Automation Software Lab – I	-	6	20	80	28	100	40
	Total:	**30 hrs.**		**60**	**240**	**-**	**300**	-

PY 1.1 READING & WRITING ENGLISH – Basics

1. AIM

- To build a basic vocabulary of a minimum of 500 words.
- To familiarize students with various grammatical elements.
- To enhance the student's ability to read and write the English used in daily life.

2. OBJECTIVES:

On completion of this course, the student will be able to:

- understand simple written English.
- follow instructions given in simple English.
- use the basic sentence patterns.
- read and understand the meaning of sentences.
- learn to use nouns and adjectives.
- learn to use simple present tense.

3. SYLLABUS:

MODULE I:

Vocabulary:	Introducing Types of Vocabulary – Professions; food - fruits, vegetables, spices, nuts, meat; common things - stationery, furniture, household items, flowers, plants, trees, animals - cries, homes, young ones - birds, insects, vehicles, ornaments, garments, things on the road, musical instruments; body parts.
Structure:	Punctuation – capitalization, question mark, comma, full stop; articles; verbs (introduction); nouns - countable, uncountable - singular-plural; gender; determiners - this, that, those, these.
Composition:	Signboard interpretation.

MODULE II:

Prose Chapter:The Apple Tree.

Structure:	Adjectives & quantifiers; adverbs; pronouns - subject, object & possessive; tense – simple present tense; time and telling time.
Discourse:	Telling time from the clock.
Composition:	Comprehension passage; factual description.

MODULE III:

Structure: Types of Sentences – declarative, interrogative, imperative & exclamatory; tense – present, past & future; articles; sentence patterns - SV, SVO, SVA, SVC, SVDOPIO, SVIODO; frame questions.

Composition: Picture comprehension; jumbled sentences.

MODULE IV:

Prose Chapter: Other People's Houses.

Structure: Degrees of comparison - positive, comparative & superlative; adverbs - time, place, manner & frequency.

Composition: Diary Entry.

4. REFERENCES

4.1 Core

- Sasikumar,V. (2018). New Gul Mohar Reader 2, 8th Edition, Orient Blackswan. ISBN: 987-81-250-5631-7.

4.2 Additional

- Murphy, R. (2011). Essential Grammar in Use (2nd edition), Cambridge University Press. ISBN-13 978-81-7596-029-9.
- Lott, H. (2010). Real English Grammar – Pre-Intermediate. Marshall Cavendish Ltd. ISBN 978-81-309-0878-6.
- Murphy, R. (2007). Essential Grammar in Use (3rd edition), Cambridge University Press., ISBN 978-0-521-13393-7.
- Hewings, M. (2006). Advanced English Grammar. Cambridge University Press, ISBN 81-7596-067-1.
- Murphy, R. (2010). Murphy's English Grammar (3rd edition), Cambridge University Press., ISBN 978-0-521-61662-1.

4.3 Internet Resources

- www.englishpage.com
- www.englishgrammar101.com
- www.ego4u.com
- www.usingenglish.com
- www.grammarbook.com
- www.learn4good.com
- www.englishclub.com

MODEL QUESTION PAPER

PY 1.1 READING AND WRITING ENGLISH - Basics

Pages: 4

Time: 3 hours Maximum Marks: 80

(*Instructions: Write all the answers in full sentences.*)

Section A

Punctuate the following sentences. (5 x 1 = 5)

1. what are you doing next weekend
2. rome is the capital of italy.
3. She was young beautiful and intelligent.
4. Ajay and veena are friends
5. are you good at physics

Make two sentences using each of the following words; one with the word as noun and the other with the word as verb. (5 x 1 = 5)

6. train
7. smell
8. sleep
9. watch
10. plant

Rewrite the following sentences by changing the nouns and pronouns to their plural forms. (5 x 1 =5)

11. The thief killed the ox with his knife.
12. The teacher kept the book and the pen on the shelf.
13. The child had a baseball in this hand.
14. I cut the orange in half and ate it.
15. She is staying with her friend.

Frame questions so that you will get the underlined words as answers. (5 x 1 = 5)

16. I eat <u>eggs</u> for breakfast.
17. We will go to <u>Switzerland</u> next year.
18. I visited <u>my grandparents</u> last week.
19. He finished his studies in <u>2003</u>.
20. David likes cats <u>because they are nice</u>.

Write sentences in the given sentence patterns using the words given in brackets. (5 x 1 = 5)

(Ramu, Rajan, friends, school, went, game, teacher, gifts, football, play, Soniya, Rani, classroom, birds, playground, happy, tired, students, enjoyed, fly, paintings, painted, canteen, tea, snacks, yesterday)

21. SVO
22. SVA
23. SVC
24. SVDOPIO
25. SVIODO

Correct the mistakes in the following sentences. (10 x 1 = 10)

26. One day, Athira saw a envelope in the postbox. She opened it. It was an letter.
27. We need some new furnitures for our kictchen.
28. I need a money to the trip.
29. Nayan is the cleverest than girl on the team.
30. My friend has be studying at the college since five years.
31. He knew that he cannot escape from punishmnt.
32. They was searching for the lost ring in there rooms.
33. I need a toothbrush paste soap, and a comb.
34. Revathy is most honest girl in his class.
35. Wow what a beautiful flower

Fill in the blanks with suitable words. (10 x 1 = 10)

36. Are there _____ eggs in the fridge?
37. The boy was punished for stealing a _____ of bread.
38. There is a temple on the _____ of the hill.
39. I _____ take a bath before I go to bed.
40. This is my bag and that is _____.
41. Ben was surprised when _____ discovered that his friends were hiding in the living room.
42. The students _____ the surroundings of the ground every day.
43. _____ European visited our college last week.
44. Can I have _____ water, please?
45. There are _____ chocolates left.

Section B

Answer any five questions in complete sentences (5 x 2 = 10)

46. Why did the farmer want to cut the tree?
47. What are the reasons that the birds gave the farmer for not cutting down the tree?
48. In the end, why didn't the farmer cut down the tree?
49. What do you know about a tree house?

50. Why are houses in deserts made of clay and grass?
51. Why do some people build small, lighthouses?
52. What is a tepee?

Section C

Write a paragraph on any one of the following topics. **(5 x 1 = 5)**

53. Onam
54. Independence Day

55. **Write a paragraph or story in at least five sentences based on the given picture. (5)**

56. **Write a factual description of the following picture.** **(5)**

Read the following passage and answer the questions given below. **(5 x 2 = 10)**

Once there lived a very lazy man. He would stay in bed for days and would not move. Soon he became sick and fat. His family and friends were much worried. The lazy man's family met a doctor. They asked the doctor to visit their house and meet the lazy man. The doctor refused. "I will cure him, but he must come to my clinic," said the doctor. On the next day, after much effort, the lazy man was brought to the doctor. The doctor told the man that it was important to regain his health to have a good life. He also asked him to meet him the next day but he had to come by foot. The lazy man agreed. The doctor's house was at a distant place from the man's house, but for the treatment, the lazy man walked all the way to the doctor's clinic. He found it very difficult

to walk and his family walked with him. They helped him to reach the doctor's clinic, but the doctor was not at the clinic. The lazy man was sad to hear that. He had taken great effort to reach there, but he agreed to come again the next day. Again, on the next day, he came to the clinic, but could not meet the doctor. This continued every day for the next two weeks. The man could not meet the doctor during these days, but felt much lighter because he had lost weight walking every day from his house to the doctor's clinic. Now, he understood why the doctor did not meet him. The doctor had done that to make sure that the man would walk every day. The doctor wanted the man to get out of his bed and walk a distance. This helped the man to lose weight. He regained his health simply by being active. The man was thankful to the doctor for helping him. His family and friends were happy to see him active and healthy.

57. How did the lazy man become sick?
58. Explain what the lazy man did in the two weeks after his first visit to the doctor's clinic.
59. How did the man feel after walking to the doctor's clinic for two weeks?
60. Was the doctor a clever person? Why do you think so?
61. Give a suitable title to the story. Why have you given the title to the story?

PY 1.2 MATHEMATICS – I

1. AIM:

To enhance the mathematical skills of students to facilitate the learning of the core courses better.

2. OBJECTIVE:

Specific objectives of the course are:

a) to give an understanding of important mathematical concepts such as Fundamental operations, Theory of numbers, LCM, HCF, Average, Exponents and powers, Understanding 2-D shapes and to introduce students to mathematical techniques which are relevant to the real world.

b) to enhance those mathematical skills required for further studies in *mathematics.*

3. SYLLABUS:

Module I: Theory of numbers

Numbers, Patterns, predecessor and successor, Comparison of numbers, ascending and descending order, Place value, face value, Fundamental operations, Prime and composite numbers, Factorization, LCM, HCF, Conversion of units, Unitary method.

Module II: Number system

Fractions, Rational Numbers, Decimal numbers, Integers.

Module III: Exponents and Powers

Exponents, Laws of Exponents, Square root –Factorization and Long Division method, Cube root-factorization method

Module IV: Commercial Arithmetic

Percentage : Introduction, understanding percentage as a fraction, Converting fractions and decimal to percentage and vice versa, Finding percentage of a given number, Find the whole using a given percentage, Percentage increase and decrease, Simple word problems.

Profit & Loss: Introduction, profit and loss percent, Finding cost price and selling price when profit or loss percent are given, Simple word problems.

4. REFERENCES

4.1 Core

- NCERT Mathematics text book for class I to X

PY 1.2 MATHEMATICS I

Max Mark: 80 Max Time: 3 hrs

Fill in the blanks (1 x 10 = 10 marks)

1. The smallest 4 digit number is _____

2. The smallest whole number is _____

3. 5 tens + 11 = _____ ones

4. Is 11 a prime number? _____

5. The successor of 110 is _____

6. 16, 22,28,_____,40

7. a^m x a^n = _____

8. The decimal form of 24% is _____

9. $(-1)^9$ = _____

10. CP – SP = _____

Choose the correct answer (1x 10 = 10 marks)

11. 20 % of 20 is equal to

a. 20 b. 4 c. 0.4 d. 0.04

12. The smallest odd number is

a. 20 b. 2 c. 1 d. 5

13. ..... : 8 = 10 : 16

a.1 5 b. 2 c. 5 d. 4

14. Profit = ...

a. SP - CP b. CP - SP c. CP + SP d. Loss + CP

15. 10 + (-5) =.....

a. 5 b. -5 c. -15 d. 15

16. x^5 x x^2 x x^0

a. x^{10} b. x^7 c. x^0 d. x^{-10}

17. The square root of 144 is .....

a. $\sqrt{12}$ b. $\sqrt{11}$ c. 12 d. 4

18. If selling price is less than cost price, then it is ----------

a. Profit b. gain c. Loss d. None

19. HCF stands for _____

a) Highest Central Value b) Highest Common Factor c) Highest Common Function d) Huge Common Function

20. 1 km = _____ m

a) 1000 b) 10 c) 100 d) 10000

Answer any 10 questions. (10 x 1 =10 marks)

21. Find the sum of 3005.18 and 1808.5

22. Find the difference of 160.01 and 305.5

23. Subtract 345.5 from 450

24. Find the product of 23.5 and 25

25. Divide 225 by 25

26. Evaluate 2.5 + 3.6 - 1.55

27. Evaluate 25 x 4 x 2.03

28. Evaluate (25% of 100) + (50% of 100)

29. Evaluate 1000 + 20 + 30000 + 9

30. Evaluate 3000 – 285 + 200

31. Evaluate (-8987) – (-2000)

32. Evaluate 4568 ÷ 25

Answer any 10 questions. (2 x 10 = 20 marks)

33. $\frac{12}{15} + \frac{14}{17}$

34. $\frac{21}{9} - \frac{42}{6}$

35. $\frac{7}{10} \div \frac{14}{20}$

36. Find the LCM of 25,50 and 100

37. Find the HCF of 100, 125, 150

38. *Evaluate* 102 + 52 - 33

39. *Evaluate* 52 x 33 x $(\frac{2}{9})^2$

40. $Evaluate\ (y + 8) - (3 - y)$

41. $(x^a + 1)^5 = x^2 . X^{13}$

42. If I= 1200, N=3years, R= 2%, find P?

43. A TV is purchased at Rs. 5000 and sold at Rs. 4000, find the loss or profit.

44. Subtract the sum of 3455 and -253 from 45000

Answer any 10 questions. (3 x 10 = 30 marks)

45. A sum of Rs. 12,500 amounts to Rs. 15,500 in 4 years at the rate of simple interest. What is the rate of interest?

46. What is the compound interests on Rs. 5000 for $1\frac{1}{2}$ years at 4% per annum compounded half-yearly?

47. Alfred buys an old scooter for Rs. 4700 and spends Rs. 800 on its repairs. If he sells the scooter for Rs. 5800, find the gain percent?

48. A teacher purchases 42 Mathematics books and 42 English books for his class. If the cost of a Mathematics book is Rs 52 and the cost of an English book is Rs48. Find the total amount paid by the teacher to the shopkeeper.

49. Evaluate $6x(8 + 6x)(8 - 8x)$

50. Evaluate $(-2-2y)(-4-3y)(7+8y)$

51. Hari deposited Rs.10,000 in the bank which gave interest 2%. What amount will she receive after 1 years and 6 months?

52. Find the Square Root of 225.0023 using long division method.

53. Simplify using BODMAS rule:

(a) 25 - 48 ÷ 6 + 12 × 2

(b) 78 - [5 + 3 of (25 - 2 × 10)]

54. What will be the compound interest on a sum of Rs. 40,000 after 3 years at the rate of 11% per annum?

55. Simplify using BODMAS rule:

(a) 25 - 48 ÷ 6 + 12 × 2

(b) 78 - [5 + 3 of (25 - 2 × 10)]

56. A fruit vendor bought 600 apples for $ 4800. He spent $ 400 on transportation. How much should he sell each to get a profit of $ 1000?

PY 1.3 INDIAN SIGN LANGUAGE – I (Audit only)

1. AIM:

To promote the use of Indian Sign Language since ISL is the medium of communication through which literature and course matter is taught.

2. OBJECTIVES:

1. To acquire signs for a basic functional vocabulary of 400+ words.
2. To learn 100-150 conversational sentences including statements, questions and instructions.
3. Basic communicative competence in Indian sign language.

3. SYLLABUS:

Module I

Basic functional vocabulary, Simple sentences, Greetings, Describing people and objects, Pronouns, Family relationships, our body.

Module II

Question with question words, Interrogatives, Places, People, Numbers, and Time.

Module III

Negative sentences & commands, Negative responses to offers /suggestions, Dialogue construction in different situations, Opposites, Finger spelling.

Module IV

Text, Colours, Calendar (week/month/year), Food (vegetables, fruits, etc), Animals.

4. REFERENCES:

4.1 Core

- Ramakrishna Mission Vidyalaya(2001): The Indian Sign Language Dictionary
- Zeshan, Ulrike (2001): Workbook for the Basic course in Indian Sign Language (Level A)
- Zeshan, Ulrike (2002): Workbook for the Advanced course in Indian Sign Language (Level B)
- Madan Vasishta, James Woodward & Susan deSantis:(I 950): An Introduction to Indian sign Language(Focus on Delhi). New Delhi: All India Federation Of The Deaf.

4.2 Video Materials:

- Zeshan, Ulrike(2001): Workbook for the Basic course in Indian Sign Language(Level A)
- Zeshan, Ulrike(2002): Workbook for the Advanced course in Indian Sign Language(Level B)

4.3 Internet resources

- www.indiansignlanguage.org
- www.deafsigns.org

5. NOTE ON CURRICULAR TRANSACTIONS:

Hearing impaired children have very special educational needs. In many ways they require qualitatively different services from the hearing children, such as specific communication methods and teaching techniques, and a special curriculum for the purpose of development of concepts and a sound language foundation. Hearing children begin school with a well-developed oral language system which is used as the medium for their instruction and which is the basis for development of reading and writing skills. As against this, for most deaf children, a primary overriding goal is to develop the basic language skills before they begin their formal academic education.

6. NOTE ON ASSESSMENT:

Since ISL cannot be written or spoken, assessment shall be done through activity.
There are three criteria by which the students shall be assessed.

1. Knowledge
2. Accuracy
3. Fluency

The assessment will be done in 3 levels. The first level will include testing of functional vocabulary, simple statement/questions, and negative sentences. The students will have to sign a story and participate in a dialogue wherein the situation will be provided, in the second level. In the third level, the students will have to sign a written paragraph.

PY 1.4 OFFICE AUTOMATION SOFTWARE LAB – I

1. AIM:

To gain hands on knowledge in standard application software and its utilities.

2. OBJECTIVES:

Upon completion of this course, the student will be able to

- Organize and work with files and folders.
- Use a suite of productivity tools that will aid in day to day activities.
- Use a standard spreadsheet processing package exploiting popular features.
- Use a standard presentation package exploiting popular features
- Access the Internet, Worldwide Web, as well as use Internet directories and search engines, and locate www addresses.

3. SYLLABUS:

Unit 1-

Lab Sessions to Practice the following features on a selected GUI

Icons, menus, MS Windows parts, and use of buttons, folder creation, deletion, mouse operations: click, double click, drag and drop, Windows components: program manager, file manager, clip board, print manager, accessories, Customizing desktop, creating short cuts, Recycle Bin, System Restore, Compress and decompress a file

Unit 2-

Lab Sessions to Practice the following features on a selected Word Processor (depending on availability):

General: Menus, Shortcut menus, Toolbars, Customizing toolbars, Creating and opening documents, Saving documents, Renaming documents, Working on multiple documents, Close a document; Working With Text: Typing and inserting text, Selecting text, Deleting text, Undo, Formatting toolbar, Format Painter, Formatting Paragraphs: Paragraph attributes, Moving, copying, and pasting text, The clipboard, Columns, Drop caps; Styles : Apply a style, Apply a style from the style dialog box, Create a new styles from a model, Create a simple style from the style dialog box

Unit 3-

Lab Sessions to Practice the following features on a selected Word Processor:

Lists: Bulleted and numbered lists, Nested lists, Formatting lists Tables: Insert Table button, Draw a table, Inserting rows and columns, Moving and resizing a table, Tables and Borders toolbar, Table properties Graphics: Adding clip art, Add an image from a file, Editing a graphic, AutoShapes;

Spelling and Grammar: AutoCorrect, Spelling and grammar check, Synonyms, Thesaurus; Page Formatting: Page margins, Page size and orientation, Headers and footers, Page numbers, Print preview and printing.

Unit 4-
Lab Sessions to Practice the following features on a selected Browser (depending on availability): Standard Tool Bars: Basic Browsing Buttons: forward, backward, home, save, save as, Saving an Image from the Web, printing, Specifying a Home Page, Browsing: Using Web URLs, Signing up for email service

4. REFERENCES:

www.openoffice.org Open Office Official web site
www.microsoft.com/office MS Office web site
http://www.baycongroup.com/el0.htm
http://www.baycongroup.com/powerpoint2007/index.htm

Preparatory Year: Semester II

Course Code & Name		Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
		L	P					
PY 2.1	Reading & Writing English – Intermediate	12	-	20	80	28	100	40
PY 2.2	Mathematics – II	8	-	20	80	28	100	40
PY 2.3	Indian Sign Language – II (Audit Only)	4	-	-	-	-	-	S/ NS
PY 2.4	Office Automation Software Lab – II	-	6	20	80	28	100	40
	Total:	**30 hrs.**		**60**	**240**	**-**	**300**	-

PY 2.1 READING & WRITING ENGLISH – Intermediate

1. AIM

- To build a basic vocabulary of at least 1000 words.
- To familiarize students with various grammatical elements.
- To enhance the student's ability to read and write the English used in daily life.

2. OBJECTIVES

On completion of this course, the student

- Understands simple written English.
- Follows instructions given in simple English.
- Uses the basic sentence patterns.
- Uses different types of sentences meaningfully.
- Constructs grammatically correct sentences meaningfully.
- Composes simple letters.

3. SYLLABUS

MODULE I

Prose Chapter:	The Golden Windows
Structure:	Conjunctions - and, as well as, but, or, so, because, as, for; preposition of time & place – in, on, at, from, to, for & of; asking permission – may, could.
Composition:	Picture description (simple); paragraph writing; finding the key idea from a paragraph/story.

MODULE II:

Structure:	Types of sentences; reported speech; adjectives - order of occurrence; conjunction - after, before; question tag; contractions - shan't, won't, it's, etc.
Composition:	Dialogue completion; resume; formal Letter - requests & job applications.

MODULE III:

Prose Chapter:The Lost Gull.

Structure:	Compound nouns; preposition - with, under, over, behind, in front of, above, below.
Composition:	Sequencing the sentences; Letter Writing – formal (leave letter).

MODULE IV:

Structure:	Subject-predicate; active-passive voice.
Composition:	Comprehension passage; composing SMS; dialogue writing; report writing; jumbled sentences.

4. REFERENCES

4.1 Core

- Sasikumar,V. (2018). New Gul Mohar Reader 2, 8th Edition, Orient Blackswan. ISBN: 987-81-250-5631-7.

4.2 Additional

- Murphy, R. (2011). Essential Grammar in Use (2nd edition), Cambridge University Press. ISBN-13 978-81-7596-029-9.
- Lott, H. (2010). Real English Grammar – Pre-Intermediate. Marshall Cavendish Ltd. ISBN 978-81-309-0878-6.
- Murphy, R. (2007). Essential Grammar in Use (3rd edition), Cambridge University Press., ISBN 978-0-521-13393-7.
- Hewings, M. (2006). Advanced English Grammar. Cambridge University Press. ISBN 81-7596-067-1.
- Murphy, R. (2010). Murphy's English Grammar (3rd edition), Cambridge University Press., ISBN 978-0-521-61662-1.

4.3 Internet Resources

- https://learnenglish.britishcouncil.org/english-grammar-reference/permission
- https://learnenglish.britishcouncil.org/english-grammar-reference/adjective-order
- www.englishpage.com
- www.englishgrammar101.com
- www.ego4u.com
- www.usingenglish.com
- www.grammarbook.com
- www.learn4good.com
- www.englishclub.com

MODEL QUESTION PAPER

PY 2.1 READING AND WRITING ENGLISH - Intermediate

Pages: 3

Time: 3 hours Maximum Marks: 80

(*Instructions: Write all the answers in full sentences.*)

Section A

Write one example for each of the following types of sentences. (4 x 1 = 4)

1. Declarative sentence
2. Interrogative sentence
3. Imperative sentence
4. Exclamatory sentence

Add the suitable tag to the following sentences. (5 x 1 = 5)

5. They are working on a new project.
6. He called her.
7. The students had hardly finished the exam.
8. Ram and his sister never drink coffee.
9. You won't reach on time.

Change the following sentences from active to passive voice. (5 x 1 = 5)

10. Renu made a cake yesterday.
11. The tiger was chasing the deer.
12. She has written a novel.
13. Arun plays volleyball.
14. My father will buy a new car.

Change the sentences in direct speech to indirect speech. (5 x 1 = 5)

15. The girl said to the man, "Please, give me the big glass."
16. The boy said, "What a big wall!"
17. The teacher said to the students, "Are you coming tomorrow for the extra class?"
18. Manu says to the girl, "Trained dogs do not bite others."
19. The commander said to the soldiers, "Load your guns quickly."

Form sensible sentences from the words given below. (5 x 1 = 5)

20. the/ her/ headmaster/ result/ showed/ the
21. child/ they/ hospital/ unconscious/ they/ took/ the/ to
22. she/ me/ firm/ offered/ handshake/ a
23. broke/ cupboards/ thieves/ house/ open/ the/the/the/ in
24. the/ table/ he/ book/ left/ the/ at

Fill in the blanks with suitable words. (6 x 1 = 6)

25. I like sugar in my tea, _____ I don't like milk in it.
26. Is it Thursday _____ Friday today?
27. We have a responsibility to our community _____ to our families.
28. My train leaves _____ 10.30.
29. The letter is _____ my desk.
30. He lives _____ his grandmother.

Section B

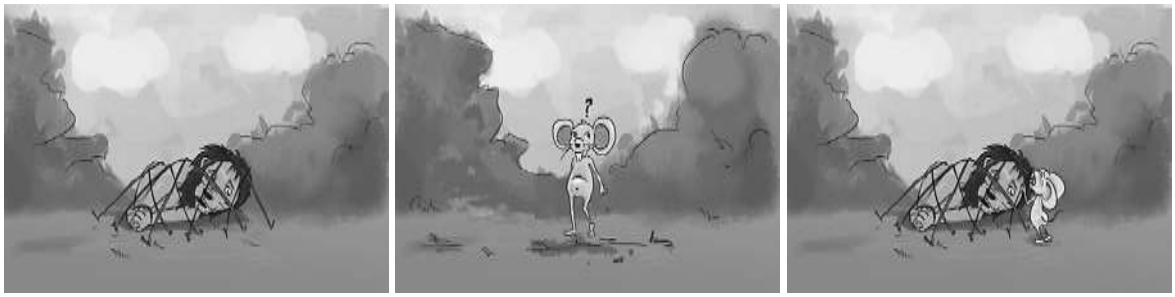
Answer *any five* questions in complete sentences. (5 x 2 = 10)

31. How did Kamala persuade her mother to go on a ride to the valley?
32. Kamala thought she would cry. Why?
33. Why were the windows golden?
34. What happened to the gull?
35. How did the children's mother help the gull?
36. What happened between the children and the dog?
37. How did the gull return the kindness that the children showed it?

Section C

38. Write a story from the pictures given below. (5)

1 2 3



4 5 6

7

39. Write a report on the arts festival conducted at your college. (5)
40. You bought a book from DC Books. You have noticed that some of its pages are missing. Write a letter of complaint to the manager of DC Books. (5)
41. You read an advertisement for the post of a Mechanical Engineer at ITC Technologies Limited. Write a resume to apply for the post. (5)

42. Fill in the blanks with suitable dialogues. (10)

Danish: When are you going home?
Navjot: ……..

Danish: Oh! You are going tomorrow! Why?
Navjot: ……
Danish: You are participating in your father's retirement function! Wonderful!
Navjot: ……..
Danish: It is a great thing that all the children are participating in the function.
Navjot: ……
Danish: What gifts are you giving?
Navjot: ……
Danish: Good. So, you are gifting his favourite book. What about others?
Navjot: ……..
Danish: Great that your sister is gifting him a car.
Navjot: ……
Danish: It is a very good thing that he loves travelling.
Navjot: ……
Danish: All India tour!! That will be nice. Are you going with him?
Navjot: ……..
Danish: When will you come back?
Navjot: ……..

Read the following passage and answer the questions that follow. (5 x 2 =10)

After twenty-one years of marriage, a man's wife asked him to take another woman out to dinner and a movie. She said, "I love you, but I know this other woman loves you. She would love to spend some time with you."

The other woman that the wife wanted her husband to visit was his mother, who had been a widow for nineteen years. He could visit her only occasionally. That night he called his mother to go out for dinner and a movie. She thought about it for a moment, and then said, "I would like that very much."

On the next Friday, after work, the man drove over to pick her up. When he arrived at his mother's house, she was waiting for him at the door. She smiled like an angel. "I told my friends that I was going out with my son," she said.

They went to a restaurant. He read the menu out to her. The mother said, "It was I who used to have to read the menu when you were small." During the dinner, the mother and son had a good conversation. They talked so much that they missed the movie. As they returned to her house, she said, "I'll go out with you again, but only if you let me invite you." The man agreed.

"How was your dinner?" asked the man's wife when he got home. "Very nice," he answered.

A few days later, the mother died. At that time, he understood the importance of that last meeting with his mother.

43. What was the reason that the wife gave for taking the other woman out for dinner?
44. Was the mother happy when her son saw her waiting at the door? Why do you think so?
45. The mother and the son missed doing something together. What was it? Why did they miss it?
46. The son's dinner out with his mother was an important incident in his life. Why?
47. Give a suitable title to the story. Why did you give the title to the story?

PY 2.2 MATHEMATICS – II

1. AIM

To enhance the mathematical skills of students to facilitate the learning of the core courses better.

2. OBJECTIVE

Specific objectives of the course are:

a) to give an understanding of important mathematical concepts such as commercial arithmetic, ratio and proportion, quadratic equations, simple and compound interest, understanding 3D shapes and to introduce students to mathematical techniques which are relevant to the real world.

b) to enhance those mathematical skills required for further studies in mathematics.

3. SYLLABUS

Module I: Linear Equations

Introduction, Linear equation in one and two variables – addition, subtraction, multiplication, division. Solution of Linear equation in one variable, Solution of Linear equation in two variables using Substitution & Elimination method.

Quadratic Equations

Introduction, Solution of quadratic equation-Factorization method, Quadratic formula, completing the square method.

Module II: Ratio and Proportion

Ratio, Proportion, simple word problems.

Module III: Simple Interest and Compound Interest

Computing simple interest, Solving for principal, rate and time, computing compound Interest using formula.

Module IV: 2D and 3D Shapes

Understanding 2-D shapes - Identification and counting of vertices, edges and faces of 2-D shapes, Line, line segments, ray, point, vertical lines, horizontal lines, parallel lines, perpendicular lines, Perimeter and Area of rectangle, square, triangle, circle and parallelogram.

Understanding 3-D shapes - Identification and finding the Lateral Surface area, Total Surface Area and Volumes of Cuboid, Cube, Cylinder, Sphere, Hemisphere, Cone, Combination of Solids (Surface area and volume)

4. REFERENCES

4.1 Core

- NCERT Mathematics text book for class I to X

MODEL QUESTION PAPER

PY 2.2 MATHEMATICS

Max Marks: 80 Max Time: 3 hrs

SECTION A

Fill in the blanks (1 x 10 = 10 marks)

1. Sum of the angles inside a triangle is _____.

2. A Cuboid has _____ number of faces.

3. The amount invested is called _____

4. If $\frac{x}{6} - 2 = 3$, then $x =$ _____

5. The ratio of the number of 30 days to 31 days is _____

6. The degree of $y^2 - 3xy + x^2y^2$ is _____

7. The simplest form of the ratio 27:90 is _____

8. Number of faces in a Cylinder is _____

9. The coefficient of $y \; in \; 2ay$ is _____

10. If two ratios are equal, then they are in _____.

Choose the correct answer (1 x 10 = 10 marks)

11. Which of the following is NOT a 2D shape?

a. Rectangle

b. Circle

c. Oval

d. Cylinder

12. What are vertices?

a. sides

b. angles

c. faces

d. corners

13. Which shape has 5 sides?

a. hexagon

b. triangle

c. square

d. pentagon

14. How many sides does a quadrilateral have?

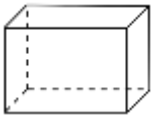
a. 3

b. 4

c. 5

d. 6

15. What is this 3D shape called?



a. cube
b. rectangle
c. rectangular prism
d. square

16. Which 2D shape has 3 sides?

a. triangular prism
b. triangle
c. rectangle
d. diamond

17. A solid object has six faces which are all squares. What is the name of this object?

a. Cylinder
b. Cube
c. Cuboid
d. Cone

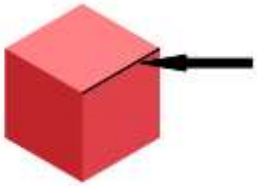
18. How many vertices does this shape have?

a. Triangle
b. 2
c. 3
d. 4

19. What shape is this?

a. Cone
b. Sphere
c. Cuboid
d. None of these

20. The lines on a 3D shape are called….

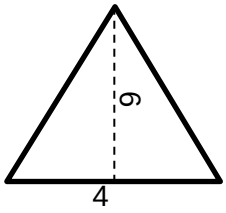


a. Edges
b. Vertices
c. Faces
d. None of these

SECTION B

Answer any 12 questions (12 x 2 = 24 marks)

21. Calculate the area of the triangle shown.



22. Calculate the surface area of a sphere whose diameter is 2.4 cm.

23. Calculate the volume of a cylinder whose base area is 12π cm^2 and height is 7cm.

24. The perimeter of a rectangle is 50 cm. The length is 15 cm. What is the area?

25. In a fruit shop the ratio of oranges to apples is 2:5.If there are 60 apples, then find the number of oranges?

26. Out of 30 students in a class, 6 like football, 12 like cricket and remaining like tennis. Find the ratio of

(a)Number of students liking football to the number of students liking tennis

(b)Number of students liking cricket to the total number of students

27. Find the root of $3x^2 - 5x + 2 = 0$ by quadratic formula?

28. Divide Rs 1250 between Tilak, Mukund and Shahid in the ratio 8: 7: 10?

29. By selling a dinner set for Rs 4320 a crockery dealer made a profit of 8%.Find the CP of the dinner set?

30. 2:5 and 30:20 are in equal ratios? True OR False? Explain?

31. Find the root of $x^2 - 4x + 4 = 0$ by factorization method?

32. Find the value of x , $if\ x : 5 :: 28 : 35$?

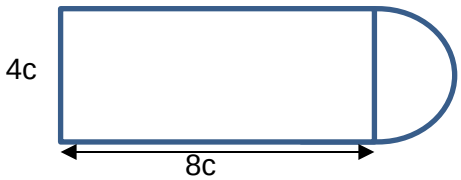
33. Calculate the area of a circle with diameter 10m.

34. Find the discriminant of $2x^2 - 4x + 3 = 0$?

SECTION C

Answer any 12 questions (12 x 3 = 36 marks)

35. Calculate the area of the following figure

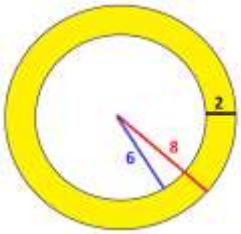


36. Find the volume of oil that can be poured into a container of dimensions 13 cm × 8 cm × 11 cm.

37. The perimeter of a rectangular concrete slab is 82 feet and its area is 364 square feet. What is the length of the longer side of the slab?

38. A picture is 60cm wide and 18cm long. Find the ratio of its width to its perimeter in lowest form?

39. The radius of a circular path of garden is 6 meters. A circular path of width 2 meters is laid around and outside the garden. Find the area of the path.



40. Find the root of $x - \frac{1}{x} = 3$?

41. Anoop bought a second hand scooter for Rs 10000 and spend Rs 1000 on its repairs. Then he sold it to Ajay at a loss of 10%.What is Anoop's loss?

42. Solve $\frac{3x+2}{14} = \frac{x-5}{9}$

43. What is the profit or loss when

a. A bag bought for Rs 490 is sold for Rs 400?

b. An umbrella bought for Rs 150 is sold for Rs 200?

44. Abraham bought a music system for $ 6375.00 and spent $ 75.00 on its transportation. He sold it for $6400.00. Find his profit or loss percent.

45. Find the root of $2x^2 - 5x + 3 = 0$ by completing the square method?

46. Find the LSA, TSA and Volume of a cylinder whose base area is 4π cm^2.

47. Find the volume and surface area of a cube of side 14 cm.

48. The volume of a sphere is 36 cubic cm. Find the total surface area of the sphere.

PY 2.3 INDIAN SIGN LANGUAGE – II (Audit Only)

1. AIM

To promote the use of Indian Sign Language since ISL is the medium of communication through which literature and course matter can be taught.

2. OBJECTIVES

- To acquire signs and become fluent in sign usage.
- To develop a standard signing among the students
- To reinforce the signs learnt in Semester I
- Basic communicative competence in Indian sign language.

3. SYLLABUS

Module I

Common objects (clothing for boys and girls, household, etc.), plants, transport, states, countries

Module II

Professions, Actions, At the Hospital, etc.

Module III

Dialogue construction in different situations.

Module IV

Story narration, beverages, manners, etc

Also, the basics learnt in ISL 1111 shall be revised and more communication activities shall be practiced.

4. REFERENCES

4.1 Core

- Ramakrishna Mission Vidyalaya(2001): The Indian Sign Language Dictionary
- Zeshan, Ulrike (2001): Workbook for the Basic course in Indian Sign Language (Level A)
- Zeshan, Ulrike (2002): Workbook for the Advanced course in Indian Sign Language (Level B)
- Madan Vasishta, James Woodward & Susan deSantis:(I 950): An Introduction to Indian sign Language(Focus on Delhi). New Delhi: All India Federation Of The Deaf.

4.2 Video Materials:

- Zeshan, Ulrike(2001): Workbook for the Basic course in Indian Sign Language(Level A)
- Zeshan, Ulrike(2002): Workbook for the Advanced course in Indian Sign Language(Level B)

4.3 Internet resources

- www.indiansignlanguage.org
- www.deafsigns.org

5. NOTE ON CURRICULAR TRANSACTIONS

Hearing impaired children have very special educational needs. In many ways they require qualitatively different services from the hearing children, such as specific communication methods and teaching techniques, and a special curriculum for the purpose of development of concepts and a sound language foundation. Hearing children begin school with a well-developed oral language system which is used as the medium for their instruction and which is the basis for development of reading and writing skills. As against this, for most deaf children, a primary overriding goal is to develop the basic language skills before they begin their formal academic education.

6. NOTE ON ASSESSMENT

Since ISL cannot be written or spoken, assessment shall be done through activity.
There are three criteria by which the students shall be assessed.

1. Knowledge
2. Accuracy
3. Fluency

The assessment will be done in 3 levels. The first level will include testing of functional vocabulary, simple statement/questions, and negative sentences. The students will have to sign a story and participate in a dialogue wherein the situation will be provided, in the second level. In the third level, the students will have to sign a written paragraph.

PY 2.4 OFFICE AUTOMATION SOFTWARE LAB – II

1. AIM:

To gain hands on knowledge in standard application software and its utilities.

2. OBJECTIVES:

After the completion of this course, the student should be able to

- perform accounting operations
- perform presentation skills
- use an office automation suite exploiting popular features.

3. SYLLABUS:

Unit 1-

Lab Sessions to Practice the following features on a selected SPREADSHEET

Creating a Workbook: Entering of data: text, value, formula; Work in cells and ranges: Copying data, Deleting data, Formatting data ; Undo; Use of short cut menu; Entering data automatically, Modifying data; Insert cells

Unit 2-

Lab Sessions to Practice the following features on a selected SPREADSHEET

Tabulation; Graph plotting; Spreadsheet application using formulas; Sorting, Filter

Unit 3-

Lab Sessions to Practice the following features on a selected PRESENTATION SOFTWARE: Introduction: Presentation, Slide, Slideshow; Starting PowerPoint, First Screen, Changing Font, font size, moving frame and inserting Clip Art, Inserting Picture, Inserting New Slide, Copying picture from previous slide, Moving the text, Inserting Text, Sizing Box, Text styling, send to back.

Unit 4-

Lab Sessions to Practice the following features on a selected PRESENTATION SOFTWARE: Giving Animation effect to presentation, Saving a Presentation, Running a Presentation

4. REFERENCES:

4.1 Core

- Comdex Information Technology course tool kit Vikas Gupta, WILEY Dreamtech, 2005

4.2 Internet References

- www.openoffice.org Open Office Official web site
- www.microsoft.com/office MS Office web site
- http://www.baycongroup.com/el0.htm
- http://www.baycongroup.com/powerpoint2007/index.htm
- http://www.gcflearnfree.org/office2007

Semester III

Course Code & Name		Credits	Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
			Lecture	Lab					
EHI 1311	Communicative English I	4	4	-	20	80	28	100	40
MHI 1331	Mathematics I	4	5	-	20	80	28	100	40
BCS 1341	Computer Fundamentals	4	5	-	20	80	28	100	40
BCS 1342	Introduction to Operating system	4	4	-	20	80	28	100	40
BCS 1343	Introduction to Operating system Lab	3	-	6	20	80	28	100	40
BCS 1344	Web Programming Using HTML - Lab	3	-	6	20	80	28	100	40
	Total:	**22**	**30 hrs.**		**120**	**480**	**-**	**600**	-

EHI 1311 COMMUNICATIVE ENGLISH – I

1. AIM

- To enable the students to understand written English effortlessly.
- To build a set of new vocabulary of at least 1000 words.
- To enhance the student's ability to read and write the English used in daily life.
- To familiarize students to write in academic, social and work related situations

2. OBJECTIVES

On completion of this course, the student will

- Understand the use of English in everyday life.
- Respond to communication in English in different contexts.
- Compose paragraphs meaningfully and correctly.
- Construct grammatically correct sentences meaningfully.
- Compose simple letters.
- Get an idea of what a proposal is.
- Arrange sentences in logical order.

3. SYLLABUS

MODULE I:

Prose Chapter: Hundreds and Hundreds of Wags.

Structure: Prepositions - along, above, about, by, behind, below, before, after; adjectives; linkers – just as, one day, at last, suddenly, immediately, then; reported speech.

Composition: Proposal writing; describing a place of visit based on clues; report writing – basics; jumbled sentences

MODULE II:

Prose Chapter: Safe Again.

Structure: Tense - simple and continuous; Noun - types and use - proper, common, collective, abstract; conjunction - if, until, till, unless, when, while, so-that.

Composition: Poster preparation; making definitions from factual descriptions.

MODULE III:

Prose Chapter: A Wonderful Gift.

Structure: Adjectives - degrees of comparison; past tense – simple and perfect. Pronouns – reflexive & relative.

Composition: Comprehension passage; finding the key idea from a paragraph/story.

MODULE IV:

Structure:	Adverbs - types; punctuation - quotes, exclamation, hyphen; Frame questions - wh-questions and yes/no questions; question tag - positive-negative sentences - adverbs like seldom, rarely, hardly, etc.
Composition:	Paragraph writing, letter writing - formal & informal; arrange the sentences in order.

4. REFERENCES

4.1 Core

- Aroor, U. & Blane C. (2018). New Gul Mohar Reader 3, 8th Edition, Orient Blackswan. ISBN: 987-81-250-5631-4.

4.2 Additional References

- Murphy, R. (2011). Essential Grammar in Use (2nd edition), Cambridge University Press. ISBN-13 978-81-7596-029-9.
- Lott, H. (2010). Real English Grammar – Pre-Intermediate. Marshall Cavendish Ltd. ISBN 978-81-309-0878-6.
- Murphy, R. (2007). Essential Grammar in Use (3rd edition), Cambridge University Press., ISBN 978-0-521-13393-7.
- Hewings,M. (2006). Advanced English Grammar. Cambridge University Press., ISBN 81-7596-067-1.
- Murphy, R. (2010). Murphy's English Grammar (3rd edition), Cambridge University Press., ISBN 978-0-521-61662-1.

4.3 Internet Resources

- www.englishpage.com
- www.englishgrammar101.com
- www.ego4u.com
- www.usingenglish.com
- www.grammarbook.com
- www.learn4good.com
- www.englishclub.com

MODEL QUESTION PAPER

EHI 1311 – Communicative English I

Pages: 4

Time: 3 hours Max Marks: 80

(*Instructions: Write all the answers in full sentences.*)

Section A

Write down the correct tense forms of the verbs given in brackets. (10 x 1 = 10)

1. When I _____ (reach) the office yesterday, my boss _____ (wait) there for me. He _____ (tell) me that he _____ (expect) me since 9.30 a.m. I _____ (become) very tensed. I _____ (ask) him what the problem _____ (be). He _____ (shout) at me that I _____ (not do) the work he _____ (assign) to me.

Fill in the blanks with suitable words. (10 x 1 = 10)

2. The _____ of wolves supported Mowgli.
3. A _____ of girls are singing in the church.
4. The fox couldn't reach the _____ of grapes.
5. The _____ gave its verdict.
6. My father, ____ works in New Delhi, is now at home on leave.
7. Where is the boy____ secured the first prize?
8. The place, ____ we hang out, is a mall.
9. Where is the boy ____ hair is red in colour?
10. The picture is ____ the clock.
11. Let's walk ____ the road.

Combine the sentences using the conjunctions given in brackets. (10 x 1 = 10)

12. I will share the location on WhatsApp. You can find the place easily. (so-that)
13. I saw a snake. I was going to college. (when)
14. You study. You won't pass with good marks. (unless)
15. I held her hands firmly. She became more calm. (until)
16. It rains. You get wet. (if)
17. We have to arrange the hall. All programmes will go on smoothly. (so-that)
18. Others cheat you. You are not careful. (if)
19. Manu was drawing a picture. The teacher was teaching in the class. (while)
20. You come to me. I cannot go. (until)
21. She reaches on time. She won't get the train. (unless)

Change the following sentences into reported speech. (1 x 5 = 5)

22. "I saw three snakes in the garden," he said.
23. Mom asked, "Where have you spent all your money?"
24. Anne said, "My husband likes this town."

25. Father says, “I am angry with you.”
26. Malu said, “Veena can speak five languages.”

Correct the mistakes in the following sentences. (1 x 5 = 5)

27. One day, Athira saw a envelope in the postbox. She opened it. It was an letter.
28. We need some new furnitures to our kitchen.
29. I need a money to the trip.
30. Nayan is the cleverest than girl on the team.
31. My friend has be studying in NISH since five years.

Rearrange the jumbled words into meaningful sentences. (1 x 5 = 5)

32. forgets/often/brush/teeth/to /his/he
33. to/temple/goes/everyday/mother/my
34. some/to/wanted/books/I/buy
35. that/were/the/found/they/closed/all/shops
36. ice cream/ would/to/have/I/an/like

Section B

Answer *any ten* of the following questions. (10 x 2 = 20)

37. What could Husky ‘not’ do? Why?
38. Why did the old dog think that the pup was silly? What did he teach Husky?
39. How was Husky able to wag his tail at last? What happened when he did this?
40. “But it’s your bone!” said the old dog. Why did the old dog say this? What was Husky’s reply?
41. “I hear chipping from the egg close to my own broken shell.” What happens after this?
42. Why does the baby bird become think and weak?
43. How does the baby bird know that it is safe?
44. Who takes the baby bird away from its home? Where was its home?
45. When did Benjamin draw a picture of his baby sister?
46. Why didn’t Benjamin know that his mother was back?
47. What did Benjamin’s mother first feel when she saw the picture he drew? What did she do?
48. Why did Benjamin’s mother worry about the picture he drew? What did she think about it?

Section C

Read the following passage and answer the *five* questions given below. (1 x 5 = 5)

The Arctic fox, also known as the white fox, polar fox, or snow fox, is a small fox native to the Arctic regions of the Northern Hemisphere and common throughout the Arctic region. It measures a little less than three feet in length. Adult foxes weigh between 2.5 and 10 kilograms, though most of them are closer to 2.5 kg. The most interesting fact is that they are brown in the summer and pure white in the winter. Its thick fur coat protects it from the freezing temperatures and snow. The arctic fox can live through these difficult conditions.

It will eat just about anything including insects, small mammals, birds, ducks, geese, eggs, snowy owl, etc., but lemmings (small rat-like animals) are the staple food of Arctic foxes. In fact, when the number of lemmings goes down every three or four years, the number of these foxes also goes down. When food is scarce, arctic foxes become scavengers. Arctic foxes will eat berries and seaweed as well. Sometimes, they are even eaten by polar bears.

The arctic vixens (female foxes) can give birth to as many as 25 kits (baby foxes) in the springtime (the largest of any carnivore). Most litters, however, contain between five and eight kits. Both male and female foxes help take care of the young.

49. Where can we see Arctic foxes?
50. How do Arctic foxes live in the cold climate?
51. What do they eat?
52. Do they have any enemies? If yes, what does their enemy do?
53. What do you mean by a litter?

Write *any one* of the following. (5)

54. Prepare a report on the recent assembly held in your college.

OR

55. Write a letter to your teacher asking leave to attend your brother's marriage.

OR

56. Prepare a poster on cruelty against animals.

Write *any one* of the following. (5)

57. Give the factual description of the given picture.

OR

58. Describe the picture using a minimum of 10 adjectives. Underline the adjectives.

BCS 1331 – MATHEMATICS I

1. AIM

To explore the Fundamental Concepts of Mathematics.

2. OBJECTIVES

Specific objectives of the course are:

(a) To give an understanding of important mathematical concepts such as Fundamental operations, Matrices, Trigonometry, Binomial theorem, permutation and combination, Limits and Derivatives, Differentiation, etc., and to introduce students to mathematical techniques which are relevant to the real world;

(b) To enhance those mathematical skills required for further studies in *Mathematics.*

3. SYLLABUS

Module I:

Matrices: Matrix definitions, special type of matrices, addition, subtraction and multiplication of matrices. Properties of addition, subtraction and multiplication, transpose of a matrix, symmetric and skew symmetric matrices, co-factors, adjoint-matrix, inverse matrix. Solution of a linear equation using matrix method. (2 x 2 Matrix only)

Module II:

Permutations and Combinations – Definition, Factorial of a positive integer; simple applications

Probability –Basic Concepts- Experiment, outcomes, sample space, events; Probability of simple events.

Module III:

Trigonometry- Introduction, trigonometric ratios, relation between the trigonometric functions, properties and solutions of triangles – the sine rule, the cosine rule, area of a triangle, compound angles and reduction formulae

Module IV:

Limits And Derivatives- Functions and Limits, Differentiation- Basics, Product rule, Quotient rule (simple derivations only), Differentiation of trigonometric functions

4. REFERENCES

4.1 Core

1. NCERT Mathematics text book for class X

2. NCERT Mathematics text book for class XI
3. NCERT Mathematics text book for class XII – PART I

4.2 Additional

1. Composite Mathematics for middle class by S.K. Gupta
2. Mathematics for class XI by H K Dass and Dr. Rama Verma
3. Mathematics for class XI by H K Dass and Dr. Rama Verma - Volume II
4. Mathematics for class XII by R D Sharma – Volume II
5. Technical Mathematics for Engineering Diploma Courses by Janardhanan Pillai

MODEL QUESTION PAPER
BCS 1331 MATHEMATICS

Max Time: 3 hrs Max Mark: 80

SECTION A

I Fill in the blanks (1 x 10 = 10 marks)

49. If a Matrix A has m rows and n columns ,then the order of the Matrix A is _____

50. Value of tan45 =_____

51. $The\ value\ of\ \lim_{x\to 3}(\frac{3x-9}{x-3})$ is _____

52. $\frac{Adjacent\ Side}{hypotenuse}$=_____

53. 4 ! = _____

54. In a diagonal Matrix, if its diagonal elements are equal, the Matrix is said to be _____Matrix.

55. If a die is thrown once, the probability that the score is a factor of 6 is _____

56. $If\ y = logx\ ,then\ \frac{dy}{dx} =$_____

57. $5C3 =$_____.

58. $If\ y = 5\ ,then\ \frac{dy}{dx} =$_____

II Choose the correct answer (1 x 10 = 10 marks)

59. $\frac{7!}{5!} =$_____

e. 42
f. 40
g. 36
h. 38

60. In how many ways can 6 people be arranged in a row _____

e. 66
f. 72
g. 660

h. 720

61. $If\ cosx = \frac{4}{5}\ ,x\ being\ an\ acute\ angle\ ,find\ the\ value\ of\ tanx\ .$

a. $\frac{3}{4}$

b. $\frac{4}{3}$

c. $\frac{4}{5}$

d. $\frac{5}{4}$

62. $1 + Cot^2x = $ _____

a. Cos^2x

b. Sin^2x

c. $Cosec^2x$

d. Tan^2x

63. Transpose of a column matrix is _____

a. Zero matrix

b. Diagonal matrix

c. Column matrix

d. Row matrix

64. When you multiply a matrix by the identity matrix , you obtain the

a. Inverse matrix

b. Adjoint matrix

c. Transpose matrix

d. Original matrix

65. If the order of A is mXn and B is nXp then the order of product AB is _____

a. mXn

b. nXp

c. nXn

d. mXp

66. If a matrix is symmetric then

a. A = A^T

b. $A = |A|$

c. $A = [A]$

d. A= adj. A

67. Which one of the following is an Identity matrix?

a. $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

b. $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

c. $\begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix}$

d. $\begin{bmatrix} 0 & 1 & 1 \\ 1 & 0 & 1 \end{bmatrix}$

68. $Cos^2A + Sin^2A =$ _____

a. 1

b. –2

c. 0

d. 2

SECTION B

III Answer any 10 questions (10 x 2 = 20 marks)

69. $Given\ A = \begin{bmatrix} \sqrt{3} & 1 & -1 \\ 2 & 3 & 0 \end{bmatrix}\ and\ B = \begin{bmatrix} 2 & \sqrt{5} & 1 \\ -2 & 3 & \frac{1}{2} \end{bmatrix}, Find\ A + B.$

70. $Find\ AB, if\ A = \begin{bmatrix} 6 & 9 \\ 2 & 3 \end{bmatrix}\ and\ B = \begin{bmatrix} 2 & 6 & 0 \\ 7 & 9 & 8 \end{bmatrix}$

71. $Let\ A = \begin{bmatrix} 2 & 4 \\ 3 & 2 \end{bmatrix}, C = \begin{bmatrix} -2 & 5 \\ 3 & 4 \end{bmatrix}\ Find\ 3A - C.$

72. $Two\ coins\ are\ tossed\ once. Write\ the\ sample\ space.$

73. $A\ committee\ has\ 8\ female\ and\ 12\ male\ members. What\ is\ the\ probability\ of\ choosing\ a\ female as\ the\ president\ of\ this\ committee?$

74. $Give\ the\ values\ of\ Sin0\ , Sin90^0, Sin180^0, Sin270^0$

75. $Evaluate\ \lim_{x \to 2} (\frac{x^2+3x+1}{x})$

76. $If\ y = Sin^{-1}(x^2)\ , then\ find\ \frac{dy}{dx}$

77. Evaluate $\frac{14!}{8!}$

78. In how many different ways can five friends sit for a photograph of five chairs in a row?

79. $If\ \mathrm{A} = \begin{bmatrix} 1 & 3 \\ 5 & 6 \end{bmatrix}\ and\ \mathrm{B} = \begin{bmatrix} 6 & 4 \\ 5 & 2 \end{bmatrix}\ then\ Find\ (A + B)^T = A^T + B^T.$

80. Calculate A^2, if A = $\begin{bmatrix} 8 & -1 & 9 \\ 3 & 1 & 8 \\ 11 & 0 & 17 \end{bmatrix}$

81. $Prove\ that\ Sin\ A\ Cot\ A\ Sec\ A = 1$

82. Evaluate $Sin\ 60\ Cos\ 30 + Cos\ 60\ Sin\ 30.$

SECTION C

IV Answer any 5 questions (5 x 3 = 15 marks)

83. $Using\ product\ rule\ find\ the\ derivative\ of\ y = xe^x$

84. $Evaluate\ 2tan^245 + Cos^230 - Sin^260\ .$

85. $Find\ the\ number\ of\ permutations\ of\ the\ letters\ of\ the\ word\ ALLAHABAD.$

86. (i) *Show that the matrix* $A = \begin{bmatrix} 1 & -1 & 5 \\ -1 & 2 & 1 \\ 5 & 1 & 3 \end{bmatrix}$ *is a symmetric matrix.*

(II) *Show that the matrix* $B = \begin{bmatrix} 0 & 1 & -1 \\ -1 & 0 & 1 \\ 1 & -1 & 0 \end{bmatrix}$ *is a skew symmetric matrix.*

87. *If* $A = \begin{bmatrix} 8 & 0 \\ 4 & -2 \\ 3 & 6 \end{bmatrix}$ *and* $B = \begin{bmatrix} 2 & -2 \\ 4 & 2 \\ -5 & 1 \end{bmatrix}$ *, then find the matrix* X *,*

such that $2A + 3X = 5B$

88. *If* $\begin{bmatrix} x+3 & z+4 & 2y-5 \\ -6 & a-1 & c \\ b-3 & -2 & 0 \end{bmatrix} = \begin{bmatrix} 0 & 6 & 3y \\ -6 & -3 & 2 \\ 2b & -2 & 0 \end{bmatrix}$ *Find the values of* a, b, c, x, y *and* z.

89. *How many* 4 *digit numbers can be formed by using the digits* 1 *to* 9 *if repetition of digits is not allowed .*

90. *A committee of* 3 *persons is to be constituted from a group of* 2 *men and* 3 *women. In how many ways can this be done?*

SECTION D

IV Answer any 5 questions (5 x 5 = 25 marks)

91. Solve the system of equations

$2x + 5y = 1$

$3x + 2y = 7$

92. If A = $\begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$. *Show that* $A^2 - 5A + 7I = 0$. *Hence Find* A^{-1}

93. *If* $A = \begin{bmatrix} 8 & 0 \\ 4 & -2 \\ 3 & 6 \end{bmatrix}$ *and* $B = \begin{bmatrix} 2 & -2 \\ 4 & 2 \\ -5 & 1 \end{bmatrix}$ *, then find the matrix* X *,*

such that $2A + 3X = 5B$

94. *Consider the experiment of rolling a die. Let A be the event* $'$*getting a prime number*$'$*, B be the event* $'$*gettingan odd number*$'$*. Write the sets representing the events* (i) *A or B* (ii)*A and B* (iii) *A but not B* (iv) *not A.*

95. *A bag has* 3 *green ,* 2 *red ,* 5 *purple ,*10 *white and* 5 *black marbles.*

(i) *What is the probability of choosing a black ball?*

(ii) *What is the chance of picking a red or a green marble?*

(iii) *What is the probability of choosing a brown marble?*

(iv) *What is the probability of choosing a red marble?*

96. $If\ A = 45^0\ Verify$

$(i)\ Sin2A = 2SinACosA$

(ii) Cos2A = $Cos^2A - Sin^2A$

97. $If\ y = \log(2x + 3)\ , then\ find\ \frac{dy}{dx}.$

98. $find\ the\ derivative\ of\ y = \frac{x^2}{Co2x}$

1. AIM

To provide awareness about the working of a computer, its components - software and hardware and functional organization of physical components and architecture of a computer;

And also to introduce the Number Systems – Decimal Number system, Binary number system, Octal number system and Hexadecimal number system.

2. OBJECTIVES

On completion of this course, the student shall be able:

- To understand the functional units of a standard PC and its working
- To get the functional knowledge about PC hardware, operations and concepts.
- To understand the memory organization in a computer.
  To review data representation techniques
- To gain an understanding of basic concepts of digital logic -Boolean algebra, different Number Systems and Logic gates

3. SYLLABUS

MODULE I:

COMPUTER: Data, Instruction, Program; Computer characteristics: Speed, Storage, Accuracy, Diligence; Generations of Computers, Classification of computers: Micro computers or Personal Computers, notebook Computers or Laptop Computers, Palmtop, Tablet PC, Mini Computer, Mainframe Computers, Supercomputers; Elements of computer system: Hardware, Software.

MODULE II:

HARDWARE: Organization, IPO cycle; Input & Output devices, Central Processing Unit: ALU, CU and Memory; Memory Classification: Primary memory: RAM, ROM; cache ; Auxiliary Storage: Examples of secondary storage devices: Magnetic Devices- Floppy Disk, Hard Disk, Optical Devices- Compact Disk, DVD, CD-WRITER, USB drive.

PERIPHERALS : Input devices: Keyboard, Mouse, Joystick, Tracker ball, Light Pen, Touch Screen, MICR Magnetic Ink Character Recognition, Optical Readers: Optical Mark Reader OMR, Optical

Character Recognition-scanner, bar code reader; Output Devices: Visual Display Unit VDU Plotter, Printer: Dot matrix printer, Inkjet Printer, Laser Printer; Sound cards and speakers.

SOFTWARE: Definitions of System software and Application software, Difference between System software and Application Software, Examples of Application software
Programming Languages, Compiler, Interpreter, Linker, Assembler (Concept and Differences)

MODULE III:

Data Representation-
Data Representation, Concepts of number system bases – binary, decimal, octal and hexadecimal number systems and conversions between each. Binary arithmetic-binary addition, subtraction, 1s and 2s complement system, multiplication. Codes- BCD, ASCII, Floating point representation in binary

MODULE IV:

Boolean Algebra- Basic functions, AND, OR and NOT, Truth table: Combinational logic – AND and NOT, AND and OR. Laws of Boolean algebra, Other Boolean functions – NAND, NOR, XOR, XNOR, Flip Flops -SR, JK, T, D only)

4. REFERENCES

4.1. Core:

- E. Balagurusamy, Fundamentals of Computers, ISBN 10: 0070141606 / ISBN 13: 9780070141605, Published by Tata McGraw-Hill Education Pvt. Ltd., 2009
- A. Anand Kumar, Fundamentals of Digital Circuits, PHI Learning Pvt. Ltd., 2016

4.2 Additional

- PARDEEP K SINHA, Computer Fundamentals, ISBN: 8176567523
- Aditya Chaturvedi, “Fundamentals of Digital Electronics”, Khanna Book Publishing Co. (P) Ltd, New Delhi
- Agarwal–“Foundations of Analog & Digital electronic Circuits”, Elsevier
- R.P. Jain, “Modern digital electronics”, 3rd edition, 12th reprint TMH Publication, 2007
- S S Kulkarni, Digital Electronics And Logic Design, Nirali Prakashan (2014)
- V. RAJARAMAN, Fundamentals of Computers, PHI Learning, 2010

4.3 Internet

http://vfu.bg/en/e-Learning/Computer-Basics--computer_basics2.pdf
http://www.bedford.lib.nh.us/Basics.htm
http://www.gcflearnfree.org/computerbasics
http://www.asic-world.com/digital/tutorial.html
http://www.electronics-tutorials.ws/

MODEL QUESTION PAPER

BCS 1341 COMPUTER FUNDAMENTALS

Maximum Marks: 80 Duration: 3 Hrs

SECTION A

Choose the correct answer 10 x 1 = 10 marks

1. Physical part of a computer is known as_____
   a) Software
   b) Hardware
   c) Operating System
   d) System Unit
2. Who is the father of Computer?
   a) Allen Turing
   b) Charles Babbage
   c) Simur Cray
   d) Bill Gates
3. CAD stands for _____
   a) Computer algorithm for design
   b) Computer aided design
   c) Computer application in design
   d) Computer analogue design
4. Computer is free from tiresome and boredom. We call it _____
   a) Accuracy
   b) Reliability
   c) Diligence
   d) Versatility
5. _____ are the programs that run on a computer
   a) Software
   b) Hardware
   c) Scanner

d) System Unit

6. What type of device is computer keyboard?
   a) Memory
   b) Output
   c) Storage
   d) Input
7. ASCII is a _____ bit code
   a) 7
   b) 10
   c) 14
   d) 3
8. For AND gate
   a) Y=A.B
   b) Y=A+B
   c) Y=A-B
   d) Y = A/B
9. An EX-OR gate gives high state output when
   a) both inputs are low
   b) both inputs are high
   c) one input is low and other input is high
   d) None of these

10. A flip flop is capable of storing _____bit of information.
    a) Zero
    b) One
    c) Two
    d) Three

Name the following: **10 x 1 = 10 marks**

11. Name any two primary memory.
12. Name any two universal gates.
13. Name two commonly used binary codes.
14. Name two types of printers.
15. Name two Universal gates.
16. Name two Flip Flops.
17. Name two portable type of computers.
18. Name two hardware devices.
19. Name two programming languages.
20. Name two plotters

SECTION B

Answer the following in one or two sentences 10 x 1 = 10 marks

21. What is the use of a printer?
22. Which gate is called Inverter?
23. What is the use of OMR?
24. Give an example of an important system software.
25. What is a monitor?
26. Find the sum of binary 1011 and 1110
28. Find the binary value of hexadecimal F.
29. Find the 1s complement of binary 1010100.
30. What is a flip flop?
31. What is a bit?

SECTION C

Answer *any ten* of the following 10 x 2 = 20 marks

32. Write the difference between System Software and Application Software.
33. Write the difference between primary memory and secondary memory.
34. Find the 2's complement representation of 1 1 0 1 0,
35. Using Double Dabble method, convert decimal 2546 to Hexadecimal.
36. Using Double Dabble method, convert decimal 23 to Octal.
37. Draw the diagrams of AND, NOT and OR gates.
38. Convert 10001100 to Hexadecimal form.
39. Write any two features of mainframe computers and two areas of usage?
40. Draw the diagram of a JK flip flop and its truth table
41. Write De Morgan's laws of Boolean algebra
42. Explain SR flip flop with truth table.
43. Explain ASCII code.
44. Draw the symbol of EXOR gate. Write the truth table also.
45. What is EBCDIC code?

SECTION D

Answer *any five* of the following 5 x 3 = 15 marks

46. Which are Universal gates? Explain each Universal fate with diagram and truth table.
47. What is a flip flop? Explain JK flip flop with truth table and diagram.
48. Write a note on super computers.
49. Realize the Boolean expression Y = ABC + ABC using gates.
50. Draw the circuit diagram of OR gate using switches and write its truth table.

51. With neat diagram, explain the concept of T flip flops.
52. What is MICR?
53. Write the difference between printer and plotter?

SECTION E

Answer *any three* of the following 3 x 5 = 15 marks

54. a) Write a note on Primary Memory? Explain the two types of Primary Memory. (2 marks)
    b) What are Peripheral devices? Explain 2 peripheral devices? (3 marks)

55. a) Explain with a neat block diagram the working of a computer. (2 marks)
    b) Explain the characteristics of a computer? (3 marks)

56. a) Explain the difference between system software and application software.(2 marks)
    b) Explain compiler, interpreter and linker. (3 marks)

57. a) With a neat diagram explain the concept of D flip flop. (2 marks)
    b) Convert the following numbers to their equivalent decimal numbers. (3 marks)
    1) $(176)_8$ 2) $(E59C)_{16}$
58. a) Explain the different types of computers. (2 marks)
    b) Explain three types of printers (3 marks)

BCS 1342 OPERATING SYSTEM

1. AIM

To introduce students to the basic functions of an operating system and to provide basic understanding of different operating systems.

2. OBJECTIVES

Upon completion of this course, the student should be able to:

- understand the fundamental concepts of systems software
- understand different functions of operating system.
- understand popular operating systems like Windows and Linux
- Learn the Linux commands and its applications
- Explain the features of free & open source software

3. SYLLABUS

Module I:

Introduction to operating systems – What is an OS, OS functions, Characteristics of modern OS, Different operating systems; Classifications: Single User, Multi-Tasking, Time Sharing, Multi User, Booting, POST; System Programs

Module II:

WINDOWS: Basic features of GUI OS, Difference between command interface and GUI, Advantages of GUI OS, Comparison of Different OS; Operating System installation, disk partitioning, formatting, Plug and Play, Computer viruses and protection: What is a Virus, its effect; how to protect the PC, What are Firewalls.

Module III:

LINUX OPERATING SYSTEM: Features- Multitasking, Multi-user, Portability, Communication, Security; Comparison of Linux with Microsoft Windows based operating systems, Open source and free source software, Distributions of Linux. Linux Desktops, Running applications, the terminal window, shells, command line format, Help Screens and Manual pages
Linux applications – GIMP, Open Office: Writer, Calc, Impress, Draw; Linux Utilities

Module IV:

WORKING WITH LINUX: Filenames and pathnames, wildcards, the file system tree, Root, Links to files, Directories; Manipulating, listing, Access permissions (chmod), File manipulation (cp, mv, rm etc), Viewing files (more, cat, etc.), Editors: Simple use of vi, Window based editors (gEdit)

Linux commands - bc, cal, cat, cd, clear, cmp, cp,mv, date, find, ls, pwd, mkdir, more, rm, rmdir, chgrp, chmod, chown, tty, wc, who, whois, grep , cut, diff, find
Various Types of Shell Available in Linux, Multi-User Features of Linux

4. REFERENCES

4.1 Core

- K L James, Linux: learning the essentials, New Delhi PHI Learning 2012.

4.2 Additional

- Achyut S Godbole, Operating systems, McGRawhill, Third Edition
- Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, Operating System Concepts 9th edition
- Red Hat Linux Bible by Cristopher Negus, Wiley Dreamtech India
- UNIX Shell Programming by Yeswant Kanethkar, BPB

MODEL QUESTION PAPER

BCS 1342 OPERATING SYSTEM

Maximum Marks: 80 Duration: 3 Hrs

SECTION A

Choose the correct answer 10 x 1 = 10 marks

1. A directory within a directory is called .....
   a) Parent Directory b) Root Directory
   c) Sub Directory d Drive
2. Which of the following comes under File Management by OS?
   a) Renaming files b) Creating files or folders
   c) Deleting files d) All of these
3. Windows is a _____
   a) Open source software b) Programming language
   c) Hardware d) Proprietary software
4. _____ is the first thing loaded onto the computer
   a) Hardware b) MS Paint
   c) Open Office d) OS
5. The ls command is used to
   a) list directories only b) list the users
   c) list files and directories d) show current working directory

6. _____ directory has all the files required for booting LINUX on system.
   a) etc b) bin
   c) root d) boot7.
7. The mv command is used for _____ files and directories
   a) renaming b) moving
   c) both a & b d) a only
8. Which character is used to match exactly one character?
   a) ? b) *
   c) ! d) ^
9. Date and Time are available on the desktop at
   a) Taskbar b) Start Menu
   c) My Computer d) Title bar
10. Which of the following below are the functions of the shell?
   a) Multitasking b) File Management
   c) Interpret commands d) Text editor

State whether True or False **5 x 1= 5 marks**

11. Linux is highly portable.
12. cd ~ will move to the Home directory.
13. DOS is a multiuser OS.
14. In Windows, by default the files when deleted are sent to Recycle Bin.
15. DOS is a multiuser OS.

Expand the following: **5 x 1 = 5 marks**

16. CPU
17. RAM
18. POST
19. MS DOS
20. USB

Answer the following in one or two sentences **10 x 1 = 10 marks**

21. What is BIOS?
22. What are “plug-and-play” devices?
23. Name any 4 distributions of Linux OS.
24. What is a Directory?
25. What is POST?
26. What are icons?
27. What are the common mouse operations?
28. What are word processors?
29. What are the uses of sed command in Linux?
30. Which command is used to change file permissions in Linux?

31. Name any 2 attributes of a file/folder.?

SECTION C

Answer *any ten* of the following 10 x 2 = 20 marks

32. Write a note on Virus.
33. What are the differences between hardware, software and firmware?.
34. What is a GUI? Give examples.
35. Write short notes on Open source and free source software? Give at least 3 examples of FOSS.
36. What are the advantages of Linux OS? Write down the difference between Linux and Windows.
37. Describe about the wildcard characters used in Linux.
38. Write the difference between head and tail commands in Linux.
39. Write the difference between cd and mkdir commands in Linux
40. Explain the difference between cat> and touch commands in Linux.
41. What are Firewalls?
42. Write the linux command for searching the word “clothes” in a file called “Shopping”?
43. Write down the command to go to the root directory, and list the files there?
44. What is multitasking?
45. Explain DIR command with examples?

SECTION D

Answer *any five* of the following 5 x 3 = 15 marks

46. How do viruses spread? Why do we need Anti-virus?
47. What is an Operating system? Explain the major functions of Operating systems?
48. Describe the parts of a Windows desktop.
49. Differentiate between GUI & CLI. Give examples for both
50. Explain the terms:
    a. Single User, Single task OS
    b. Multiuser, Multitasking OS.
51. Describe about pipe command and grep command.
52. Explain Linux Kernel and Shell.
53. Write the Linux command to create an empty file and to enter “Welcome New Year” in this file.

SECTION E

Answer *any three* of the following 3 x 5 = 15 marks

54. a) Write a note on Linux file system. (2 marks)
b) Write a note on different types of OS? (3 marks)

55. a) Differentiate between cat>, cat and cat-n commands in Linux (2 marks)
b) Explain the features of Linux OS? (3 marks)

56. a) Write short notes on open source software and free source software. (2 marks)
b) Suppose a directory has the following files:
help1, help2, help3, help4, helpO1, helpO2, aidO1, aidO2, aidO3, back1, back2, back3
a) What is the command to list all files ending in 2?
b) What is the command to list all files starting in aid?
c) What is the command to list all "help" files with one character extension?
(3 marks)

57. a) Write the difference between RAM and ROM. (2 marks)
b) What is Booting? Explain the boot sequence of a computer. (3 marks)

58. a) Write the difference between Windows and Linux. (2 marks)
b) Write the characteristics of modern OS. (3 marks)

1. AIM

This course is intended to provide an introduction to Linux and will help the student to use the fundamental LINUX system tools and utilities.

2. OBJECTIVES

This lab work will help the students:

- in performing basic system operations such as file management, text editing
- in using common command line processes
- to understand the Linux commands

3. SYLLABUS

Unit 1-

Familiarisation of Linux environment, Linux applications – GIMP, Open office: Writer, Calc, Impress, Draw

Unit 2-

Linux commands - Directory Commands, File manipulation commands, viewing files – more, cat etc. Pipe, Grep, Sort Command, Wild cards in Linux

Unit 3-

Linux Command: - How to create and manage a text file in Linux, cat, pwd, ls, mkdir, cd, rm, rmdir, cp, who, mv, tty, sty, chmod.
Utilities: more, file, cmp, comm., diff.
Filter and Pipe: pr, head, tail, grep, egrep, frep, tr.
File access permissions in Linux

Unit 4-

vi editor, running other programs from shell, Shell script basics

4. REFERENCES:

4.1 Core

- K L James, Linux: learning the essentials, New Delhi PHI Learning 2012.

4.2 Additional

- Fundamentals & operating system by All India Saksharatha Foundation

4.3 Internet

- www.c3scripts.com/tutorials/msdos/

1. AIM

The course will prepare students to design web pages and provide fundamental knowledge of application development for the internet using HTML. This course will expose the students to the basic fundamentals of the Internet and the programming language that enables the development of Web application. The course aims to give an understanding of basic HTML which is needed to design good pages because it is the language on which Web sites on the Internet are based on.

2. OBJECTIVES

This course has an emphasis on the design and techniques for developing internet based applications, mainly focusing on web programming using HTML, and designing static web pages. On completion of this course the students will:

1. Demonstrate an understanding of the Internet and Web Protocols.
2. Be able to learn the elements of HTML and create web pages using HTML code
3. Demonstrate an understanding of Hypertext Mark-up Language (HTML) Programming concepts.
4. Have a comprehensive knowledge of the semantics and syntax of HTML
5. Understand how web pages are published and a site is hosted

3. SYLLABUS

Lab sessions for creating web pages using HTML code

Unit 1-

- Practicing basic HTML tags, text tags test styles, paragraph styles, headings, lists

Unit 2-

- Tables in HTML, Frames in HTML, Link and Anchor Tags
- Including graphics, video in web pages

Unit 3 –

- Cascading Style sheets, HTML forms and Fields
- Exercises covering basic introduction to ASP

Unit 4-

- Development of a web site involving a variety of tools practiced above

4. REFERENCES

4.1 Core

- V.K. Jain, Advanced Programming in Web Design, Cyber Tech Publications

4.2 Additional

- Joel Sklar, Web Design Principles, Vikas, 5thEdition
- The Complete Reference HTML & XHTML, Thomas A Powell, 4thEdition
- H M Deitel, P J Deitel& A B Goldberg, Internet and Worldwide web programming: How to Program, 3/e, Pearson Education

4.3 Internet References:

- http://www.w3schools.com/html/
- http://personalweb.about.com/cs/beginninghtml/a/basic_html.htm
- http://www.simegen.com/school/business/webbuilder/html101/index.html
- http://www.html.net/tutorials/html/lesson2.php
- http://www.echoecho.com/html.htm
- http://www.tizag.com/htmlT/

Semester IV

Course Code & Name		Credits	Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
			Lecture	Lab					
EHI 1411	Communicative English II	4	4	-	20	80	28	100	40
MHI 1431	Mathematics II	4	5	-	20	80	28	100	40
BCS 1441	Programming using C	4	5	-	20	80	28	100	40
BCS 1442	Programming using C Lab	3	-	6	20	80	28	100	40
BCS 1443	Digital Design Lab	3	-	6	20	80	28	100	40
BCS 1444	Mini Project	3	-	4	20	80	28	100	40
	Total:	**21**	**30 hrs.**		**120**	**480**	**-**	**600**	**-**

EHI 1411 COMMUNICATIVE ENGLISH – II

1. AIM

- To build a set of new vocabulary of at least 500 words.
- To teach some grammatical structures.
- To enhance the student's ability to read and write the English used in daily life.
- To familiarize students to write in academic, social and work related situations.

2. OBJECTIVES

On completion of this course, the student shall

- Understand the use of English in everyday life.
- Understand the use of reporting.
- Get an idea about the different usages.
- Learn the format of a typical letter.
- Comprehend and infer by reading paragraphs.
- Make use of new words and usages in writing paragraphs.

3. SYLLABUS

MODULE I:

Prose Chapter:	Day for Night in Ultapur.
Structure:	Types of sentences (interchanging); reported speech; frame questions.
Composition:	Picture description.

MODULE II:

Prose Chapter:	Mothers of the Wild.
Structure:	Use of modal auxiliaries; adverbs (Including *hardly, scarcely, rarely*, etc.); sentence patterns – SV, SVC SVO, SVA, SVDOPIO, SVIODO, ASVO, SVOA.
Composition:	Picture story.

MODULE III:

Prose Chapter:	Helen Keller Learns to Speak.
Structure:	Correlative conjunctions - not only-but also, both-and, to-too, so-that; tense – perfect & perfect continuous tense; preposition - beside, nearby, near, next, next to, between, through

MODULE IV:

Structure:	Conjunction - although, though, yet, still, since; active-passive voice - changing active to passive.
Composition:	Comprehension passages; jumbled sentences, Letter writing: formal & informal.

4. REFERENCES

4.1 Core

- Aroor, U. & Blane C. (2018). New Gul Mohar Reader 3, 8th Edition, Orient Blackswan. ISBN: 987-81-250-5631-4.

4.2 Additional

- Murphy, R. (2011). Essential Grammar in Use (2nd edition), Cambridge University Press. ISBN-13 978-81-7596-029-9.
- Lott, H. (2010). Real English Grammar – Pre-Intermediate. Marshall Cavendish Ltd. ISBN 978-81-309-0878-6.
- Murphy, R. (2007). Essential Grammar in Use (3rd edition), Cambridge University Press., ISBN 978-0-521-13393-7.
- Hewings, M. (2006). Advanced English Grammar. Cambridge University Press. ISBN 81-7596-067-1.
- Murphy, R. (2010). Murphy's English Grammar (3rd edition), Cambridge University Press., ISBN 978-0-521-61662-1.

4.3 Internet

- www.englishpage.com
- www.englishgrammar101.com
- www.ego4u.com
- www.usingenglish.com
- www.grammarbook.com
- www.learn4good.com
- · www.englishclub.com

MODEL QUESTION PAPER

EHI 1411 – Communicative English II

Pages: 3

Time: 3 hours Max Marks: 80

(*Instructions: Write all the answers in full sentences.*)

Section A

Transformation of sentences **(1 x 6 = 6)**

1. Is this the kind of dress to be worn for a party? (Change into Declarative Sentence)
2. We were not sent to this world simply to make money. (Change into Interrogative Sentence)
3. How sweet the moonlight sleeps upon the riverbank! (Change into Declarative Sentence)
4. The boy drinks coffee. (Change into Interrogative Sentence)
5. Anju watches the TV. (Change into Past perfect continuous tense)
6. Akhil is eating a banana. (change into past perfect tense)

Change the following sentences into indirect form. **(1 x 8 = 8)**

7. "I saw three snakes in the garden," he said.
8. Mom asked, "Where have you spent all your money?"
9. Anne said, "My husband likes this town."
10. Father says, "I am angry with you."
11. Malu said, "Veena can speak five languages."
12. The teacher asked, "Who all are absent today?"
13. "Did you bring your bag?" the girl said to me.
14. Father said, "I am going to wash my car."

Write down the sentence patterns of the sentences given below. **(1 x 8 = 8)**

15. Anju's parents went to the temple.
16. Sarath made a statue skillfully.
17. It was a pleasant day.
18. Jithin gave his cousin some old books.
19. My friend offered me a new job.
20. Yesterday, we went to the beach.
21. You will realize the truth one day.
22. She will come.

Fill in the blanks with suitable words. **(1 x 5 = 5)**

23. My grandmother is eighty-five, but she ..... still read and write without glasses.
24. ..... I come with you?
25. ..... you help me with the housework, please?

26. Mother sat ……. her all night.
27. I was sitting ……. two girls.

Combine the sentences **(1 x 8 = 8)**

28. He can make people laugh. He can make people cry. (Combine the sentences using 'Not only/ but also')
29. I sent him many letters. I also tried to telephone him. (Combine the sentences using 'Not only/ but also').
30. Latha goes to town on Sunday. She wants to watch a film there. (Combine the sentences using 'So that')
31. John goes to bed early. He wants to get up early. (Combine the sentences using 'So that')
32. Syan is intelligent. He is handsome. (Combine the sentences using 'both-and')
33. He is very old. He can't work. (Combine the sentences using 'too..to')
34. The old man was very tired. Yet he completed the work. (Combine the sentences using 'although')
35. Ram is not educated. He has great practical wisdom. (Combine the sentences using 'though')

Change the following sentences from active to passive voice. **(1 x 7 = 7)**

36. The boy asked a difficult question.
37. Megha was writing a poem.
38. My brother sells newspapers.
39. Sheena will do the work.
40. Harry has eaten dinner.
41. John will clean the room every Saturday.
42. The car had hit the man.

Section B

Answer *any ten* of the following. **(2 x 10 = 20)**

43. What does the word 'roo' mean?
44. What are marsupials?
45. How does an opossum mother protect her children?
46. How does a polar bear protect her babies?
47. Why was Helen angry at times that she kicked and screamed until she was tired?
48. How did Helen learn quickly?
49. What is the name of the book which was written by Helen Keller?
50. "They called it a 'ghost town'''. Where is the ghost town? Why did they call it so?
51. Did the people of Ultapur follow the new law gladly? Why?
52. Why did the ministers of Ultpur change the new law?
53. Why did Sullivan give Helen slips od cardboard?
54. How does a mother lion teach her cubs?

Section C

Read the following passage and answer the *four* questions that follow.

It was raining all night. The roads were muddy and wet. Raju the farmer was riding his cart to the market. Suddenly, the wheels of the horse cart could not move. It sank in the mud.

Raju climbed down from his seat and stood beside his cart. He searched all around but could not find anyone to help him. He did not try to lift the wheel. Looking up at the sky, he started shouting at God, "I am so unlucky! Why has this happened to me? Oh God, come down to help me."

After a long wait, God finally appeared before Raju. He asked Raju, "Do you think you can move the cart by simply looking at it and crying? Nobody will help you. You must help yourself. Lift the wheel of the cart from the mud yourself."

Raju was ashamed of himself. He tried to lift the wheel. In no time the wheel was out of the mud. Raju learned his lesson. He thanked God and carried on his journey happily.

55. Why were the roads wet and muddy? What happened to the horse cart? **(2)**
56. Was Raju a lazy man in the beginning? Why do you think so? **(2)**
57. What did God ask Raju to do? What did Raju do finally? **(2)**
58. Write sentences using the following words. **(2)**
    a. muddy b. lazy

59. Write a letter to your friend inviting him/her for your sister's marriage. **(5)**

60. Look at the picture and write a short paragraph describing it. **(5)**

BCS 1431 MATHEMATICS II

1. AIM

To introduce mathematical concepts.

2. OBJECTIVES:

Specific objectives of the course are:

(a) to give an understanding of important mathematical ideas such as Fundamental operations, Sets , Integration, Differentiation, Trigonometry , Graphs, Functions and Limits, Analytical Geometry , Statistics etc, and to introduce students to mathematical techniques which are relevant to the real world;

(b) to enhance those mathematical skills required for further studies in *mathematics.*

3. SYLLABUS:

Module I:

SET THEORY- Set theory concepts, set operations, Venn diagram, fuzzy sets- Basic concepts of fuzzy set theory.

Module II:

Indefinite Integrals and Method of integration – Basics only

Module III:

ANALYTIC GEOMETRY: Co-ordinates: Rectangular Cartesian Co-ordinates, Distance formulae, Section formulae, Centroid of a triangle, area of a triangle with given vertices. The straight line – Equation of the Horizontal and vertical lines, slope intercept form.

Module 4:

Statistics: An Introduction

Data handling: Introduction, Array, range, frequency distribution table, Bar diagram and pie diagram, interpreting graphical representations. Mean median and mode of ungrouped data. Mean of grouped frequency distribution.

4. REFERENCES

4.1 Core

1. NCERT Mathematics text book for class X
2. NCERT Mathematics text book for class XI
3. NCERT Mathematics text book for class XII – PART I

4.2 Additional

1. Composite Mathematics for middle class by S.K. Gupta
2. Mathematics for class XI by H K Dass and Dr. Rama Verma
3. Mathematics for class XI by H K Dass and Dr. Rama Verma - Volume II
4. Mathematics for class XII by R D Sharma – Volume II
5. Technical Mathematics for Engineering Diploma Courses by Janardhanan Pillai

MODEL QUESTION PAPER

BCS 1431 MATHEMATICS II

Max Marks: 80 Max Time: 3 hrs

SECTION A

I Fill in the blanks (1 x 10 = 10 marks)

1. The symbol Q indicates set of all _____

2. If A= { 1, 2} , then n[P(A)]=_____

3. $\int 2x^3\, dx$ is _____

4. By De Morgan's law , $(A \cup B)^c$=_____

5. A set with 4 elements has _____ subsets.

6. A set with no element is called _____

7. Equation of X- axis is _____

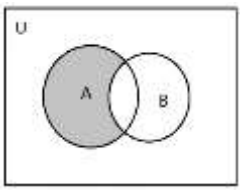
8. Midpoint of (0,1) and (1,0) is _____

9. Y=3 is a line parallel to _____ axis.

10. $A \cap A^c$ =_____

II Choose the correct answer (1 x 10 = 10 marks)

11. The shaded region in the following Venn Diagram represents _____



a A - B

b A ∩ B

c A∪B

d A

12. Commutative Law: A∪B= _____

a A

b B∪A

c B

d U

13. The marks obtained by 17 students in a mathematics test (out of 100) are given below :

91, 82, 100, 100, 96, 65, 82, 76, 79, 90, 46, 64, 72, 68, 66, 48, 49.

The range of the data is:

a 46

b 54

c 90

d 100

14. The median of the data 78, 56, 22, 34, 45, 54, 39, 68, 54, 84 is

a 45

b 49.5

c 54

d 56

15. The equation of the line through (1,-2) and parallel to X – axis is

a y=1

b x=-2

c y=-2

d x=1

16. If X={5,6,7,8} ,Y = {1,2,3,4} ,Z={9,10,11,12} which of the following is true ?

a $5 \in Y$

b $6 \in X$

c $4 \notin Y$

d $10 \notin Z$

17. Which of the following is a singleton set?

a {1,2}

b {0,1}

c (1)

d {1}

18. If two lines are perpendicular, then m1m2 = _____

a 0
b 1
c –1
d 2

19. Which of the following is not true?

a a ∈ {a, b}
b a ∈ {{a}}
c a ∈ {a}
d a ⊆ {a}

20. The x-intercept of the line 2y = 2x + 1

a 1
b –2
c –1
d 2

SECTION B

III Answer any 10 questions (10 x 2 = 20 marks)

21. Let A = { 2,4,6,8} and B ={ 6,8,10,12} Find A∪ B and A ∩ B

22. Write each of the following sets in Roster (tabular) Form

(i) Set of even natural numbers less than 25.

(ii) Set of letters used in the word 'MASSACHUSETTS'.

23. Write the set containing:

(i) First six counting numbers
(ii) First four vowels of English alphabets.

24. Evaluate $\int (sinx + Cosx)dx$

25. Evaluate $\int (x-7)(x-1)dx$

26. The blood groups of 30 students are recorded as follows: A, B, O, A, AB, O, A, O, B, A, O, B, A, AB, B, A, AB, B, A, A, O, A, AB, B, A, O, B, A, B, A
Prepare a frequency distribution table for the data.

27. Write the power set of H={a,b,c}

28. Find the distance between (-2,1) and (2,-1)

29. Write in set builder form

a. A= { 8,10,12}
b. B={1,2,3,4,5}

30. If A=(4,3) and B=(-3,-2) , Find AB and also find the slope of AB.

31. Evaluate $\int Sin4x\, Sin8xdx$

32. Out of 300 students,160 students speak English and 170 students speak Malayalam. How many students speak both English and Malayalam?

33. Find the equation of the line through (2,-1) and (3,-2).

34. Evaluate $\int \frac{dx}{x^2-16}$

SECTION C

IV Answer any 5 questions (5 x 3 = 15 marks)

35. Let A= { 1,2,3,4,5,6 } , B= {2,4,6,8}, C={ 1,4,6,8,9,11}, D={1,2,3}

Find:

(i) A- B

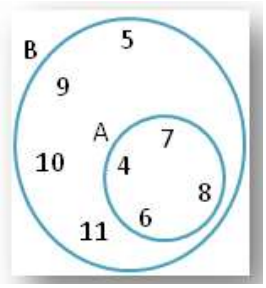
(ii) (A ∩ C) ∪ (B ∩ D)

(iii) (B ∪ D) ∩ (C ∪ A)

36. From the given Venn diagram, find the following sets:

Find

(i) B (ii) A ∪ B (iii) A ∩ B



37. Evaluate $\int x(x-2)(x+2)dx$

38. Evaluate $\int xcosxdx$

39. Evaluate $\int tanxdx$

40. Show that the points (2,-1),(5,3),(-4,-9) are collinear.

41. Find the point of intersection of the lines y=7x + 3 and y=3-x.

42. A bag contains 16 candy of the following colours. Record your data in a Bar graph.
Red, Green, Green, Green, Blue, Blue, Red, Blue, Green, Green, Red, Red, Blue, Green, Red, Red.

SECTION D

V Answer any 5 questions (5 x 5 = 25 marks)

43. Let A = set of natural numbers less than 8, B = {even natural numbers less than 12}, C = {Multiples of 3 between 5 and 15} and D = {Multiples of 4 greater than 6 and less than 20}

Find:

(i) (A ∩ C) ∪ (B ∩ D)

(ii) (B ∪ D) ∩ (C ∪ A)

44. Let M= {Natural numbers between 10 and 40; each divisible by 3}, N = {Natural numbers up to 40; each divisible by 4}.

(i) Write each in roster form.

(ii) Draw a Venn-diagram showing the relationship between sets M and set N.

45. Show that the points (2, 6), (5, 1), (0, –2) and (–3, 3) are the vertices of a square.

46. Find the area of a triangle whose vertices are (1,-1),(-4,6) and (-3,-5).

47. Find the centroid of the triangle with vertices A(6,2), B(1,-2),C(14,15).

48. The following observations are arranged in ascending order :

26, 29, 42, 53, x, x + 2, 70, 75, 82, 93 If the median is 65, find the value of x.

49. Consider the following distribution of daily wages of 50 workers of a factory.

Daily wages:	500 -520	520 – 540	540 – 560	560 – 580	580 – 600
Number of workers:	12	14	8	6	10

Find the mean daily wages of the workers of the factory.

50. Evaluate $\int Sin3x(x-2)dx$

BCS 1441 PROGRAMMING USING C

1. AIM

To expose students to the basics of programming and programming language and impart moderate skills in programming in an industry-standard programming language.

2. OBJECTIVES

The main objectives of this course is to

- provide the students an introduction to computer programming
- impart an understanding of the basic concepts of computing
- provide knowledge about the methodology of problem solving
- introduce students to the basic components and structure of C program and to develop programming skills.

3. SYLLABUS

MODULE I:

Introduction to programming: Machine Language, Assembly Language, High Level Language, Need for computer languages; Simple Algorithms & Flow charts, tracing flow charts

Program Writing in C – Structure of the Program, top-down design, Source code, Object code, Executable file, extensions of different files, Sample Programs written in C; VARIABLES AND CONSTANTS; Rules for naming the Variables/Identifiers; Identifiers and keywords

MODULE II:

Basic Elements: BASIC DATA TYPES IN C - int, char, float, double; Declarations;

Operators and Expressions: Assignment Operator, Arithmetic Operators and Arithmetic exp., Relational Operators and Relational exp., Logical Operators, Expression Evaluation (Precedence of Operators); Conditional operators

INPUT-OUTPUT: Simple I/O statements - scanf, printf, gets, puts, getchar, putchar,

Control structures, if, if else, switch-case, for, while, do-while, goto, break, continue.

Strings: Defining and operations

ARRAYS - One dimensional array, declaration, initialization and processing; Array of strings

Two dimensional arrays- Matrix operations

MODULE III:

Library Functions and User defined functions:

Different Library functions – Math functions, character functions, string functions, IO functions – their use;

Pre-processor statements - #include, #define

User defined functions, declaration, definition & scope

Passing arguments - call by value and call by reference, returning function results, functions with no return.
Storage types: Automatic, external, register and static variables, Scope of function variables

MODULE IV:
POINTERS & STRUCTURES:
Pointers - The & and * Operators, pointer declaration, Operations on pointers, Pointer Arithmetic
STRUCTURES - Defining structures, assigning values to structure variables; initializing structures

4. REFERENCES

4.1 Core

- Ashok N. Kamthene, Programming in C, Pearson Education, Second edition

4.2 Additional

- E.Balaguruswamy, Programming in ANSI C 6th Edition McGraw-Hill
- Ashok N. Kamthene, Programming in C, Pearson Education, Second edition
- V Rajaraman, Computer Programming in C, PHI.
- Problem Solving and Program Design in C, 4th edition, by Jeri R. Hanley and Elli B. Koffman.

4.3 Internet References

- http://www.cprogramming.com
- http://www.programmingsimplified.com/c-program-examples

MODEL QUESTION PAPER

BCS 1441: PROGRAMMING IN C

Time: 3 Hours Max. Marks: 80

SECTION A

Choose the correct answer. (10 marks)

1. Which is the ternary operator?
i) ? : ii)? = iii) && iv) ? ;

2. Which of the following is a software application?
i) Cobol ii) Printer iii) Networks iv) Internet Explorer

3. C is a _____

i) GUI ii) Top down programming language

iii) Application Software iv) None of the above

4. C displays float variables to

i) 10 decimal places ii) 8 decimal places

iii) 4 decimal places iv) 6 decimal places

5. The _____ box is used to show the start of a flowchart.

i) Rectangle ii) Oval

iii) Parallelogram iv) Diamond

6. The keyword used to define integer is

i) integer ii) int iii) number iv) float

7. Which of the following gives the address of a variable 'count'?

i) .count ii) ->count iii) *count iv) &count

8. A function can return

i) 1 value ii) 2 values iii) 3 values iv) any number of values

9. An area of storage that can store a single value is a

i) Function ii) Variable iii) Compiler iv) None of the above

10. Which is the pre decrement operator?

i) m++ ii) ++m iii) m- - iv). - -m

State whether the following statements are True or False. **(5 marks)**

11. Programming language is an example of software application.
12. A group of more than one variable of the same data type is called an array.
13. The float data type cannot hold fractional part.
14. The function islower () converts to lower case letter.
15. For an array in C indexing starts at 0.

Fill in the blanks **(5 marks)**

16. The operator && is an example for _____ operator.
17. Step by step way of solving a problem is called _____
18. A _____ converts the statements of a high-level programming language into machine language.
19. A _____ box is the decision box in a flow chart.
20. _____ header file is used for including the function isalpha( ) in a C program

SECTION B

Write declaration statements for the following. (5 marks)

21. temp = y
22. X = 25600999876
23. gender = female
24. price = 40.04
25. _num _loop= 26

Answer the following questions. (1 x 5 =5 marks)

26) What is a variable?
27) What is syntax?
28) Name any 4 keywords in C.
29) What is the use of a compiler?
30) What is operating system?

SECTION C

Write syntax for the following: (2 x 5 = 10 Marks)

31) If . . . else condition
32) Do . . while loop
33) Two dimensional array.
34) Structure
35) Switch statement

Answer any five questions. (2 x 5 = 10 marks)

36) Explain the basic data types in C.
37) List the important relational operators in C.
38) Write an algorithm to find the area of a rectangle
39) Which are the different input and output functions in C?
40) What are post increment and pre increment operators?
41) What is a flowchart? Explain the different symbols used in flow charts.
42) What is an array? How would you declare an array to store the height of 15 persons?

SECTION D

What would be the output of the following programs? (3 x 5 =15 marks)

43.
```
#include<stdio.h>
    main()
    {
    int a, b, c;
    a=2;
    b=7;
    c = (a>b) ? a : b;
    printf ("%d ", c);   }
```

44. # include <stdio. h>

```
main()
{       int i;
        char str1 [15], str2 [15];
        str1 = “KERALA”;
        str2 = “KERALA”;
        i = strcmp (str1, str2);
        printf (“i = %d”, i);
}
```

45. # include <stdio. h>

```
main()
{       char a[50];
        a = “GOOD MORNING”;
        printf(“% d’’, a[5]);
}
```

SECTION E

Answer any THREE questions **(3 x 5 = 15 marks)**

46. Write a C program to find out the factorial of a given number.
47. Write a C program to display even numbers up to a limit.
48. Write a C program to add two matrices.
49. Write a C program to compare two strings.
50. Write a C program to count the number of vowels in a string.

1. AIM

To provide a practical understanding of problem solving, running programs, learning the basic components and structure of a C program, to define variables, and use operators and operands to create C expressions and statements, input and output.

2. OBJECTIVES

The main objective of this course is

- To provide a practical knowledge of computer programming.
- To learn the basic concepts of computing.
- To know the methodology of problem solving.
- To develop skills in programming using C language.

3. SYLLABUS

Unit 1 -
Programs using Basic Constructs - Simple Programs using scanf() & printf(), Arithmetic expressions, mathematical functions.

Unit 2 -
Programs using control structures: Decision Making - Conditional Statement: If-else, Switch Case, and Conditional Operator
Looping Statements – for, Nested For, While & Do-While
Number Programs

Unit 3 –
Programs using Arrays: Array based programs (1D and 2D- Matrices), String arrays

Unit 4 –
String functions, User Defined Functions
Programs using Pointers, Pointer arithmetic;
Program using structures: array of structures, program using structure containing arrays and array of structures.

4. REFERENCES

4.1 Core

- Ashok N. Kamthene, Programming in C, Pearson Education, Second edition

4.2 Additional

- E.Balaguruswamy, Programming in ANSI C 6th Edition McGraw-Hill
- Ashok N. Kamthene, Programming in C, Pearson Education, Second edition
- V Rajaraman, Computer Programming in C, PHI.
- Problem Solving and Program Design in C, 4th edition, by Jeri R. Hanley and Elli B. Koffman.

4.3 Internet References

- http://www.cprogramming.com
- http://www.programmingsimplified.com/c-program-examples

BCS 1443 DIGITAL DESIGN LAB

1. AIM

To gain hands-on knowledge in image editing, vector drawing & designing.

2. OBJECTIVES

After the completion of Units1& 2, the student should be able to:

- Analyze and manipulate the dimensions and resolution of an image.
- Create composite images
- Enhance the appearance of photos

After the completion of Units 3 & 4, the student should be able to:

- Develop scalable illustrations
- Design posters, brochures etc.

3. SYLLABUS

Unit 1-

Lab Sessions to Practice the following features on a selected IMAGE EDITING SOFTWARE

Image size alteration & Cropping an image, Making, saving & modifying selections, Drawing & Painting tools, Filling colour, Layers, Transforms, Creating & editing type

Unit 2-

Lab Sessions to Practice the following features on a selected IMAGE EDITING SOFTWARE

Retouching, Adjustment options, Blending modes, 3D editor, Filters, Automate tasks (Actions Panel), Saving and Exporting Images.

Unit 3-

Lab Sessions to Practice the following features on a selected VECTOR DRAWING SOFTWARE

Creating a new document, Drawing Basic Shapes, Drawing tools,, Fill & Stroke, Transforms, Selection Tools, Reshaping Tools, Warp Effects, Path finder, Slicing & Cutting tools, Layers, Live Paint, Symbol Tools.

Unit 4-

Lab Sessions to Practice the following features on a selected VECTOR DRAWING SOFTWARE

Type tool, Graph tool, Aligning shapes & type, Placing images, Live Tracing, Special Effects, Appearance panel, 3D Extrude & Bevel, Masking, Use Actions to Automate Repetitive Tasks, Saving & Printing

4. REFERENCES

4.1 Core

- Adobe Creative Team, Adobe Photoshop CS5 Classroom in a Book, Adobe Press
- Adobe Creative Team, Adobe Illustrator CS5 Classroom in a Book, Adobe Press

4.2 Internet References

- www.adobe.com/support/photoshop/gettingstarted/
- tv.adobe.com/show/learn-photoshop-cs5/
- www.photoshopcafe.com/tutorials/
- www.photoshopessentials.com
- www.adobe.com/support/illustrator/gettingstarted/
- tv.adobe.com/show/learn-illustrator-cs5
- www.designrfix.com/resources/illustrator-tutorials

1. AIM

- Mini project shall serve as an opportunity
    - for understanding the tool/programming language/platforms taught in the particular semester better
    - to get practical experience
    - Chance to showcase skills
    - To learn about team work, communication skills and responsibilities
- Mini project shall give an opportunity for students to prepare for the major project and also contribute to achieving some of the objectives of the major project.

2. GUIDELINES FOR MINI PROJECT

- Team size shall preferably be three. Individual projects may be permitted in exceptional cases, for valid reasons.
- The project shall be purely internal in nature.
- This project shall be built using C programming language covered in this particular semester.

The following will be the components for internal evaluation of the Mini Project:

- Presentation of the work - 10 marks
- Individual involvement & team work - 5 marks
- Timely submission & creativity - 5 marks
- Attendance - 5 marks

Semester V

Course Code & Name		Credits	Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
			Lecture	Lab					
EHI 1511	Communicative English III	4	4	-	20	80	28	100	40
BCS 1541	Data Structures	4	5	-	20	80	28	100	40
BCS 1542	Programming USING C++	4	5	-	20	80	28	100	40
BCS 1543	Programming using C++ Lab	3	-	6	20	80	28	100	40
BCS 1544	Multimedia Lab	3	-	6	20	80	28	100	40
BCS 1545	Mini Project	3	-	4	20	80	28	100	40
	Total:	**21**	**30 hrs.**		**120**	**480**	**-**	**600**	**-**

EHI 1511 COMMUNICATIVE ENGLISH III

==========

1. AIM

- To build a set of new vocabulary of at least 500 words.
- To teach some grammatical structures.
- To enhance the student's ability to read and write the English used in daily life.
- To familiarize students to write in academic, social and work related situations.

2. OBJECTIVES

On completion of this course, the student

- Understands the use of reporting.
- Gets an idea about the different usages.
- Learns the format of a typical letter.
- Comprehends and infers by reading paragraphs.
- Makes use of new words and usages in writing paragraphs.

3. SYLLABUS

MODULE I:

Structure: Expressing feelings - break down, swell with pride, dream come true; negative sentence; framing questions; sentences - simple, compound, complex.

Composition: Comprehension passage; outline story - use linkers like one day, once, then, after, next, etc.; report writing.

MODULE II:

Prose Chapter:The Unsinkable Ship.

Structure: Determiners for approximation - almost, about, nearly; concord; correlative conjunctions - either-or, neither-nor, such-that; phrasal verbs using *turn, set, take, look*; preposition - into, along, towards; sentence patterns especially SVC, S + V + to be + C.

MODULE III:

Prose Chapter:The Pied Piper

Structure: Adjectives; Active-Passive voice - passive to active; quantifiers - a lot of, lots of, plenty of, a large number of, all, enough; nouns as adjectives.

Composition: Dialogue completion with hints; sequencing of sentences /events.

MODULE IV:

Structure: Relative pronouns - use of who, whom, whose, which, that; question tag.

Composition: Road-map interpretation – e.g. Turn left, take deviation, etc.; Letter writing – purchase orders and complaints.

4. REFERENCES

4.1 Core

- Butler, P. & Shaw, R. (2018). New Gul Mohar Reader 4, 8th Edition, Orient Blackswan. ISBN: 987-81-250-5633-1.

4.2 Additional

- Murphy, R. (2011). Essential Grammar in Use (2nd edition), Cambridge University Press. ISBN-13 978-81-7596-029-9.
- Lott, H. (2010). Real English Grammar – Pre-Intermediate. Marshall Cavendish Ltd. ISBN 978-81-309-0878-6.
- Murphy, R. (2007). Essential Grammar in Use (3rd edition), Cambridge University Press., ISBN 978-0-521-13393-7.
- Hewings, M. (2006). Advanced English Grammar. Cambridge University Press., ISBN 81-7596-067-1.
- Murphy, R. (2010). Murphy's English Grammar (3rd edition), Cambridge University Press., ISBN 978-0-521-61662-1.

4.3 Internet Resources

- www.englishpage.com
- www.englishgrammar101.com
- www.ego4u.com
- www.usingenglish.com
- www.grammarbook.com
- www.learn4good.com
- www.englishclub.com

MODEL QUESTION PAPER

EHI 1511 – Communicative English III

Pages: 3

Time: 3 hours Max Marks: 80

(*Instructions: Write all the answers in full sentences.*)

Section A

Write the sentence pattern of the following sentences. (1 x 5 = 5)

1. I want to be a doctor.
2. Janaki cleans the room every day.
3. John is tall.
4. The students read the storybook.
5. The children are happy and energetic.

Frame questions to get the underlined words as answers. (1 x 5 = 5)

6. My sister is three years old.
7. Arun works in a bank.
8. My brother's name is James.
9. My father gave me this watch.
10. Yes, I collected old photos.

Change the *voice*. (1 x 5 = 5)

11. Somebody has stolen my pen.
12. We are taught grammar by Ms Sullivan.
13. People speak English all over the world.
14. He was praised by the teacher.
15. They were repairing the bridge.

Combine the following pairs of sentences using *either—or, neither—nor,* or *such—that*.
(1 x 5 = 5)

16. I don't like Stephen. I don't like Peter.
17. He did not come. He did not call.
18. He will not come here. He will not send a representative.
19. Give me freedom. Or give me death.
20. My niece is a very busy woman . She can't go shopping!

Add appropriate *question tags*. (1 x 5 = 5)

21. Manju sings a song.
22. I am sad.

23. You have met Meenu.
24. The dogs barked loudly.
25. Let's go for a movie.

Fill in the blanks with appropriate words. (1 x 5 = 5)

26. The teacher gave us ___ books to read.
27. _____ accept credit cards.
28. ____issues still need to be addressed.
29. _____my friends live abroad.
30. _____time is needed to learn a language.

Transform the sentences according to the directions given in the brackets.

(1 x 5 = 5)

31. If you buy two shirts, you get one free.(Change into Simple & Compound sentence)
32. The clown entered the circus ring and the children started clapping.(Change into Simple & Complex sentence)
33. She was too poor to educate her children.(Change into Compound & Complex sentence)
34. He got up and walked away. (Change into Simple & Complex sentence)
35. He is rich, yet he is not happy.(Change into Simple & Complex sentence)

Section B

Answer *any ten* of the following questions (10 x 2 = 20)

36. Captain Smith and his crew tried to save the passengers. Describe three things they did to save the life of the passengers.
37. Why didn't California come to help the passengers in Titanic?
38. Why did 'Titanic' look like a floating town?
39. 'In the audience was a little girl, her eyes wide and shining with excitement.' Who was the girl? Why did she open her eyes wide?
40. Describe the Pied Piper.
41. What do you mean by 'Prima Ballerina'?
42. "He grew cold with fear." Who grew cold with fear? Why did he grow cold with fear?
43. 'After the show many in the audience broke down and wept'. Which was the show? Why did the audience weep?
44. Why did Anna become the prima ballerina of the theatre company?
45. Why did the audience sit in complete silence at the end of one of Anna's performances?
46. How much money did the Mayor of Hamelin promise to give the Pied Piper?
47. 'Hamelin had a problem'. What was the problem?

Section C

Read the passage and answer the *five* questions given below.

The students gathered in the conference room for a discussion on the tour to Mysore. The teachers gave the list of the necessary things they should bring for the tour. There were 40 students in the group and 25 of them were girls. The teachers also asked whether they had any type of allergies. The teachers informed that such information could avoid problems in relation with the intake of allergic substances. The students who usually vomit during journeys were asked to take medicines before starting the journey. All of them were excited about the tour as they knew that the whole Indian cricket team were playing a test match against West Indies in Mysore. The teachers have already arranged for meeting the cricket stars at Mysore. All the students knew it. They were all thrilled to meet their favourite cricket stars at Mysore. The meeting ended and the students went to their class rooms discussing about the tour.

48. Suggest a suitable title for the passage. **(1)**
49. Why did the students get excited about the tour? **(1)**
50. What happened in the conference room? **(1)**
51. Have you gone for a tour? **(1)**
52. What is the importance of study tours? **(1)**

53. Develop a story from the outline given below. **(5)**

The cap seller – sleeps – under a – tree – with a cap on his head – basket – nearby – wakes up – caps missing – looks – above – sees – monkeys – wearing caps – cap seller throws away own cap – monkeys do – the same collects – caps – goes away.

54. Construct a dialogue between you and your father seeking permission to attend a workshop at Delhi. **(5)**

55. Write a report on the sports day held at NISH on 13th May. **(5)**

56. Write a complaint letter to the Manager of QRS, Trivandrum, requesting him /her to replace or repair the faulty mobile phone. **(5)**

BCS 1541 DATA STRUCTURES

1. AIM

To impart a thorough understanding of linear data structures such as stacks, queues and of non-linear data structures such as trees and graphs. To impart familiarity with various sorting and searching techniques

2. OBJECTIVES

After the completion of this course, the student should be able to:

- use appropriate data structures like arrays, linked list, stacks and queues to solve real world problems efficiently.
- represent and manipulate data using nonlinear data structures like trees for various applications.
- Illustrate and compare various techniques for searching and sorting.

3. SYLLABUS

MODULE I:

Introduction to Data structures: Data structures, Basic types of Data Structures
Array: Introduction, Linear Arrays, Traversing Linear Arrays, Insertion and Deletion in Linear Arrays

MODULE II:

Stack and Queue: FIFO and LIFO; Stack: Introduction, Array Representation of Stack And Implementation of Stack
Queue: Introduction, Array Representation of Queue, Implementation of Queue

MODULE III:

Linked List: Introduction, Linked lists, Types of linked list –singly linked list, doubly linked list, searching a linked list, insertion into linked list, Deletion from a linked list (Concepts only)
Graphs: Terminologies- edge, vertex, degree, Types – NULL, directed, non-directed, simple, regular, graph traversal- depth-first and breadth-first traversal of graphs
Trees: Definitions and Concepts, Representation of binary tree, Tree Traversals - In order, Pre order, Post order

MODULE IV:

Searching and Sorting Techniques: Sorting Techniques: Bubble sort, Merge sort
Searching Techniques: Sequential Searching, Binary Searching (concepts only)

4. REFERENCES

4.1 Core

- A.K.Sharma, Data Structures Using C, Pearson, Second edition, 2011

4.2 Additional

- Nair A.S., Makhalekshmi,Data Structures in C, PHI, Third edition 2011

4.3 Internet References

- https://www.geeksforgeeks.org/data-structures/
- https://www.javatpoint.com/data-structure-tutorial
- https://www.tutorialspoint.com/data_structures_algorithms/data_structures_basics.htm

MODEL QUESTION PAPER

1541: DATA STRUCTURES

Time: 3 Hours **Max. Marks: 80**

SECTION A

1. Choose the correct answer. **(1x10= 10 marks)**

1. Process of inserting an element in stack is called _____
   a) Create b) Push
   c) Evaluation d) Pop
2. A linear collection of data elements where the linear node is given by means of pointer is called
   a) Linked list b) Node list
   c) Primitive list d) None of the mentioned
3. In linked list each node contain minimum of two fields. One field is data field to store the data second field is
   a) Pointer to character b) Pointer to integer
   c) Pointer to node d) Node
4. In a stack, if a user tries to remove an element from empty stack it is called _____
   a) Underflow b) Empty collection
   c) Overflow d) Garbage Collection
5. A linear list of elements in which deletion can be done from one end (front) and insertion can take place only at the other end (rear) is known as a _____
   a) Queue b) Stack
   c) Tree d) Linked list

6. A queue is a
   a) FIFO (First In First Out) list b) LIFO (Last In First Out) list
   c) Ordered array d) Linear tree
7. A data structure in which elements can be inserted or deleted at/from both the ends but not in the middle is?
   a) Queue b) Circular queue
   c) Dequeue d) Priority queue
8. The number of edges from the root to the node is called _____ of the tree.
   a) Height b) Depth
   c) Length d) None of the mentioned
9. What is a full binary tree?
   a) Each node has exactly zero or two children
   b) Each node has exactly two children
   c) All the leaves are at the same level
   d) Each node has exactly one or two children
10. In a full binary tree if there are L leaves, then total number of nodes N are?
   a) N = 2L b) N = L + 1
   c) N = L – 1 d) N = 2L – 1

2. State whether the following statements are True or False. (1x5=5 marks)

11. Linked lists, stacks, queues and binary trees are examples of dynamic data structures
12. A stack is a linked-list that can be accessed from either end.
13. push is used to place elements on the bottom of a stack and pop is used to remove elements from the top of a stack
14. A tree is an example of a linear data structure
15. A node with no children is called a child node

3. Fill in the blanks (1x 5= 5 marks)

16. The data structure required for Breadth First Traversal on a graph is
17. Linked list is considered as an example of _____ type of memory allocation.
18. _____data structure is used for implementing recursion.
19. The number of edges from the node to the deepest leaf is called _____ of the tree.
20. In a full binary tree if number of internal nodes is I, then number of leaves L is _____

SECTION B

4. Answer the questions in one or two sentences. (1x10=10 marks)

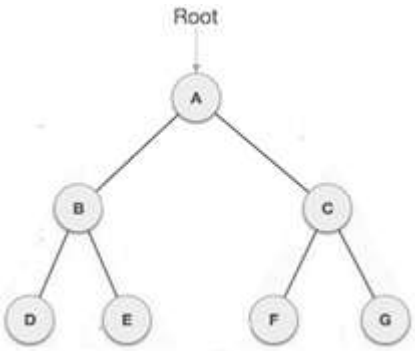
21. What is PUSH operation in a stack?
22. What is the first node of linked list called?
23. Name the linked list where the Items can be navigated forward and backward.

24. Name any two linear data structures
25. Name the data structure which is known as Last in First out list
26. What do you mean by a complete binary tree?
27. What is meant by 'Path' in a graph?
28. If the n is the number of nodes in a complete graph, what will be the number of edges?
29. What is meant by degree of a node in a graph?
30. Name the graph in which every node is connected with all other nodes

SECTION C

5. Answer ANY TEN questions **(2x10=20 marks)**

Consider the tree given below and answer the following questions (31- 40)



31. Give its pre order traversal with explanation
32. Give its in order traversal with explanation
33. Give its post order traversal with explanation
34. What is a binary tree? How many leaves does the given tree has?
35. What do you mean by depth of a tree? What is the depth of the given tree?
36. How many children and non –leaf nodes does the root have? Identify them
37. What do you mean by height of a tree? What is the height of node B?
38. What is the difference between a tree and a subtree? Draw the right subtree of the root
39. What is meant by parent and child nodes? Identify the child nodes of node C
40. What do you mean by depth of a tree? Explain with example
41. Explain any 3 types of graphs with examples
42. Explain how a linear array is represented in memory
43. What is the difference between pre order and post order traversal. Explain with example
44. How do an element is inserted in a linear array

SECTION D

6. Answer any FIVE questions. **(3 x 5= 15 marks)**

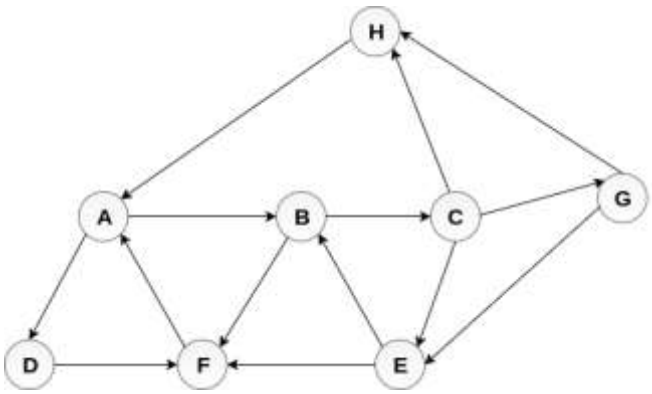
45. Explain in brief any two applications of queue.
46. Explain in brief the mechanism of bubble sort

47. How does queue work?
48. Write the difference between array and linked list
49. Define data structures. What are the various general operations performed on data structures.
50. Write the difference between stack and queue
51. What are the different types of search techniques? Explain any one
52. Write the difference between Singly linked list and doubly linked list.

SECTION E

8. Answer any THREE questions (5x3 =15 marks)

53. Explain the trace of bubble sort (in descending order) on following data. 42, 23, 74, 11, 65, 58, 94, 36, 99, 87. Show every step.
54. What is a tree data structure? What are the types of trees? How trees are represented in memory?
55. Explain the algorithm of inserting an element in a linked list
56. Consider the graph G along with its adjacency list, given in the figure below. Calculate the order to print all the nodes of the graph starting from node H, by using depth first search (DFS) algorithm.



57. Explain FIFO and LIFO operations with respect to suitable data structures

==========

1. AIM

To introduce the student to the basic concepts of object orientation and impart skills in an industry standard object oriented language.

2. OBJECTIVES

On the completion of this course the student will be able to

- Understand the concepts of classes and object
- Define classes for a given situation and instantiate objects for specific problem solving
- Reuse available classes after modifications if possible
- Possess skill in object oriented thought process

3. SYLLABUS

MODULE I:

Introduction to OOP, features of OOP, Classes and objects, Advantages of OOPs, What is C++, A simple C++ Program, More C++ statements, Structure of C++ Program.
I/O Operations - Input and output streams in C++; Basic data types and declarations. Operators in C++. Control & Decision statements-if, else-if, switch, conditional operator, Go to, break, exit, Looping & Branching

MODULE II:

Classes and Objects- Introduction, Specifying a Class, Defining member Functions, C++ Program with Class, Public and Private member functions, Static Data members, Static Member Functions, Arrays within a Class, Arrays of Objects, Objects as Function Arguments
Constructors and Destructors - Constructors, Parameterized Constructors, Multiple Constructors in a class, Copy constructor, Destructors.

MODULE III:

Functions: The main() function, Function Prototyping, definition & scope, scope of function variables; call by value and call by reference, returning function results, functions with no return.
Polymorphism – Function overloading, Operator overloading

MODULE IV:

Inheritance- Introduction, Defining Derived Classes, different types of inheritances- Single inheritance, multiple inheritance, Hierarchical inheritance, multilevel inheritance

4. REFERENCES

4.1 Core

- E.Balagurusamy, "Object oriented programming with C++", TMH Publication, 7th Edition, 2013.
- Yashavant Kanetkar, "Let Us C++", BPB Publications,2nd Edition,2017

4.2 Additional

- Herbert Schildt, "C++ - A Beginner's Guide", McGraw-Hill, 1st Edition.,2002
- Deitel HM & DJ Deitel, "C++ How to Program", Prentice Hall, 5th Edition. 2005

4.3 Internet References

- http://www.cplusplus.com/doc/tutorial
- http://www.functionx.com/cpp
- http://www.learncpp.com

MODEL QUESTION PAPER

1542: PROGRAMMING using C++

Time: 3 Hours Max. Marks: 80

SECTION A

1. Choose the correct answer. (10 marks)

1. OOP is _____
   a) Object oriented Language b)Object Only Language c)Object Object Language

2. Where does the execution of the program starts?
   a) user-defined function b) main function c) void functio
3. When will we use the function overloading?
   a) same function name but different number/type of arguments
   b) different function name but same number/type of arguments
   c) same function name and same number/type of arguments
4. What is the default return type of a function?
   a) int b) void c) float
5. In case of arguments passed by value when calling a function such as z=mult(x,y)
   a)Any change in x and y from inside the function will not have any effect outside the function

b) Any change in x and y from inside the function will modify its value outside the function

c) Both a & b are not valid

6. If class 'fir' is derived from class 'sec' and class 'third', it is _____

   a) Private Inheritance b) Multiple Inheritance c) Public Inheritance

7. All _____ members are accessible only in the class in which they are defined

   a) protected b) public c) private

8. The name of the destructor is

   a)Same as that of class b)Same as that of class with a tilt in front of it

   c) not same as class

9. If more than one method in a program has same name, it is called _____

   a) Method overloading b) Recursive function c) Function by reference

10. The keyword used to declare a friend function is _____.

    a) class b) friend c) public

2. State whether the following statements are True or False. (5 marks)

11. There can be more than one constructor in a class.
12. In a program, one class can be inherited from more than one class.
13. The destructor gets executed when an object gets destroyed
14. More than one value can be returned from a function
15. There can be many objects from a class.

3. Fill in the blanks (5 marks)

13. In C++ a function contained within a class is called _____
14. Consider the declaration- class b : public tmp; Here b is a class derived from tmp. This feature of OOP is called _____
15. The members in class are _____ by default.
16. The library function that is used for input operations in C++ is _____.
17. The _____ variables are accessible in base class and the subclasses derived from the base class

SECTION B

4. Answer the following questions in one or two sentences. (10marks)

18. What is modularity?
19. What is multiple inheritance?
20. Write the declaration statement of an object 'k' from a class 'first'
21. Is a protected member of a class is accessible in the main function?
22. Declare an object array of size 5 from class test
23. Write an example program for public inheritance?

24. Write any 2 ways through which we can achieve polymorphism?
25. Write any 2 math functions used in C++
26. Write any one of the loop statements with syntax.
27. What are the input output functions used in C++

SECTION C

5. Answer any TEN questions. (2x10=20 marks)

28. What are the features of OOP?
29. Explain Multiple Inheritance with example
30. Write the difference between private inheritance and public inheritance? Give example
31. What is constructor overloading? Give Example
32. Write the difference between C and C++?
33. What is class and what is an object? Explain with example
34. What is function overloading? Give Example
35. Write the syntax of the following
    a) Switch statement (b) If else statement (c) For statement (d) Do statement
36. How do a constructor differ from a destructor? Explain with example
37. What is the difference between argument passed by value and argument passed by reference?
38. What are the different access specifiers? Explain any two
39. Write a brief description about friend class in C++.
40. What are data types? Explain about the data types used in C++?
41. Write a short note on the input / output operations in C++

SECTION D

6. What would be the output of the following programs? (5x3=15 marks)

42.
```
#include <iostream.h>
class constr

{   private:
        int s;
    public:
        constr()
        {
        s=2;
        }
        ~constr()
        {
        cout<<"End"<<endl;
        }
        void add (int x)
```

```
                {
                s=s*x;
                cout<<s<<endl;
                }
};
void main()
{
        constr x;
        x.add(2);
}
```

43.
```
# include <iostream.h>
class small
{
        private:
                int x;
        public:
                void set (int d)
                {   x=d;    }
                void disply ()
                {   cout<<"data is"<<x<<endl;   }
}
main ()
{
        small a, b;
        a.set (2000);
        b.set (1234);
        a.disply ();
        b.disply ();
}
```

44.
```
# include <iostream.h>
class exp
{
  protected:
        int k;
   public:
        int m;

};
class drvclass : public exp
```

```
{    private :
        int x;
     public:
        void display()
        {
           k=2;
           m=5;
           cout<<k+m;
        }
};
main()
{       drvclass l;
        l.m=10;
        l.display();
}
```

45. # include <iostream.h>

```
class examp
{       public :
                examp(int x)
                {
                        cout<<x<<endl;
                }
                examp(int x)
                {
                        cout<<x*x;
                }
};
void main()
{
        examp k(5);
        examp t(4);
}
```

46 . #include<iostream.h>

```
 class derv
 {
derv()
{
        x=5;
}
```

```
void accept()
{
        v=10;
        v=v+x;
        cout<<v;
}
 };
 main()
 {
derv y;
y.accept();
}
```

SECTION E

7. Answer any THREE questions (3x5=15 marks)

47. Write a program to accept product ID, price and quantity of three products. Find the total cost of each product and display them. Use object array.
48. Using constructor overloading find the sum of two numbers and average of 3 numbers. Using destructor display the message “The End “.
49. Using function overloading find the square of a number and sum of 3 numbers.
50. Write a program to accept name, sex and age of 5 persons. Check whether they are eligible to vote. Display the name, sex age and eligibility of all persons. Use object array.
51. Write a program to accept rollno, semester and total marks of 5 students. Check whether they passed for the examination. Display the details of all students. Use object array.40% marks is required to pass the examination and the maximum marks is 600.

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1. AIM

To provide an opportunity for hands-on practice of object oriented programming and problem solving in an industry-standard programming language and also hands-on practice in various user-defined data structures.

2. OBJECTIVE

This course will provide hands-on practice on the object oriented concepts and the students will be able to write C++ programs that make use of the OOP features. The course will give practice in the following topics:

- basic data types and control structures in C++.
- managing classes and objects
- to impart the ability to design and implement programs using C++ concepts.

3. SYLLABUS

The laboratory work shall consist of programs involving the following topics:

Unit 1-

Introduction with simple programs demonstrating input and output streams in C++, Simple programs using classes, defining objects, member functions, Programs reviewing branching and looping.

Unit 2-

Programs demonstrating private and public variables and functions, Programs involving arrays – single and rectangular arrays

Unit 3-

Function Overloading, Constructors and Destructors, Programs involving object arrays,
Programs which demonstrate operator overloading

Unit 4-

Passing Object as Argument, Programs involving various kinds of inheritances-private and public

4. REFERENCES

4.1 Core

- E.Balagurusamy, “Object oriented programming with C++”, TMH Publication, 7th Edition, 2013.
- Yashavant Kanetkar, “Let Us C++”, BPB Publications,2nd Edition,2017

4.2 Additional

- Herbert Schildt, “C++ - A Beginner’s Guide”, McGraw-Hill, 1st Edition.,2002
- Deitel HM & DJ Deitel, “C++ How to Program”, Prentice Hall, 5th Edition, 2005

4.3 Internet

- http://www.cplusplus.com/doc/tutorial
- http://www.functionx.com/cpp
- http://www.learncpp.com

BCS 1544 MULTIMEDIA LAB

1. AIM

To gain hands-on knowledge in Multimedia Authoring.

2. OBJECTIVES

After the completion of this course, the student should be able to

- Create 2D graphics & animation
- Create interactive applications which combine graphics, animation, video and sound.

3. SYLLABUS

Lab Sessions to Practice the following features on a selected Multimedia Authoring Tool (Time based)

Unit 1-

Drawing, colouring & modifying images, Transforming images, Type, Frame by frame animation, Onion skinning and editing multiple frames

Unit 2-

Tweening, Libraries, Symbols and Instances, Guides, Importing & Tracing bitmaps, Difference between Movie Clip & Graphic symbols

Unit 3-

Masking & Animated masks, Applying Motion presets, Adding effects & filters

Unit 4-

Creating buttons, Adding Actions to buttons, Navigating to Frames and Scenes, Testing, exporting and Publishing.

4. REFERENCES

4.1 Core

Adobe Creative Team, Adobe Flash Professional CS5 Classroom in a Book, Adobe Press

4.2 Internet

www.adobe.com/support/flashcatalyst/gettingstarted/
www.adobe.com/devnet/flash.html
www.entheosweb.com › Free Resources
www.flashkit.com/tutorials/

1. AIM

- Mini project shall serve as an opportunity
    - for understanding the tool/programming language/platforms taught in the particular semester better
    - to get practical experience
    - Chance to showcase skills
    - To learn about team work, communication skills and responsibilities
- Mini project shall give an opportunity for students to prepare for the major project and also contribute to achieving some of the objectives of the major project.

2. GUIDELINES FOR MINI PROJECT

- Team size shall preferably be three. Individual projects may be permitted in exceptional cases, for valid reasons.
- The project shall be purely internal in nature.
- This project project shall be built using C++ programming language covered in this particular semester. This will help sharpen the programming skills in OOPs using C++.
- The students shall learn how to build menu driven programs to add, modify, view, search and delete data using file.

The following will be the components for internal evaluation of the Mini Project:

- Presentation of the work - 10 marks
- Individual involvement & team work - 5 marks
- Timely submission & creativity - 5 marks
- Attendance - 5 marks

Semester VI

Course Code & Name		Credits	Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
			Lecture	Lab					
EHI 1611	Communicative English IV	4	4	-	20	80	28	100	40
BCS 1641	Database Management System	4	5	-	20	80	28	100	40
BCS 1642	Computer Networks	4	5	-	20	80	28	100	40
BCS 1643	Programming using C# Lab	3	-	6	20	80	28	100	40
BCS 1644	Database Management System Lab	3	-	6	20	80	28	100	40
BCS 1645	Mini Project	3	-	4	20	80	28	100	40
Total:		**21**	**30 hrs.**		**120**	**480**	**-**	**600**	**-**

EHI 1611 COMMUNICATIVE ENGLISH IV

1. AIM

- To build a basic vocabulary of a minimum 500 words.
- To teach basic grammatical structures.
- To enhance the student's ability to read and write the English used in daily life.
- To familiarize students to write in academic, social and work related situations

2. OBJECTIVES

On completion of this course, the student

- Understands the use of reporting.
- Gets an idea about the different usages.
- Learns the format of a typical letter.
- Makes use of new words and usages in writing paragraphs.
- Prepares notices.
- Understands the use of phrasal verbs in sentences.
- Converts active voice into passive voice.
- Develops job application letters.

3. SYLLABUS

MODULE I:

Prose Chapter:Vesuvius Comes Alive.

Structure: Degrees of Comparison (conversion); Reported Speech; Punctuation; Warning sentences using if, don't, etc.

Composition: Paragraph writing.

MODULE II:

Prose Chapter:I am Born.

Structure: Auxiliary and modal auxiliaries - can, have, do, would, could, should, etc. - positive and negative sentences; Phrases - take off, take up, call in, call out, look for, put on, look up, see out, see off.

Composition: Notice preparation.

MODULE III:

Prose Chapter:Waiting for the Rain.

Structure: Past tense - simple and continuous; phrasal verbs using *up*; question tag.

Composition: Comprehension passage.

MODULE IV:

Structure: Active-Passive voice - passive to active; Relative pronouns - use of who, whom, whose, which, that.

Composition: Letter writing – Job application & resume/biodata.

4. REFERENCES

4.1 Core

- Butler, P. & Shaw, R. (2018). New Gul Mohar Reader 4, 8th Edition, Orient Blackswan. ISBN: 987-81-250-5633-1.

4.2 Additional References

- Murphy, R. (2011). Essential Grammar in Use (2nd edition), Cambridge University Press. ISBN-13 978-81-7596-029-9.
- Lott, H. (2010). Real English Grammar – Pre-Intermediate. Marshall Cavendish Ltd. ISBN 978-81-309-0878-6.
- Murphy, R. (2007). Essential Grammar in Use (3rd edition), Cambridge University Press. ISBN 978-0-521-13393-7.
- Hewings, M. (2006). Advanced English Grammar. Cambridge University Press. ISBN 81-7596-067-1.
- Murphy, R. (2010). Murphy's English Grammar (3rd edition), Cambridge University Press. ISBN 978-0-521-61662-1.

4.3 Internet

- www.englishpage.com
- www.englishgrammar101.com
- www.ego4u.com
- www.usingenglish.com
- www.grammarbook.com
- www.learn4good.com
- www.englishclub.com

MODEL QUESTION PAPER

EHI 1611 – Communicative English IV

Pages: 3

Time: 3 hours Max Marks: 80

(Instructions: Write all the answers in full sentences.)

Section A

Change the given sentences in direct speech to indirect speech. (5 × 1 = 5)

1. Anu 'said, "How clever Azad is!"
2. He said to Sanjay, "Leave the room now."
3. My mother said, "Which movie are you going to watch?"
4. Arya said, "I am going to clean my room."
5. My father said, "Why are you so late?"

Punctuate the following paragraph. (5 × 1 = 5)

6. my friend priya speaks german and she is teaching me some words
7. he was honest sincere hard working
8. akbar the greatest of the mughal emperors ruled wisely
9. tanya said to ila rahul is a nice guy
10. alas we lost the match

Rewrite the sentences according to the directions given in brackets. (5 × 1 = 5)

11. The lion is the most powerful among all the animals. (Change to positive and comparative)
12. Shelley is the greatest poet of his time. (Change to positive and comparative)
13. Jogging is more beneficial than any other exercise. (Change to positive and superlative)
14. Iron is more useful than any other metal. (Change to positive and superlative)
15. No other bowler on the team bowls as fast as Sandeep. (Change to comparative and superlative)

Fill in the blanks using suitable phrasal verbs (5 × 1 = 5)

16. Vrinda _____ her spectacles.
17. I went to the railway station to _____ my cousin.
18. I had to return to the store to _____ my purse.
19. She _____ new words in a dictionary.
20. They _____ our names to give prizes.

Combine the following pairs of sentences using a relative pronoun. (5 × 1 = 5)

21. The parcel reached me this morning. My brother sent it.
22. This is the house. Jack built it.

23. The boy didn't do his homework. The teacher punished him.
24. Bring me the file. The file is on the table.
25. We met a girl. The girl had lost her way.

Rewrite the following by adding Question Tags. **(5 × 1 = 5)**

26. We should leave now.
27. He can do it.
28. She hasn't read this book.
29. Veena broke the cup.
30. We like chicken.

Change the sentences in Active Voice to Passive Voice. **(5 × 1 = 5)**

31. The man was taking a picture of the forest.
32. The gardener has cleaned the garden quickly.
33. The robots will cover the box with silver paper.
34. Renuka will be taking the notebooks.
35. Brett Lee congratulated the students.

Section B

Answer *any ten* of the following questions. **(10 × 2 = 20)**

36. Why did Velu look at the sky?
37. What makes Velu happy in the end?
38. "Without the rains, there's nothing to smile about." Who was Velu speaking to? Why was there nothing to smile about?
39. Why was Ms. Betsey Trotwood angry with David Copperfield's father?
40. How do we know that David's mother was very young?
41. How was Miss Betsey Trotwood related to David Copperfield?
42. What did Miss Betsey do when the baby boy was born? Why do you think she did that?
43. How did the old man know that the volcano was going to erupt?
44. How did the people of Pompeii leave messages for each other?
45. Why did the old man stand frozen in fear?
46. What happened in Pompeii in AD 79?
47. How did Vesuvius erupt?

Section C

Read the following passage and answer the *five* questions given below. **(5 × 2 = 10)**

Long ago there was a King in Britain whose name was Lear. He was over eighty years of age. So, old and worn with cares of his kingdom, he decided that the time had come to give up the crown and spend his last years in peace. But Lear only had three daughters to succeed him; the eldest was named Goneril, wife of the Duke of Albany; the second was named Regan who was married to the

Duke of Cornwall and the youngest and most beautiful, Cordelia was still unmarried. The king decided to divide his kingdom among his three daughters. He called them together and told them that he would give the largest share to the one that loved him most.

Goneril, a selfish woman pretended that she loved him more than life itself. Regan, who was selfish like her sister said that all her joy lay in finding favour with her father. Believing the words of his two selfish daughters, he gave them each a third of his kingdom. The kindhearted younger daughter

Cordelia, truly loved her father. She did not exaggerate or speak of her love except as a daughter's duty. The king became angry. He gave her nothing and divided her share of his kingdom between her two sisters.

48. Why did Lear decide to give up his kingdom?
49. Why was Lear angry with Cordelia?
50. What kind of a person was Goneril?
51. How did the king divide his kingdom?
52. Suggest a suitable title for the passage.

Write a paragraph on ***any one*** of the given topics. (5)

53. Flood

    OR

54. Mobile phone addiction

55. On the occasion of Onam, your college union has planned a flower show. As the Union Chairman of your college, write a notice inviting all the students and teachers to this flower show. (5)

56. Write a letter to the Director of NISH applying for the post of System Administrator. (5)

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BCS 1641 DATABASE MANAGEMENT SYSTEMS

1. AIM

To introduce the student the basic concepts of databases and related techniques and tools

2. OBJECTIVES

On the completion of this course the student will

- Be aware of basic concepts of databases and data base management systems
- Make aware of concepts of relational data bases
- Develop skills to write database queries
- Develop understanding of backend

3. SYLLABUS

MODULE I:

Data, Tables, Databases, Importance of data, Database Management System (DBMS), Concepts of DBMS, Different types of DBMS and Advantages of databases; RDBMS- What is RDBMS, Relational Model, Relation between tables, ORACLE as RDBMS

MODULE II:

Data Definition in SQL: Data types, creation, Insertion, viewing, updating, deletion of tables, modifying the structure of tables, renaming, and dropping of tables. Data constraints- I/O constraints- Primary key, foreign key, unique key constraints. Business rule constraints- Null, not null, check integrity constraints, Defining different constraints on table, ALTER TABLE Command. DCL – Grant, Revoke commands.

MODULE III:

Database Manipulation in SQL: Computations done on table data - Select command, Logical operators, Range searching, Pattern matching, Grouping data from tables in SQL, GROUP BY, HAVING clauses, Subquery, Joins - Joining Multiple Tables, Joining a Table to itself, creating a table from another table, Joins

MODULE IV:

Introduction – Views: Creation, Renaming the column of a view, destroying view. PL\SQL – Introduction, stored procedures, stored functions, introduction to Normalization (concept only)

4. REFERENCES

4.1 Core

- Ramon A. Mata-toledo and Pauline K. Cushman, Fundamentals of Relational Data Bases, Schaum Outlines, Tata McGraw Hill

4.2 Additional

- AtulKahate, Introduction to Data Base Management Systems, Pearson Education
- Bill Pribyl, Steven Feuerstein ,Oracle PL/SQL Programming, 6th Edition: O'Reilly Media, Inc., February 2014
- Ramon A. Mata-toledo and Pauline K. Cushman, Fundamentals of SQL Programming, Schaum Outlines, Tata McGraw Hill

4.3 Internet References

- https://www.w3schools.com/sql/
- https://www.tutorialspoint.com/dbms/
- https://www.javatpoint.com/dbms-tutorial

MODEL QUESTION PAPER

BCS 1641: DATABASE MANGEMENT SYSTEMS

Time: 3 Hours Max. Marks: 80

SECTION A

1. Choose the correct answer. (10 marks)

1. The _____ keyword in SELECT statement is used to sort the result-set by any column.
   (a)GROUP BY (b) ORDER BY (c) WHERE (d) SELECT
2. _____ is a RDBMS.
   (a)IMS (b) Oracle (c) SQL (d) IDMS
3. The INSERT INTO statement is a _____
   (a) DDL (b) DML (c) Both DDL & DML (d) None of these
4. _____ function gives the number of records in a table.
   (a) SUM (b) AV G (c) MAX (d) COUNT
5. A _____ is a join of a table to itself.
   (a) Inner join (b) equijoin (c) self join (d) outer join
6. The SQL statement that is used to delete records from a table is
   (a) Delete (b) Alter (c) Drop (d) Update

7. Each row in a table is called
   (a) Field (b) Index (c) Record (d) Column
8. The constraint that ensures that all values in a column are distinct.
   (a) NOT NULL (b) DEFAULT (c) CHECK (d) UNIQUE
9. Which of the fields can be used as a primary key?
   (a) class (b) Aadhar Number (c) GPA (d) Miner
10. In a table, the keys other than Candidate Key is called
   (a) Foreign key (b) Primary key (c) Alternate key (d) Composite key

2. State whether the following statements are True or False. (5 marks)

11. DELETE is a DML statement in SQl.
12. ALTER TABLE statement can be used to add a new column to a table..
13. Distinct is an arithmetic function in SQL.
14. Each row in a table is called a field.
15. Primary key can have null values.

3. Fill in the blanks (5 marks)

16. _____uniquely identifies each row of the table and prevents NULL values
17. _____checks whether the condition specified in the constraint is satisfied.
18. _____is an example of a DDL command used to change the table definition.
19. RTRIM is used to remove all _____at the end of the string.
20. _____statement in SQL allows to delete all rows in a table.

SECTION B

4. Answer the questions in one or two sentences. (1x10=10 marks)

21. Name any two DML operations
22. What is the use of GROUP BY
23. Name any two aggregate functions
24. Name any two database management systems
25. What is the SQL command used to change the structure of a database
26. What do you meant by tuple of a table? Give example
27. What is the use of a primary key?
28. Name any two types of JOINS
29. Write any two uses of normalisation
30. What is a candidate key?

SECTION C

5. Answer any TEN questions. (2x10=20 marks)

31. Write the difference between Drop and Delete SQL Statements.

32. What is a subquery?
33. What is foreign key?
34. Write the difference between UPDATE and INSERT INTO SQL Statements.
35. What any two common types of constraints used in ORACLE?
36. Write the difference between equijoin and non-equijoin?
37. Explain any 4 String functions used in SQL.
38. What is Referential integrity and entity integrity?
39. Differentiate between Database and DBMS?
40. Explain with an example the working of group by clause?
41. Explain SELECT Statement?
42. Write the difference between DDL and DML
43. Write the syntax of a) Update b) Insert
44. What is a view? Explain with example

SECTION D

6. Write SQL commands for the following (3x5=15 marks)

45. To make a new table named 'Lodge'. It should have the following fields:
    LodgeId
    Name
    No: of AC rooms
    No: of non-AC rooms
    Rent of AC rooms
    Rent of Non AC rooms
    Address
    Phone
    LodgeId, No: of AC rooms, No: of non-AC rooms and phone are numeric data fields.
    Name and address are string data fields of length 30.
    Rent of AC rooms and Rent of non AC rooms are floating data fields.

46. Give the following data to the table:

i)	LodgeId	=	121
	Name	=	Krishna
	No: of AC rooms	=	22
	No: of non-AC rooms	=	123
	Rent of AC rooms	=	225
	Rent of non-AC rooms	=	45.75
	Address	=	Statue, Trivandrum
	Phone	=	225567
ii)	LodgeId	=	125
	Name	=	Samsons

No: of AC rooms	=	2
No: of non-AC rooms	=	33
Rent of AC rooms	=	167.90
Rent of non-AC rooms	=	49
Address	=	Palayam, Trivandrum
Phone	=	425567

47 Change the Rent of non-AC rooms to 65 and Rent of AC rooms to 222 of Lodge 'Samsons'.

48 Change the size of the column Address to 60.

49 Drop the column- Phone

SECTION E

7. Consider the table Employee_tb and answer any FIVE questions

15 marks

Id	Name	Gender	Age	Salary	Address
1	Asoka	M	39	28,000	Kollam
2	Anitha	F	39	27,000	Ernakulam
3	Balu	M	42	31,0000	Pathanamthitta
4	Kiran	M	43	32,000	Ernakulam
5	Sabu	M	38	21,000	Pala
6	Amritha	F	40	25,000	Kozhikode
7	Heera	F	39	40,000	Kannur

Write query for the following with output

50. Find the id, name, age, salary and address whose address contains the substring starting with letter 'E' and ending with 'm'.
51. Find the number of employees whose salary is greater than the average salary
52. Find the names of employees whose name does not end with 'a'.
53. Find the name and age of employees who have age less than the average age of all employees
54. Find the name and age of employees whose age is not 38 in ascending order of name.
55. Find the average salary of all male employees
56. Find the address of all female employees whose name starts with 'A'
57. Find the details of all male employees who are from 'Ernakulam'

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1. AIM

To introduce computer networks, their structures, techniques as well as some common standards.

2. OBJECTIVES

After the completion of this course, the student should be able to:

- understand the basic transmission technologies and characteristics
- understand the use of layer architecture for networking systems
- understand the main protocols used in local networks
- identify computer and network security threats, classify the threats

3. SYLLABUS

MODULE I:

Introduction: Definition of a Computer Network; What is a Network?, Components of a computer network: Use of Computer networks; Network Components and devices - Router, Hub, Switch, Modem Repeater, NIC Network architecture - Client Server and Peer to Peer, WAN, MAN, CAN,LAN, PAN

MODULE II:

Network Topologies - Bus, Star, Mesh, Ring, Tree, Hybrid

Packet transmission, packets, segments, frames and error detection, point to point communication, Datagram and datagram forwarding, Different Protocols: UDP, TCP (definitions only)

Channels for Communication Unicasting and broadcasting, Limited Broadcasting, Directed Broadcasting (concepts only)

MODULE III:

IP Address architecture -IP address and MAC address, CLASS A, B, C, D and E Classifications -Range and area of application, Network address, Limited Broadcasting address, and Directed Broadcasting address.

Network Models: ISO 7-layer model (concept only), basic functions of each layer.

MODULE IV:

Introduction to Cyber Security - Computer Security - Threats - Harm - Vulnerabilities - Controls - Authentication - Access Control and Cryptography – Web - User Side - Browser Attacks - Web Attacks - Network security threats– concepts cryptography - encryption, ciphers, symmetric and public key encryption, digital signatures, E-mail security

4. REFERENCES

4.1 Core

- Brijendra Singh, Data Communication and Computer Networks, 3/e, PHI
- Panchaghare, V.K., Cryptography and Information Security, PHI

4.2 Additional

- Behrouz A Forouzan, Data Communication and Computer networks, 4thed,McGraw Hill
- Achyut S Godbole, Data communications and networks, McGrawHill, Second
- Tanenbaum, “computer-networks-a--4th-edition”

4.3 Internet References

- https://www.javatpoint.com/computer-network-tutorial
- https://www.tutorialspoint.com/data_communication_computer_network/
- https://www.geeksforgeeks.org/computer-network-tutorials/

MODEL QUESTION PAPER

BCS 1642: COMPUTER NETWORKS

Time: 3 Hours Max. Marks: 80

SECTION A

1. Fill in the blanks 10 marks

1. The speed of a Modem is measured in _____
2. Top most layer of OSI model is _____
3. _____is a network device that is used to regenerate the signal over the same network

4_____is an example of Gateway.

5. _____ is the card installed in motherboard to connect to network.

6. Data is transmitted character by character in _____ transmission.

7._____Is a process of encoding information in a carrier signal.

8. The _____ OSI layer that encrypts and decrypts the data.

9. The path through which information is transmitted from one place to another is called _____

10. Terminators are used in _____topology.

2. Choose the correct answer. 10 marks

11. Data communication system spreading across states, countries, or the whole world is
    a) LAN b) WAN c) MAN d) None of these

12. We use a _____ to connect a LAN to the Internet
    a) Switch b) Router c) Modem d) Modulator

13. If all devices are connected to a central hub, then topology is called
    a) STAR b) BUS c) TREEd) MESH

14. Any computer or printer or other device connected to a local area network is
    a) Server b) BUS c) NIC d) Node

15. Which of the following represents the fastest data transmission speed?
    a) Bits b) Kbps c) Mbps d) Gbps

16. An example of IP address is _____
    a) 59.177.134.72 b) 2000.100.0.200 c) 00:A0:C9 : 14:C8:35 d) All of these

17. _____ broadcasts the received data to all the nodes.
    a) HUB b) SWITCH c) NIC d) Firewall

18. Wireless transmission can be done using
    a) cables b) optical fibers c) infrared d) All of these

19. A computer network permits sharing of
    a) Resources b) Information c) Both a & b d) None of these

20. Class B networks are used in
    a) Small organizations b) Military c) IRCTC d) NASA

SECTION B

3. Answer in one or two sentences 1 x 10 = 10 marks

21. Arrange the given networks in their increasing order of size (smallest to biggest)
    PAN, WAN, MAN, LAN, WLAN

22. What is Authentication?

23. What is the decimal dot notation?

24. What is the need for a computer network?

25. How do we identify a computer in a network?

26. Name the two major types of network architecture?
27. What do you mean by MAC Address?
28. Write any two applications of class A and B networks?
29. What do you mean by digital signature?
30. What is meant by a Protocol?

SECTION C

5. Answer any TEN from the following **2 x 10 = 20 marks**

31. What is a Modem? What is its use? How does it work?
32. Write briefly about ANY TWO of the following networking devices:
    i) Repeater ii) HUB iii) Firewall iv) Gateway
33. What is a Packet? Explain about the structure of a packet
34. How do a MAC Address differ from an IP Address?
35. Give the difference between LAN, WLAN and WAN.
36. Define Encryption?
37. Write the different ways by which we can ensure the computer security?
38. Define a) Synchronous communication b) Modulation
39. Write the expansions of a) SMTP b) NIC c) POP d) FTP
40. What are the uses of networks? Explain any 4 uses.
41. What is a router? Explain its use with a diagram
42. What are the basic components required for a computer network? Explain
43. Write any 3 differences between peer to peer architecture and client server architecture?
44. What do you mean by segments and frames in OSI layer architecture? How can you differentiate the two

SECTION D

5. Answer any FIVE questions. **(3 x 5= 15 marks)**

45. Explain the concept of private key and public key with suitable diagram
46. Identify the Network Id and Directed broad band addresses for the following
    Host ID a) 2.4.5.6 b) 193.2.4.7 c) 130.44.56.9
47. Explain briefly about a) Router b) Switch c) NIC
48. Differentiate Passive and Active attacks with examples
49. Explain the components of Encryption algorithm?
50. Explain briefly about packet transmission
51. Write the differences between Limited Broad casting and Directed Broadcasting
52. How do BUS topology differ from Star topology?

SECTION E

6. Answer any THREE from the following 5 x 3 = 15 marks

53. Explain the network architectures- client server and P2P with neat diagrams

54. With the help of a diagram, name the different layers of the ISO-OSI Model. Explain about each layer.

55. Explain IP address architecture? Explain each class with their areas of applications.

56. What are the different network topologies? Write the any 2 advantages and disadvantages of any 4 topologies. Explain with suitable diagrams

57. Explain the process of encryption with a neat diagram? Explain Symmetric and public key encryption?

BCS 1643 PROGRAMMING USING C# LAB

1. AIM

This course will provide an opportunity to learn C# and object-oriented programming in .NET framework by syntax teaching, programming, debugging and object-oriented programming design.

2. OBJECTIVES

Goals for students in this course are

- Understanding C# language and object-oriented concepts
- Creating Windows-based applications: Forms and Controls
- Using ADO.NET to access and manipulate database data

3. SYLLABUS

Unit 1 –
INTRODUCTION - Creating Console Application, classes and methods, IO programs, decision making and looping statements

Unit 2 –
Programs using:
Command line argument, maths function, strings & string functions
Methods in C#: declaring methods, invoking methods, pass by value, pass by reference, the output parameters, method overloading.
Arrays: 1-D array, creating an array, 2-D array, variable size arrays (Jagged arrays)
Object Array, Constructors, Inheritance
C# Static methods

Unit 3 –
Programs to familiarise GUI - WINDOWS APPLICATIONS: Windows Forms and Controls: common controls and events.

Unit 4 –
ADO.NET: Creating Connections, Data Commands & the Data Reader, the Data Adapter, the Dataset, the Data Table, the Data View, Editing & Updating Data.

4. REFERENCES

4.1. Core

- Test Your C# . net Skills: YashavantKanetkar, AsangDani
- Professional C#: Christian Nagel, Bill Evjen, Jay Glynn

4.2. Additional

- Programming C# 4.0 6ed : Griffiths
- C#.net web developer's guide – Adrian Turtschi, Dot Thatcom,Jasonwerry,GregHack,JosephAlbahari,SaurabhNandu,Weimeng Lee
- C# Programming: Tim Anderson

4.3. Internet

- www.csharp-station.com/Tutorial
- www.homeandlearn.co.uk/csharp/csharp.html
- www.referencedesigner.com/tutorials/csharp/csharp_1.php
- http://www.c-sharpcorner.com/Beginners/
- http://www.csharptuts.net/ado-net-tutorial-for-beginners/

BCS 1644 DATABASE MANAGEMENT SYSTEM LAB

1. AIM

This course will provide an opportunity for hands-on practice in the following topics, with a focus on writing and analysing SQL statements:

- Database design and implementation
- Writing and analysing SQL statements
- Creating user interface and study the working of a data base in a front end application

2. OBJECTIVES

This course will provide hands-on practice in writing different SQL statements and analysing them using any RDBMS tool. Practical situation which uses database is introduced in different exercises. The focus is also given in the working of a database in a front end application.

3. SYLLABUS

Experiments will cover creating tables including defining relations between them, practising SQL using any modern database management system like MS SQL Server, ORACLE and MySQL.

Unit 1-
SQL statements for creating, listing, dropping, updating tables;
Record manipulation using-insert, delete, and update

Unit 2-
Experiments that clarify the use of constraints- (a) Primary Key, (b) Foreign Key
(c) Unique, (d) Not Null
SELECT statements with Logical operators and Connectors
SQL Commands – Sort data with order by and distinct, Aggregate Data Using the Group Functions
SQL statement with Functions (i) String (ii) Number (iii) Date

Unit 3-
Statements using Subquery, Display Data from Multiple Tables Using Joins
Creating a table from another table.
Views, Stored procedures, stored functions

Unit 4-
Accessing database with Front End tool, Creating Data Reports

4. REFERENCES

4.1 Core

- Raghu Ramakrishnan, Johannes Gehrke, Database Management Systems
- Alex Leon, Mathews Leon, SQL- A complete reference, McGraw-Hill

b. Additional

- Sumathi-Esakkirajan, Fundamentals of RDBMS, Springer Pvt. Ltd.

c. Internet

- http://www.help2engg.com/dbms/dbms-introduction
- http://www.roseindia.net/databases/
- http://www.w3schools.com/sql/default.asp

1. AIM

- Mini project shall serve as an opportunity
  - for understanding the tool/programming language/platforms taught in the particular semester better
  - to get practical experience
  - Chance to showcase skills
  - To learn about team work, communication skills and responsibilities
- Mini project will give an opportunity for students to prepare for the major project and also contribute to achieving some of the objectives of the major project.

2. GUIDELINES FOR MINI PROJECT

- Team size shall preferably be three. Individual projects may be permitted in exceptional cases, for valid reasons.
- The project shall be purely internal in nature.
- The project shall be made using Visual Studio.NET for Windows using C#.Net and any backend tool taught in this particular semester.

The following will be the components for internal evaluation of the Mini Project:

- Presentation of the work - 10 marks
- Individual involvement & team work - 5 marks
- Timely submission & creativity - 5 marks
- Attendance - 5 marks

Semester VII

Course Code & Name		Credits	Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
			Lecture	Lab					
EHI 1711	Communicative English V	4	4	-	20	80	28	100	40
BCS 1741	Software Engineering	4	4	1	20	80	28	100	40
BCS 1742	Programming using Java	4	5	-	20	80	28	100	40
BCS 1743	ASP.Net Programming Lab	3	-	6	20	80	28	100	40
BCS 1744	Programming using Java Lab	3	-	6	20	80	28	100	40
BCS 1745	Mini Project	3	-	4	20	80	28	100	40
	Total:	**21**	**30 hrs.**		**120**	**480**	**-**	**600**	**-**

EHI 1711 COMMUNICATIVE ENGLISH V

1. AIM:

- To build a basic vocabulary of a minimum 500 words.
- To teach basic grammatical structures.
- To enhance the student's ability to read and write the English used in daily life.
- To familiarize students to write in academic, social and work related situations

2. OBJECTIVES:

On completion of this course, the student

- Understands the use of reporting.
- Gets an idea about the different usages.
- Learns the format of a typical letter.
- Comprehends and infers by reading paragraphs.
- Writes dialogues in different situations.
- Uses gerunds and infinitives appropriately.
- Writes short travel reports.
- Composes Email and SMS.
- Writes letters related to trade enquiries.

3. SYLLABUS

MODULE I

Prose Chapter:	The Bermuda Triangle.
Structure:	Phrasal verbs from the story; gerunds and infinitives.
Composition:	Report Writing – Travel reports (with hints).

MODULE II

Prose Chapter:	The Throne of Justice.
Structure:	Adverbs of frequency; phrasal verbs from the story; use linkers from the text.
Composition:	Dialogue construction.

MODULE III

Prose Chapter:	The River of Hope.
Structure:	Future simple, present prefect & prefect continuous tense.
Composition:	Letter Writing – Trade enquiries regarding availability.

MODULE IV:

Composition:	Composing SMS and emails; constructing dialogues - enquiries - at a bank, railway station, hospital, etc.; comprehension passage.

4. REFERENCES

4.1 Core

- Devidas, K. N. (2018). New Gul Mohar Reader 5, 8th Edition, Orient Blackswan. ISBN: 987-81-250-5634-8.

4.2 Additional

- Murphy, R. (2011). Essential Grammar in Use (2nd edition), Cambridge University Press. ISBN-13 978-81-7596-029-9.
- Lott, H. (2010). Real English Grammar – Pre-Intermediate. Marshall Cavendish Ltd. ISBN 978-81-309-0878-6.
- Murphy, R. (2007). Essential Grammar in Use (3rd edition), Cambridge University Press., ISBN 978-0-521-13393-7.
- Hewings, M. (2006). Advanced English Grammar. Cambridge University Press., ISBN 81-7596-067-1.
- Murphy, R. (2010). Murphy's English Grammar (3rd edition), Cambridge University Press., ISBN 978-0-521-61662-1.

4.3 Internet

- www.englishpage.com
- www.englishgrammar101.com
- www.ego4u.com
- www.usingenglish.com
- www.grammarbook.com
- www.learn4good.com
- www.englishclub.com

MODEL QUESTION PAPER

EHI 1711 – Communicative English V

Pages: 3

Time: 3 hours Max Marks: 80

(*Instructions: Write all the answers in full sentences.*)

Section A

Choose gerund or infinitive form of the given verbs to complete the sentences. **(10 x 1 = 10)**

(eat, come, watch, ride, smoke, meet, talk, go, cancel, drink)

1. Alicia enjoys _____ movies on television.
2. Drivers must avoid _____ on mobile phones while driving.
3. Do you feel like _____ a hamburger?
4. My father gave up _____ a year ago.
5. They decided _____ the meeting.
6. You should avoid _____ soft drinks as much as you can.
7. I want _____ to the movie theatre tonight. Would you like _____ with me?
8. I taught her how _____ a bike.
9. Don't forget _____ Ramesh today.

Correct the mistakes in the following sentences. **(5 x 1 = 5)**

10. The children is writing them exam.
11. The round rabbit ran away but the lion catched him.
12. The bag are very dirtier.
13. Janaki is not attending the exam, isn't they?
14. We have recording an songs.

Rewrite the sentences using the adverbs of frequency given in brackets in its correct position. **(5 x 1 = 5)**

15. She listens to classical music. (rarely)
16. They go to the movies. (often)
17. He reads the newspaper. (sometimes)
18. Sara smiles. (never)
19. She complains about her husband. (always)

Section B

Answer *any ten* of the following questions. **(10 x 2 = 20)**

20. What is strange about the plane crashes and shipwrecks in the Bermuda Triangle area?
21. The writer says 'the wreckage (of DC3 airline) should have been seen.' Why?

22. How did the Narmada get its name according to the legend?
23. How did Bermuda triangle get its name?
24. What do we learn from the readings of the radio communication?
25. Why are plans being made to change the course of the river?
26. What lesson did the garudas teach the king?
27. What might happen if the dams are built?
28. Describe the throne of Vikramaditya?
29. Why were the parents surprised at the judge's wisdom?
30. How was the judge different from his playmates?
31. What threatens the existence of the Narmada today?

Section C

Compose SMS (2 x 3 = 6)

32. Compose SMS to your teacher asking permission to participate in a quiz competition.
33. Compose SMS to your friend asking some money. State reasons also.

34. **Construct a dialogue between a doctor and a patient suffering from stomach ache.** (5)

35. **Fill in the blanks to complete the dialogue meaningfully.** (5)

Rahim: Did you finish your football practice today?
Joseph: ……
Rahim: When will you finish the practice?
Joseph: ……
Rahim: Oh! You will finish it only at 8 pm? why?
Joseph: ……
Rahim: Why did your coach come late?
Joseph: ……
Rahim: Is his home at Ernakulam?
Joseph: ……
Rahim: Did he purchase the sports shoes for you all?
Joseph: Not only sports shoes but also the T-shirts and shorts for us.
Rahim: ……
Joseph: Yes, he is a very good person.
Rahim: ……
Joseph: Oh sure! Please come for the football match tomorrow.
Rahim: ……
Joseph: The match is at the Central stadium.
Rahim: ……
Joseph: Thank you Rahim.
Rahim: ……

36. **Write a report on your trip to Wonderla.** (5)

37. **Write a letter to the managing director of the bookshop 'DC Books' inquiring about the availability of 10th standard text books.** (5)

Read the passage and answer the following questions. (7x2=14)

The Wolf was having fish for lunch, when suddenly a tiny bone got stuck in his throat. The Wolf tried to swallow it but he couldn't. It started hurting so terribly that the wolf couldn't bear the pain any longer.

He ran out to look for help. First, he met a Bear. "I would give you anything if you help me take out the bone", the wolf said. But the Bear's paw was too big and he couldn't help.

Then, the Wolf saw his friend Fox. "Please, Fox, I'm in a great pain. If you help me take the bone out, I will give you whatever you want." The Fox told the Wolf to open his mouth but the bone was stuck too deep in his throat and he couldn't reach it.

Next, the Wolf met a Crane. "Crane, my friend, I would give you anything if you took out the bone that is stuck in my throat." The Crane made the Wolf open his mouth as wide as he could and quickly took out the bone from inside the Wolf's throat. "You promised to give me anything if I helped you", said the Crane... ... but the Wolf just grinned and said "You received your gift already. You put your head inside a Wolf's mouth. You are still alive and that is the biggest gift I could give you."

Write one word for the following phrases from the passage.

38. a meal eaten in the middle of the day
39. to search for someone

Find the opposites of the given words from the passage.

40. enemy
41. close

Make sentences using the following words.

42. swallow
43. suddenly

44. What was the wolf's problem?
45. Whom did he approach second? What happened?
46. How did the crane help the wolf?
47. What gift did the crane get for helping crane?

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BCS 1741 SOFTWARE ENGINEERING

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1. AIM

- To gain knowledge of the terms: requirements specification, principles of Software documentation, Testing, testing plan and testing tools.
- To enable the students to develop different diagrams as part of Software documentation.
- To enable the students to learn about testing fundamentals.

2. OBJECTIVES

By the end of this course, the student should be able to:

- Understand the importance and concepts of Software documentation
- Acquire the skill of software testing
- Be aware of developing a test plan and software testing tools.

3. SYLLABUS

Module I:

Introduction to software engineering

What is software engineering, Objectives of software engineering, Phases of software engineering, Software process, project and product.

Software Development Life Cycle, SDLC Model: Waterfall Model, Prototyping, iterative development, Spiral Model; Comparison of different Life Cycle Models

Module II:

Software Requirements Analysis: Software Requirements, Functional- non-functional requirements, Requirements Specification: SRS, Structure of a Requirements document.

Feasibility studies, Requirements elicitation and analysis

Function oriented design: modularity, Top-down and Bottom-up Strategies

Algorithms and Flowchart, Data Flow Diagrams, Developing the DFD Model of a system, Entity Relationship Diagram, Developing ERD of a system, Gantt chart.

Module III:

Object oriented design, Object Oriented Design using UML, Class Diagram, Sequence Diagram, and Collaboration Diagram; developing UML diagrams for a system. Software Implementation-standards and guidelines

Module IV:

Testing- Purpose of testing, Software Quality, Testing- error, fault and failure, test plan, test cases, Creating Test case, Positive test cases, Negative test cases. STLC

Black Box Testing - Equivalence Class Partitioning, Boundary Value Analysis, Cause Effect Graphing; White Box Testing- control flow based and data-flow based testing

Manual Testing & Automation Testing, Types of test Tools, Levels of testing - unit testing, integration testing, system testing, acceptance testing, Alpha and Beta testing

Lab Sessions

There shall be Lab Sessions to practice the concepts of Software testing and gain skills in software testing. The lab sessions shall give practise to the students to list out the requirements for a given problem, derive test cases for the given problem.

There shall be sessions on

- Preparing test cases for any software application
- Writing test suites for applications
- Executing Test and record results
- Understanding Selenium tool to perform web testing

However, there shall be no End semester lab examination.

4. REFERENCES

4.1 Core

- Rajib Mall, Fundamentals of Software Engineering, Fourth Edition, PHI

4.2 Additional

- PankajJalote, An Integrated Approach to Software Engineering, Narosa
- WamanS.Jawadekar, Software Engineering, McGraw hill, 2013
- Software Engineering (Seventh edition), Ian Sommerville – Addison Wesley.
- Software Engineering: A practitioner's approach (Sixth Edition), Roger S Pressman-Mc Graw Hill.
- Journals and Magazines: (i) Software Development, CMP Media. (ii) Software Quality Professional, ASQ.

4.3 Internet

- http://www.slideshare.net/javiergs/software-testing-notes-part-12
- http://www.cs.bham.ac.uk/~exc/Teaching/STesting/

MODEL QUESTION PAPER

BCS 1742 – SOFTWARE ENGINEERING

Time: 3 hrs. Max Marks: 80

SECTION A

I. **Choose the correct answer.** **(10 marks)**

1. Which diagram in UML emphasizes the time –ordering of messages?
   a) Activity b) Sequence c) Class
2. Who writes the SRS?
   a) Developer b) Analyst c) Customer
3. The software does not do what the user expects is called _____.
   a) Error b) Failure c) Bug
4. System Analysis is done through
   a) Surveys b) interviews c) discussions d) All of these
5. A programmer would be a useful person to employ in which stage?
   a) Development b) Analysis c) Design
6. DSS stands for _____
   a) Domain Support System b) Data Supply System
   c) Direct Supply System d) Decision Support System
7. Feasibility study is a part of _____ activity
   a) Testing b) Preliminary Investigation c) Coding
8. _____ shows the relationship between objects and the order of messages passed between them
   a) Collaboration diagram b) Sequence diagram c) Deployment Diagram
9. An input field takes the year of birth between 1900 and 2012. What the boundary values for testing this field?
   a) 1899,1900,2012,2013 b) 1900, 2012 c) 1900, 1905, 2010, 2012
10. An ER diagram will have _____
    a) Entities b) attributes c) relationship between entities
    d) All of these

II. **State whether True or False** (5 x 1=5 marks)

11) Modularity is done to decrease the complexity of the problem.
12) The customers will do the beta testing.
13) In a DFD the arrows may cross each other
14) The UML is a graphical language with sets of rule and semantics
15) Use Case describes the interaction between actor and system.

III. **Match the following.** **(1×5 = 5 Marks)**

16) Requirements Capture - Object Oriented Approach

17)	Modularity	-	Domain Analysis
18)	Design	-	Structural and Behavioural Modeling
19)	Maintenance	-	Source code
20)	Java	-	Performance Tuning

SECTION B

IV. Answer the following. (5 x 1=5 marks)

21. STLC stands for _____
22. LOC stands for _____
23. SRS stands for _____
24. ER stands for _____
25. DFD stands for _____

V. Answer the following. (5 x 1=5 marks)

26) Define a System?
27) What are the symbols used in DFD?
28) Define Entity
29) What is attribute?
30) What is Relationship?

SECTION C

VI. Write the difference between the following **(5 x 2= 10 marks)**

31) DFD and ER diagram
32) Alpha Testing and Beta Testing
33) Positive and Negative Test cases
34) Top down and Bottom up Approach
35) Unit and Integration Testing

VII. Answer <u>any five</u> questions **(5x2=10 marks)**

36) What are System Specifications? Give the difference between functional and non-functional requirements.
37) What is a good quality software?
38) What is UML? Explain
39) What are the different levels of Testing?
40) Explain Gantt chart?
41) What is E-R Diagram?
42) What is DFD?

SECTION D

VIII. **Answer any five questions** **(5x3=15 marks)**

43) Explain Gantt chart?

44) Define a System

45) Explain Class diagram

46) Explain the concept of bottom-up, top-down design

47) Explain black box Testing Techniques?

48) Explain Automation Testing?

49) What is a Feasibility Study? Explain

SECTION E

IX. **Answer any THREE questions:** **(3x5=15 marks)**

50) Explain various stages of software development life cycle.

51) Draw a DFD for Hotel Management application

52) Draw ER diagram for book store

53) Generate a Test case report for the following scenario
"Validate the Admin login functionally"

1. AIM

To provide awareness about programming, programming languages and clear understanding about software development using JAVA programming language.

2. OBJECTIVES

After the completion of this course, the student should be able to:

- To learn the basics of Java programming
- To learn about the concepts of Servlets, Packages and Interfaces
- To learn the concepts of AWT and Swing

3. SYLLABUS

MODULE I:

Introduction to Java Programming- Java Evolution: History, Advantages of Java, Classes, objects and methods: Defining a class, adding methods, Creating objects, accessing class members Constants, variables and data types, Operators and expressions, Applications: Simple java Programs, java program structure, Decision making and looping, decision making and branching

MODULE II:

Constructors, method overloading, Command line arguments, final variables and Methods, abstract methods and classes, Arrays, One dimensional array, two dimensional arrays, Strings

MODULE III:

Interfaces-Multiple Inheritance, Defining interfaces, Extending interfaces, and Implementing interfaces, Java API Packages

Exception Handling - Managing errors and exceptions- try and catch statement, using finally statement, JDBC

MODULE IV:

Servlets : Introduction, Servlet Fundamentals, What is a Web-Container, Servlet Life Cycle / Architecture, HTTP GET and POST Request Methods, Processing Html Forms

Graphics: Graphics class, AWT and Swing (Concepts only), buttons, windowed application, images

4. REFERENCES

4.1 Core

- Balaguruswamy, "Programming in Java", 2nd Edition, TMH Publications, 2014

4.2 Additional

- Peter Norton, "Peter Norton Guide to Java Programming", Techmedia Publications
- Sachin Malhotra & Saurabh Chaudhary, "Programming in Java",2nd Edition, Oxford University Press, 2018

4.3 Internet References

- https://www.javatpoint.com/java-tutorial
- https://www.tutorialspoint.com/java/
- https://beginnersbook.com/java-tutorial-for-beginners-with-examples/
- https://www.learnjavaonline.org/

MODEL QUESTION PAPER

BCS 1742: Programming using Java

Time: 3 Hours Max. Marks: 80

SECTION A

I. Choose the correct answer. **(10×1=10 Marks)**

1. _____ is one of the java features that enables java program to run anywhere anytime.
   a) Applet b) Multithread c) Platform-Independent d) Dynamic
2. How constructor can be used for a servlet?
   a) Initialization b) Constructor function c) Initialization and Constructor function
   d) Setup() method
3. All syntax errors are known as _____ errors.
   a) Run-time b) Compile-time c) Logical d) None of these
4. The clean-up activities corresponding to the try block are performed in _____ block.
   a) catch b) exception c) finally d) paint
5. Creation of objects is done by
   a) final b) new c) import d) abstract
6. Which is a reserved keyword in java?
   a) Implements b) Extends c) Package d) All of these

7. The method that converts a string to a float data type
   a) Float.parseFloat(String) b) float y =(float) x;
   c) Web browser d) MS Word
8. Java interpreter translates _____ into machine code.
   a) Bitcode b) Bytecode(Virtual Machine Code)
   c) Machine Code d) User code
9. The classes and methods needed to run Java programs are part of
   a) JVM b) JDK c) API d) javah
10. The binary left shift operator is denoted by
   a) < b) << c) <<< d) >>

II. State whether the statements are true or false: **(5×1=5 Marks)**

11) Java supports multithreading.
12) Java has operator overloading.
13) Servlets are tiny Java programs that can be downloaded and executed in a Java enabled Web browser.
14) The keyword final is used with classes to prevent inheritance.
15) Constructors do not have a return type.

III. Fill up the blanks. **(5×1=5 Marks)**

16. JVM stands for _____
17. OOP means _____
18. Scanner in= _____ Scanner(_____.in);
19. The keyword used for inheritance is _____
20. The command line arguments are stored in the variables _____.

SECTION B

IV. Write syntax for the following: **(10×1= 10 Marks)**

21. Declaring single dimensional array.
22. Class declaration.
23. Input statement in java
24. Conditional operator
25. Do...while loop
26. if-else
27. Two dimensional array
28. drawLine() method.
29. for loop.
30. switch statement.

SECTION C

VII. Answer any FIVE questions. (5 x 2 = 10 marks)

31. Define Object and Class.
32. What do you mean by exception? How are they handled in Java? Explain try-catch -finally block with an example.
33. What is Inheritance? How is a class inherited in Java? Describe different forms of inheritance.
34. What is the use of Java AWT package? Explain.
35. What is the difference between GET and POST method?
36. What is an array? Write a statement to declare an integer array of 10 elements.
37. If int n[ ] ={1, 2, 3, 5, 7, 9, 13, 16} what will be the values of x and y?

```
x  =  Math.pow( n[4], n[1] );
y  =  Math.sqrt( n[5]+ n[7] );
```

VI. Define and differentiate the following (5×2=10 Marks)

38. java and javac
39. Source code and Byte code
40. Platform-Independent and Platform-Dependent
41. Applications and Servlets
42. Default and parametrized constructors

SECTION D

VII. Answer any five from the following: (5×3=15 Marks)

43. Explain extends keyword in Java.
44. Explain JDBC.
45. Which are the different stages of servlet life-cycle?
46. What are byte codes?
47. How will you define a Button?
48. Explain concept of swing.
49. Abstraction and Encapsulation
50. JDK and API

SECTION E

Answer any three questions (3×5=15 Marks)

51. Write a Java program to find the factorial of a given integer.
52. Write a program to add two matrices.
53. Write a command line program to find the sum of N numbers.
48. Write a program to find the number of vowels in a character array.

1. AIM

The aim of this course is to provide the student with the basic knowledge of ASP.NET and the C#.NET in .NET framework by syntax teaching, programming, debugging and object-oriented programming design.

2. OBJECTIVES

At the end of this course, the student should be able to:

- Create an asp.net based web application by using Visual Studio .Net
- C# language and object-oriented concepts
- Using ADO.NET to access and manipulate database data

3. SYLLABUS

Unit 1-

Lab Exercises to gain an understanding of ASP.NET Controls.
Creating Simple application using web controls: Web forms, web form controls, Adding controls to a web form - Buttons, Text Box ,Labels, Checkbox, Radio Buttons, List Box, etc. Running a web Application, creating a multiform web project.

Unit 2-

Exercises on Form Validation: Client side validation, server Side validation, Validation Controls: Required Field, Comparison Range. Calendar control, Ad rotator Control, Internet Explorer Control. State management- View state, Session state, Application state

Unit 3-

Exercises to practise Accessing Database on web applications: Connecting forms to backend databases- MySQL, Create Connection using ADO.NET Object Model, Connection Class, data bound Controls and Data Grid. Display data on web form using Data bound controls.

Unit 4-

Create a master page to serve as a template for the Web site's pages, Building a Web Application, Web Application deployment

4. REFERENCES

4.1 Core

- David Mercer, Asp.Net: A Beginner's Guide
- Ajoy Krishnamoorthy, ChrisGoode, Chris Ullman,Christopher L. Miller,Dave Sussman, Beginning Asp.net 1.0

4.2 Additional

- ASP.NET 4 24-Hour Trainer: Toi B. Wright
- ASP.NET 3.5 Unleashed By: Stephen Walther
- Ado.net The Complete Reference By: Michael Otey.

4.3 Internet

- http://www.dotnetspider.com/tutorials/
- http://www.freebookcentre.net/MicroSoftTech/Asp-DotNet-Books-Download.html
- http://www.asp.net/
- http://www.codeproject.com/KB/aspnet/
- http://www.csharp-station.com/Tutorials/AdoDotNet/Lesson01.aspx
- http://www.mysqltutorial.org/

1. AIM

To provide an opportunity for hands-on practice in Java.

2. OBJECTIVES

This course will provide hands-on practice in the following topics, under a variety of programming situations with a focus on writing, debugging and analysing object oriented programs.

3. SYLLABUS

Unit 1-

1. Testing out and interpreting a variety of simple programs to demonstrate the syntax and use of the following features of Java language: basic data types, operators and control structures. Class, objects and methods, Simple programs using constructors, Program involving method overloading, prams using command line arguments

Unit 2-

1-D Arrays: A variety of programs to declare, intitialise, read, print and process 1-D arrays of various basic data types.

2-D Arrays: A variety of programs to declare, intitialise, read, print and process 2D arrays of various basic data types.

Programs to demonstrate methods of String class.

Unit 3-

Programs to introduce Interfaces-defining and implementing

Programs that demonstrates how to manage errors and use exceptions- try and catch

Unit 4-

Programs to introduce Servlets, Programs to demonstrate AWT Graphic methods, Program for loading and viewing images.

4. REFERENCES

4.1 Core

- Balaguruswamy, “Programming in Java”, 2nd Edition, TMH Publications

4.2 Additional

- Peter Norton, “Peter Norton Guide to Java Programming”, Techmedia Publications

4.3 Internet

- https://www.tutorialride.com/servlets/life-cycle-of-servlets.htm
- https://www.tutorialspoint.com/java/

1. AIM

- Mini project shall serve as an opportunity
    - for understanding the tool/programming language/platforms taught in the particular semester better
    - to get practical experience
    - Chance to showcase skills
    - To learn about team work, communication skills and responsibilities
- Mini project will give an opportunity for students to prepare for the major project and also contribute to achieving some of the objectives of the major project.

2. GUIDELINES FOR MINI PROJECT

- Team size shall preferably be three. Individual projects may be permitted in exceptional cases, for valid reasons.
- The project shall be purely internal in nature.
- Through the project, students shall
    - develop web sites using ASP.Net with C# and any backend tool, or
    - Build website portal using JSP and Servlets.

The following will be the components for internal evaluation of the Mini Project:

- Presentation of the work - 10 marks
- Individual involvement & team work - 5 marks
- Timely submission & creativity - 5 marks
- Attendance - 5 marks

Semester VIII

Course Code & Name		Credits	Hrs per week		CA Max	ESE Max	ESE Min. Pass	Total Marks	Min. Pass [CA + ESE]
			Lecture	Lab					
EHI 1801	Communicative English VI (*Audit Only*)	0	4	-	-	-	-	-	S/ NS
BCS 1841	Advanced Computing Concepts	4	4	-	20	80	30	100	40
BCS 1861.1 BCS 1861.2	<u>Electives</u>: PHP Lab Android Lab	4	-	8	20	80	30	100	40
BCS 1842	Major Project	6	-	14	100	300	105	400	160
	Total:	**14**	**30 hrs.**		**140**	**460**	**-**	**600**	-

EHI 1801 COMMUNICATIVE ENGLISH VI [Audit only]

1. AIM

- To build a basic vocabulary of a minimum of 500 words.
- To teach some grammatical structures.
- To enhance the student's ability to read and write the English used in daily life.
- To familiarize students to write in academic, social and work related situations.

2. OBJECTIVES

On completion of this course, the students should be able to

- Understand the use of English in everyday life.
- Respond to communication in English in different contexts.
- Understand the use of reporting.
- Gets an idea about the different usages.
- Learns the format of a typical letter.
- Comprehends and infers by reading paragraphs.
- Makes use of new words and usages in writing paragraphs.

3. SYLLABUS:

MODULE I:

Composition: Proposal preparation; report writing.

MODULE II:

Composition: Letter writing – formal; captioning.

MODULE III:

Composition: Letter writing – company correspondence.

MODULE IV:

Composition: Filling up different forms (application forms, etc.); Resume preparation; Composing emails.

4.1 REFERENCES:

4.1 Core

- Devidas, K. N. (2018). New Gul Mohar Reader 5, 8th Edition, Orient Blackswan. ISBN: 987-81-250-5634-8.

4.2 Additional

- Murphy, R. (2011). Essential Grammar in Use (2nd edition), Cambridge University Press. ISBN-13 978-81-7596-029-9.
- Lott, H. (2010). Real English Grammar – Pre-Intermediate. Marshall Cavendish Ltd. ISBN 978-81-309-0878-6.
- Murphy, R. (2007). Essential Grammar in Use (3rd edition), Cambridge University Press., ISBN 978-0-521-13393-7.
- Hewings, M. (2006). Advanced English Grammar. Cambridge University Press., ISBN 81-7596-067-1.
- Murphy, R. (2010). Murphy's English Grammar (3rd edition), Cambridge University Press., ISBN 978-0-521-61662-1.

4.3. Internet

- www.englishpage.com
- www.englishgrammar101.com
- www.ego4u.com
- www.usingenglish.com
- www.grammarbook.com
- www.learn4good.com
- www.englishclub.com

BCS 1841 ADVANCED COMPUTING CONCEPTS

1. AIM

To create an awareness about the advanced topics in computer technologies. The aim of the course is to provide a very basic understanding of the concepts. Deeper understanding may be gained at PG level of study.

2. OBJECTIVES

By the end of this course, the student should be able to:

- Have a general awareness about the recent and trending topics in computer technologies
- Expose students to some of the latest IT related terminologies

3. SYLLABUS

Module I:

Client Server Software, Client Server architecture, two tier & three tier (Concepts)
Data storage in the cloud: Cloud Computing - Technologies for network Based system- distributed and cloud computing, Cloud Types, Cloud models- cloud services (IaaS, PaaS, SaaS) – public vs. private cloud-computing

Module II:

E-Technologies: Electronic Commerce: E-business, Framework, Consumer Applications, Organization Applications. Electronic Payment Systems: E-cash, Credit cards, Debit cards, Smart Cards, Risks in Electronic Payment System and security concerns in e commerce, Gateways.

Module III:

Mobile Commerce: Mobile Devices, Computing software, Wireless Telecommunication devices, Mobile finance applications, Web 2.0 Revolution

Module IV:

Digital Libraries and Data Warehousing: Concepts, Types of Digital documents, Main concepts in Geographical Information System (GIS), ERP packages - introduction and examples.
Data Warehousing: Data Mining

Note: The course lectures shall give only a basic introduction to the topics.

4. REFERENCES

4.1 Core

- Cloud Computing for Dummies by Judith Hurwitz, R.Bloor, M.Kanfman, F.Halper, Wiley India Edition)
- Venkatakrishna & et. al, Principles of Grid computing - Concepts and application, Ane Books
- Kris Jamsa, Cloud Computing; Jones & Bartlett Learning.
- Rahul Deva & Garima Kulshreshtha. Soft computing. Shroff publishers & Distributors Pvt. Ltd.

4.2. Internet

- www.ecommercetimes.com,
- www.online-commerce.com,
- www.rsa.com,
- www.ntsecurity.com
- www.easystorecreator.com/ecommercetutorial.asp

MODEL QUESTION PAPER

BCS 1841 ADVANCED COMPUTING CONCEPTS

Time: 3 Hours Max. Marks: 80

SECTION A

1. Choose the correct answer. (10 marks)

1. An example of SaaS is
   i) Google App ii) Azure
   iii) Apache iv) All of the above
2. Which of the following is Cloud Platform by Amazon?
   i) Azure ii) AWS
   iii) Cloudera iv) All of the mentioned
3. _____ is a cloud service that can be accessed by only a limited number of persons.
   i) Data centre ii) private cloud
   iii) public cloud iv) Virtual machine
4. Customers being able to buy products and services on the Internet is a result of:
   i) e-business. ii) e-marketing.
   iii) e-purchasing. iv) e-commerce.

5. E-business

i) Electronic business ii) Ergonomic business

iii) Electrical business iv) Extra Business

6. Which of these is not referred as Plastic money?

i) Credit card ii) Debit card

iii) Smart card iv) 00 Rupee note

7. _____ is an example of an auction site

i) e-bay ii) ibibo

iii) facebook iv) orkut

8. ..... is an example of Mobile Commerce.

i) Mobile Banking ii) Mobile Purchase

iii) Mobile Investment iv) All the above

9. ..... is abbreviated as Copyright

i) c ii) ©

iii) c* iv) @

10. GIS deals with which kind of data

i) Numeric data ii) Binary data

iii) Spatial data iv) Complex data

State whether the following statements are True or False. **(5 marks)**

11. By 'spatial data' we mean data that has spatial value.
12. Metadata is Oceanic data.
13. Google Apps is an example of cloud computing
14. AWS is the Cloud Platform by Amazon.
15. Skeleton is a gateway used in Server side object.

Fill in the blanks **(5 marks)**

16. IaaS stands for _____
17. GIS stands for _____
18. ERP stands for _____
19. Full form of ATM is _____
20. PIN stands for _____

SECTION B

Answer the following questions. **(5 marks)**

21. List any two mobile marketing tools.
22. Give at least 4 examples of ERP packages
23. What is Data warehousing?

24. What do you mean by metadata?
25. Name the three categories of Cloud Computing

SECTION C

Define: **(2 x 5 = 10 Marks)**

26. ERP
27. GIS
28. Data Mining
29. Cloud computing
30. Electronic Payment Gateways

Answer any five questions. **(2 x 5 =10 marks)**

31. List out the advantages of Internet.
32. What do you mean by portal?
33. What is Web 2.0? Give examples of Web 2.0 sites.
34. Which are the different Electronic Payment Systems?
35. Differentiate between public and private cloud-computing
36. What is the difference between e-commerce and e-business?
37. Describe Digital Libraries.

SECTION D

Answer any 5. **(5 x 3 =15 marks)**

38. Explain Client Server architecture. What is two tier & three tier architecture?
39. How is a data warehouse different from database?
40. Explain the types of cloud services (IaaS, PaaS, SaaS)
41. What is the Web 2.0 revolution?
42. What are the Risks in Electronic Payment System?
43. What do you understand by WWW? What is the use of hypertext links in Internet access?

SECTION E

Answer any Three questions **(3 x 5=15 marks)**

44. Architecture of a typical data mining system.
45. Explain about the basic applications of Internet.
46. Write about the advantages and disadvantages of E-Commerce.

BCS 1861.1 PHP LAB

1. AIM

- To introduce various tools and languages required to implement functionality in dynamic web-pages
- To introduce a set of core technologies that drive most modern web applications, namely Scripting.

2. OBJECTIVES

By the end of this course, the student should be able to:

- Understand basic skills in PHP scripts
- Develop interactive web based application using PHP and MySQL
- Understand the current trends and styles in web design and applications

3. SYLLABUS

Unit 1-

PHP Intro, PHP Install, Simple PHP programs - PHP Syntax, PHP Variables, PHP Echo / Print, PHP Data Types, PHP Strings, PHP Constants, PHP Operators

PHP If...Else...Elseif, PHP Switch, PHP While Loops, PHP for Loops

Unit 2-

ARRAYS: Creating an array- modifying array-processing array- using array functions- FUNCTIONS - creating user defined functions- using files- sessions- cookies-

Creating sample applications using PHP.

STRING-Creating and accessing String, Searching & Replacing String, Formatting String, String Related Library function

Unit 3-

Working with Forms: Creating Forms, Accessing Form Input with User defined Arrays, Combining HTML and PHP code on a single Page, Using Hidden Fields to save state, Redirecting the user, Sending Mail on Form Submission.

Working with Cookies and User Sessions

Unit 4-

DATABASE CONNECTIVITY WITH MYSQL

Connection with MySQL Database, Performing basic database operation (DML) (Insert, Delete, Update, Select); Sample Application

4. REFERENCES

4.1. Core

- Julie C.Meloni, PHP, MySQL and Apache, Pearson Education
- VIKRAM VASWANI, “PHP and MySQL”, Tata McGraw-Hill, 2005

4.2. Additional

- Ivan Byross, PHP for Beginners
- D W Mercer,A Kent,S D Nowicki, Beginning PHP, Publisher:Wrox
- PHP & MYSQL FOR DUMMIES, 3RD ED Author : JANET VALADE Publishers: Wiley

BCS 1861.2 ANDROID LAB

1. AIM

To acquire the necessary skills for developing applications for modern smartphone operating systems.

2. OBJECTIVES

The main objective of this course is

- To provide introduction to Android operating system
- To develop simple mobile applications
- To equip the students with the basic knowledge and skills for the existing and emerging Mobile Applications and Cloud technology fields

3. SYLLABUS

Unit 1-

Introduction to Android and Development Environments- Android SDK , Installing the Android SDK Tools Configuring the Android SDK Manager – Eclipse , Android Development Tools (ADT) , Creating Android Virtual Devices (AVDs) , Creating Your First Android Application – Types of Android Application , Anatomy of an Android Application.

Unit 2-

Activities, Fragments and Intents Understanding Activities , Creating Activities , Linking Activities Using Intents, Resolving Intent Filter Collision , Returning Results from an Intent, Passing Data Using an Intent Object , Fragments , Adding Fragments Dynamically , Life Cycle of a Fragment , Interactions between Fragments

Unit 3-

Android User Interface Understanding the Components of a Screen , Adapting to Display Orientation, Managing Changes to Screen Orientation , Utilizing the Action Bar , Creating the User Interface Programmatically, Listening for UI Notifications , Designing Your User Interface With Views , Using Basic Views , Displaying Pictures And Menus With Views , Using Image Views to Display Pictures – Using Menus with Views

Unit 4-

Databases, Creating and Using Databases, Content Providers, Sharing Data in Android, Using a Content Provider , Content Providers , Using the Content Provider – Messaging , SMS Messaging, Sending Email.

Publishing Android Applications, Preparing for Publishing, Deploying APK Files.

4. REFERENCES

4.1 Core

- Wei-Meng Lee, ”Beginning Android 4 Application Development”, Wrox publications, 2012

4.2 Additional

- The Android Developer's Cookbook: Building Applications with the Android SDK James Steele, Nelson to Addison Wesley Publications 2010 First Edition.
- Professional Android Application Development. Reto Meier, Wrox publications, 2009, Second Edition

4.3 Internet

- https://www.tutorialride.com/android/android-graphics.htm
- http://tmu.ac.in/college-of-computing-sciences-and-it/wp-content/uploads/sites/17/2017/04/BCA-visually-chalanged.pdf

BCS 1842 – MAJOR PROJECT

1. AIM:

To expose student to industry–standard project practices, through a real life project work under time and deliverable constraints, applying the knowledge acquired through various courses.

2. OBJECTIVES:

- To provide an opportunity to apply the knowledge gained through various courses in solving a real-life problem
- To provide an opportunity to practice different phases of software/system development life cycle
- To introduce the student to a professional environment and/or style typical of a global IT industry
- To provide an opportunity for project management
- To provide an opportunity for effective, real-life, technical documentation
- To provide an opportunity to practice time, resource and person management.

3. PROJECT GUIDELINES

The aim of the project work is to expose students to industry-standard practices.

Evaluation of the Project work and conduct of viva-voce shall be done by a common board of examiners at the end of eighth semester.

The minimal phases for the project are: Project search, Submission of Project Proposal, finalization and allocation, Investigation of system requirements, Data and Process Modelling, System Design, Program design, Program coding and unit testing, System integration, System implementation and acceptance testing.

3.1 Planning the Project

The BSc (Computer Science) (HI) Major Project is an involved exercise which has to be planned well in advance.

3.2 Selection of project work:

Project work could be of 3 types:

a) Developing solution for a real-life problem:

In this case, a requirement for developing a computer based solution already exists and the different stages of system development life cycle is to be implemented successfully. Examples are Accounting Software Package for a particular organization, Computerization of administrative functions of an organization, Web Based Commerce, etc. The scope for creativity and exploration in such projects is limited, but if done meticulously, valuable experience in the industrial context can be gained.

(b) Innovative Product development:
These are projects where a clear-cut requirement for developing a computer based solution may not be existing but a possible utility for the same is conceived by the proposer. An example is a Malayalam Language Editor with Spell Checker, Computer Music Software for Indian Music, Heat Engines Simulation Software for eLearning, Digital Water Marking Software.

(c) Research level project:
These are projects which involve research and development and may not be as structured and clear cut as in the above case. Examples are Malayalam Character Recognition, Neural Net Based Speech Recogniser, Biometric Systems, Machine Translation System etc. These projects provide more challenging opportunities to students, but at BSc level is a difficult choice. If any student identifies proper support in terms of guidance, technology and references from external organizations and also the supervisors are convinced of the ability of the student(s) to take up the project, it shall be permitted. The methodology and reporting of such, projects could be markedly-different from type (a) and is left to the proposer /external supervisor of the projects.

3.3 INDIVIDUAL PROJECT

The project should be done individually by each Student.

3.4 SELECTION OF TOOLS

No restrictions shall be placed on the students in the choice of platforms/tools/languages to be utilized for their project work, though open source is strongly recommended, wherever possible. No value shall be placed on the use of tools in the evaluation of the project

3.5. PROJECT GUIDE & ASSESSMENT

The project guide should ideally be a post graduate in Computer area with minimum of two years' work experience OR B.Tech in Computer Science OR B.Tech degree in any discipline with experience in Computer area.

External evaluation of the Project work shall be done by an examiner(s) appointed by the University.

Internal evaluation of the Project work shall be done by the Faculty Guide and/or other faculty members. The work shall be reviewed internally at least twice during the Semester and shall be considered as CA marks.

Continuous Assessment

The CA marks of the project work shall be awarded as follows.

1. Timely completion of given tasks : 25 marks
2. Achievement of project deliverables : 25 marks
3. Presentation of the status of work : 50 marks

End-semester Assessment

The board of examiners shall award 300 marks based on the following components:

1. Quality of project documentation : 50 marks
2. Achievement of project deliverables : 150 marks
3. Effective technical presentation of the work : 50 marks
4. Viva Voce /Quiz : 50 marks

3.6 DOCUMENTATION

Two copies of the project report must be submitted by each student (one for department library and one for the student himself/herself).

The text of the report should be set in 11 pt., Verdana, 1.5 line spaced.

Headings should be set as follows:

i. CHAPTER HEADINGS 18 pt., Verdana, Bold, All Caps, and centred.
ii. Section Headings 12 pt, Verdana, Bold, All Caps, Left Adjusted.
iii. Section Sub-headings 12 pt, Verdana, Bold, Left Adjusted.

Titles of Figures, Tables etc. to be done in 12 point, Verdana, Italics, centred.

Page numbers shall be set at right hand top corner.

Only single space need be left above a section or sub-section heading and no space may be left after them.

The final outer dimensions of the report shall be 21 cm X 30 cm.

Only hard binding should be done.