ANWARUL ULOOM COLLEGE
(Autonomous)

(An Autonomous Muslim Minority Institution)
New Mallepally, Hyderabad – 500 001, T.S., India.
(Affiliated to Osmania University)
(Re – Accredited by N A A C with " A " Grade)

Faculty of Science

Department of Computer Science & Engineering

Board of Studies in C S E

Academic Year 2021–22

Anwarul Uloom College (Autonomous)

New Mallepally, Hyderabad ,Affiliated to Osmania University
(Re-Accredited with NAAC with A – Grade)

Faculty of Science
Department of C S E
B. Sc. (C S E) 1st Year- Semester – I
(2021 – 22)
(As per C B C S)
English
Paper Code 0106

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Unit – I: (12Hours)

SHORT FICTION: "The Curb in the Sky" by James Thurber- PRONUNCIATION: Consonant sounds-GRAMMAR: Noun-VOCABULARY: roots, prefixes and suffixes-SPELLING: wrong spelling- PUNCTUATION: Capitalisation -CONVERSATION: Introducing yourself in a formal /social contexts - READING :biography of Chindula Yelamma,a Telangana artisan -WRITING: guided writing and expansion -SOFT SKILLS: Motivation and goal setting-VALUES:"Well begun is half done"

Unit – II: (12Hours)

PROSE: "Happy People" by William Ralph Inge -PRONUNCIATION: Vowels: monophthongs-GRAMMAR: Pronoun-VOCABULARY: Word roots, prefixes, suffixes-SPELLING: 'un' and 'dis' for antonyms-PUNCTUATION: Capitalisation- CONVERSATION: Starting and controlling a conversation - READING: Million March-an initiative for statehood -WRITING: Sequencing-SOFT SKILLS: Self-confidence - VALUES: "Doubt is the beginning of wisdom"

Unit – III: (12 Hours)

POETRY: "A Psalm of Life" by Henry Wadsworth Longfellow-PRONUNCIATION: Vowels: diphthongs-GRAMMAR: Auxiliary verbs-VOCABULARY: Homonyms, homographs, homophones-SPELLING: Words ending 'tion' and 'sion' PUNCTUATION: Full stop and comma-CONVERSATION: Describing your college and course of study-READING PASSAGE: Bathukamma-WRITING: Descriptive writing-SOFT SKILLS: Non-verbal communication/body language-VALUES:" Actions speak louder than words"

Unit – IV: (12 Hours)

DRAMA: "The Dear Departed" (an extract) by Stanley Houghton-PRONUNCIATION:varied pronunciations of the small letter -GRAMMAR: Main verbs and tenses -VOCABULARY:

Collocations-SPELLING: Words ending ‘tion’ or ‘ment’ -punctuation: Question And exclamation marks-CONVERSATION: Leaving a message on the answering machine,making an appointment on telephone-READING: Husain Sagar lake: a well known tourist attraction – WRITING: Dialogues writing-SOFT SKILLS: Interpersonal skills-VALUES: “Faith will move mountains”.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

Prescribed Text Book for Semesters I and II :

Title: English Made Easy published by Orient Blackswan

Editors: Prof. E. Suresh Kumar,Prof. Sumita Roy and Prof. A. Karunaker.

Faculty of Science
Department of C S E
B. Sc. (C S E) 1st Year- Semester – I
(2021 – 22)
(As per C B C S)
Mathematics – I
Paper Code 7141

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

The objective of this course is to introduce:

1. Qualitative problems based on vector analysis and matrix analysis such as linear independence and dependence of vectors, rank etc.
2. Concepts of limit theory, nth order differential equations and their applications to our daily life
3. Problems of differentiation of functions of two variables and the maximization and minimization of functions of several variables.
4. Applications of double and triple integration in finding the area and volume
5. Applications of Gauss, Stoke's and Green's theorem

Course outcomes: At the end of course students will be able:

1. To solve qualitative problems based on vector analysis and matrix analysis such as linear independence and dependence of vectors, rank etc.
2. To understand the concepts of limit theory and nth order differential equations and their applications to our daily life
3. To solve the problems of differentiation of functions of two variables and know about the maximization and minimization of functions of several variables.
4. To know the applications of double and triple integration in finding the area and volume
5. To Know about qualitative applications of Gauss , Stoke's and Green's theorem

Unit – I: (12 Hours)

Sequences – Series – Convergences and Divergences – Ratio test – Comparison test – Integral test – Cauchy's test – Raabe's test – Absolute and Conditional convergence. Rolle's theorem – Lagrange's Mean Value theorem and Cauchy's Mean Value theorem – Generalized Mean Value theorem.

Functions: Several Variables - Functional dependence – Jacobean – Maxima and Minima of functions of two variables with constraints or without constraint – Radius, Center and Circle of Curvature – Evolutes and Envelopes.

Unit – II: (12 Hours)

Differential equations of first order and first degree – exact, linear and Bernoulli. Applications of Newton's law of Cooling, law of Natural growth and decay. Orthogonal trajectories – Non-

homogenous linear differential equations – second and higher order with constant coefficient with R H S term of the type of Sin ax, Cos ax, polynomials in x. Method of Variation of parameters.

Unit – III: (12 Hours)

Laplace transform of Standard functions – Inverse transform – first shifting theorem, Transforms of derivatives and integrals – Unit step function – Second shifting theorem – Dirac's delta function – Convolution theorem – Periodic function – differentiation and Integration of Transforms – Application of Laplace transform to ordinary differential equations.

Multiple integrals – double and triple integrals – changes of variables - change of order of Integration.

Unit – IV: (12 Hours)

Vector Calculus: Gradient – Divergence – Curl and their related properties of sums – products – Laplacian and second order operators. Vector integration – Line Integration - Line integral – Work done – Potential function - Area – Surface and Volume integrals.

Vector integral theorems – Green's theorem – Stoke's and Gauss's Divergence theorem.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

References:

1. A Test Book of Engineering Mathematics, Volume – I
2. Engineering Mathematics, B V Ramana, Tata McGraw Hill

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Faculty of Science
Department of C S E
B. Sc. (C S E) 1st Year – Semester – I
(2021 – 22)
(As per C B C S)
Electrical Circuits & Machines (E C M)
Paper Code 7142

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Course objectives: The objective of this course is:

1. To introduces the basic concepts of network and circuit analysis which is the foundation of the Electrical Engineering discipline.
2. To introduces the basic analysis of circuits, network analysis, 1-phase ac circuits, and magnetic circuits.
3. To introduces knowledge of mathematics, science, & engineering to the analysis & design of electrical circuits.
4. To introduces circuit theorems to simplify and solve complex DC and AC electric networks.

Course outcomes: At the end of course students will be:

1. Able to Realize the working principles of electrical circuits and measuring instruments
2. Able to analyze linear electric circuits to determine DC response.
3. Able to analyze linear electric circuits to determine AC response.
4. Able to identify the type of electrical machine used for that particular application.
5. To apply knowledge of mathematics, science, &engineering to the analysis and design of electrical circuits.

Unit – I: (12 Hours)

Introduction to Electrical Circuits and Machines: Units – M K S units, S I units of electric charge, Potential, Power, Energy, Inductance and Capacitance, Flux, Flux density.

Unit – II: (12 Hours)

D C Circuits: Ohm's law, Network elements, Kirchoff's laws. Analysis of Circuits using loop current method and Mesh voltage method and node voltage method. Power in D C circuits. Series and Parallel combination of Resistance. Thevinin and Norton's theorems.

Unit – III: (12 Hours)

A C circuits: Sinusoidal sources, Phaser representation of Sinusoidal quantities, average and R M S value, form factor. Analysis of R L C circuits to Sinusoidal inputs, power factor active power, reactive power, Energy stored in Inductance and Capacitance.

Unit – IV: (12 Hours)

Transformers: Principles of Transformers , Transformer Voltage and Current. Transformer on non Load and Load, efficiency and regulation of Transformer, O C and S C test.D C Machines: Construction and working principle of D C Machine, Production of Torque in a D C servo motors, applications of D C Motors, losses and efficiency.Induction Motors: Production of rotating

magnetic field, construction and Principle of Induction motor.Slip torque characteristics. Single phase induction motors, capacitance motor, shaded pole motor and applications.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

References:1. Fundamentals of Electrical and Electronics: B L Theraja .2Electrical Technology, Vol. I, B L Theraja . 3.Electrical Circuit Analysis: Yada Narsimham

Faculty of Science
Department of C S E
B. Sc. (C S E) 1st Year - I – Semester
(2021 – 22)
(As per C B C S)
E C M Lab
Paper Code 7142 P

Total No. of Hours: 24 | Duration of Examination: 2 Hours
Max. Marks: 25 | No. of Credits: 1

Course objectives: The objective of this course is:
1. Expose to the characteristic of control of a D C shunt motor 2. Introduce Load test on a D C Shunt Generator 3. Introduce Fields Test . Hopkinson Test 4. Introduce Swinburne's Test 5. Expose to MAT lab Software.

Course outcomes: At the end of course students will be :
1. Able to understand Speed control of a D C shunt motor 2. Able to understand Load test on a D C Shunt Generator 3. Able to understand Fields Test and Hopkinson Test 4. Able to understand swinburne's Test 5. Able to understand use of MAT lab.

1. Speed Control of a D C Shunt Motor
2. Brake test on a D C Shunt Motor
3. Brake test on a D C Compound Motor
4. Open Circuit characteristics of a DC Shunt Generator
5. Load test on a D C Shunt Generator
6. Load test on D C Series Generator
7. Load test on a D C Compound Generator
8. Hopkinson test
9. Fields test
10. Retardation test on D C Shunt Motor
11. Swinburne's test
12. Separation of Core Losses
13. Mat lab – A
14. Mat lab – B
15. Mat lab – C

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Faculty of Science
Department of C S E
B. Sc. (C S E) 1st Year - Semester - I
(2021 – 22)
(As per C B C S)
Int. to Information Technology (IIT)
Paper Code 7143

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Course objectives: The objective of this course is:
1. To introduce the fundamental of computer software, hardware and data processing.
2. To introduce various operating system.
3. To acquire knowledge of MS-Word.
4. To familiarize MS-Excel.
5. To introduce various operators of Ms-Access, MS Power Point

Course outcomes: At the end of course students will be able:
1. To understand the computer components, hardware and software concepts of data processing
2. To understand the different OS, DOS, UNIX, OS Commands, windows explorer, Accessories.
3. To understand features and use of MS-Word,
4. To understand features and use of MS-EXCEL,
5. To understand features and use of M S – PowerPoint – MS Access & Types of Networks.

Unit – I: (12 Hours)

The Digital Age: Overview of Computer and Communication – Data Information. Hardware, Software, Communication, Hardware system, Computer types, C P U, Main Memory, Secondary Storage, Input and Output Devices, Computer Applications.

Unit – II: (12 Hours)

Operating System: Introduction, Types of Operating Systems, Functions of Operating System, D O S commands, Windows XP / 2007, Components of a Window, Windows Explorer, Internet Explorer Control Panel, Windows Accessories, Introduction to UNIX Operating System.

Unit – III: (12 Hours)

Word Processing System: Features of M S - Word, Document creation, Editing and Printing, Macro, Mail Merge, different views of M S – Word document.

M S – Excel: Spread Sheet, Cell, Cell addressing, formatting, Formulae, Different categories of Functions, Types of Charts and Graphs, Data Sorting, Data Filters, Graphics, Work Sheets of Database, Linking, Using Formula and Functions.

Unit – IV: (12 Hours)

M S - PowerPoint: Features, Toolbars, creating a new slide, creating presentations, Deleting a slide, copying a slide, slide numbering, saving, slide show, custom animation, closing and printing presentations.

M S - Access: Basic features of M S – Access – creating Data bases, creating Tables, Preparing Queries, Designing Forms, Generating Reports, Sorting tables, Displaying and Printing Databases records.

Communication Networks: Types of Networks, Local Area Network, Metropolitan Are Network, Wide Area Network, www, Internet and Intranet.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

References:

1. Information Technology the Wave by Dennis P Curin
2. Working in M S – Office by Ron Mac field, Tata McGraw Hill
3. M S – Office 2000 for every one by Sanjay Saxena
4. P C Software by Taxali

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Faculty of Science
Department of C S E
B. Sc. (C S E) 1st Year - Semester - I
(2021 – 22)
(As per C B C S)
I I TLab
Paper Code 7143 P

Total No. of Hours: 24 Duration of Examination: 2 Hours
Max. Marks: 25 No. of Credits: 1

Course objectives: The objective of this course is:

1. To design a visiting card, creating letter head, Bio data using Ms –Word.
2. To make a power point presentation.
3. To create a Database using Ms-Access.
4. To understand various operators of Ms-Access.
5. To create an electronic spreadsheet using Ms-Excel.

Course outcomes: At the end of course students will be able:

1. To create letter head, visiting card using Ms-word.
2. To create presentation on Current Affairs, College profile, books details.
3. To create database using M S Access, the relationship between tables and creating report.
4. To create MS-EXCEL Spread Sheet, formatting, apply formula on spread sheet.
5. To Create column Chart, 3 D – Column and Bar Chart for representing in Ms-Excel .

M S – Word:

1. Design a Visiting Card for Managing Director of a Company with following specification:
   - Size of Visiting Card 3.5" X 2"
   - Name of a Company with big font using Water Mark
   - Phone Number, Fax number and E – Mail address with appropriate symbols
   - Office and Residence address separated by line
2. Create a letter head of a Company
   - Name of Company on the top of the page with big font and good style
   - Phone Number, Fax Number, E – Mail address with appropriate symbols
   - Main products manufactured to be described at the bottom
   - Slogans if any should be specified in bold at the bottom
3. **Creation of your Bio – Data:** consisting Name, E – Mail ID, Contact Address, Carrier Objective, Educational Qualifications, Social activities, Achievements

M S – PowerPoint:

1. Make a PowerPoint presentation on your strength, weakness, hobbies, factors that waste your time
2. Make a PowerPoint presentation on any Current Affairs (Non less than 8 slides)
3. Make a PowerPoint presentation to represent your College profile
4. Make a PowerPoint presentation of all the details of the books that you have studied in B. Sc. First year.

M S – Access:

1. Create a Database using M S – Access with at least 5 records

Table 1 Structure:

Register Number Name DOB Gender Class

Table 2 Structure:

Register Number M1 M2 M3 M4 M5 Total

a) Maintain the relationship between two tables with Register Number as a Primary Key and answer the following queries

Show the list of Students with the following fields as one query

Register Number Name Gender Total Marks

b) Maintain the relationship between above two tables with Register Number as a Primary Key and answer the following reports:

Reports must have following columns:

Report 1: with Register Number Name Marks of All Subjects and Total

Report 2: with Register Number Total Percentage

2. Create a Database using M S – Access with at least 5 records:

Table 1 Structure:

EMP- CODE EMP-Name Age Gender DOB

Table 2 Structure:

EMP-CODE Basic Pay

Maintain the relationship between two tables with EMP-CODE as a Primary Key generates the following reports:

Report 1:

EMP-CODE EMP-NAME BASIC PAY DA HRA GROSS SALARY

Report 2:

EMP-CODE EMP-NAME AGE GENDER GROSS SALARY

M S – Excel:

1. Create an electronic spreadsheet in which you enter the following decimal numbers and convert into Octal, Hexadecimal and Binary numbers Vice Versa.

Decimal Numbers: 35, 68, 95, 165, 225, 355, 375, 465

Binary Numbers: 101, 1101, 111011, 10001, 110011001, 111011111

2. The A C B Company shows the sales of different products for 5 years. Create column Chart, 3 D – Column and Bar Chart for the following Data.

YEAR	PRODUCT-1	PRODUCT-2	PRODUCT-3	PRODUCT-4
2003	1000	800	900	1000
2004	800	80	500	900
2005	1200	190	400	1000
2006	400	200	300	1000
2007	1800	400	400	1200

3. Create a suitable examination data base and find the sum of the marks (total) of each student and represent class secured by the student
Rules:
Pass if marks in each subject >=35
Distinction if average >=75
First Class if average >=60 but < 75
Second Class if average >=50 but < 60
Third Class if average >=35 but < 50
Fail if a mark in any subject is< 35
Display average marks of the class, subject wise and pass percentage

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Faculty of Science
Department of C S E
B. Sc. (C S E) 1st Year – Semester – I
(2021 – 22)
(As per C B C S)
Programming in C
Paper Code 7144

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Course objectives: The objective of this course is:
1. To introduce the fundamental concepts of c language , program, tools ,flowcharts ,algorithms
2. To introduce various looping and decision making statement , io statements, arrays .
3. To introduce the functions and its types, structure and union.
4. To familiarize various Storage classes, dynamic memory mgmt.
5. To introduce the concepts of pointers and files.

Course outcomes: At the end of course students will be able:
1. Understand the fundamental concepts of c language, program, tools flowcharts, algorithms
2. To Use various looping and decision making statement , io statements, arrays .
3. To Use the functions and its types , structure and union.
4. To Select Storage classes, dynamic memory mgmt.
5. To understand the concepts of pointers and files

Unit – I: (12 Hours)
C Language Fundamentals: History, characteristics of C, Keywords, Constants, Variables, Data types, Operators and Expressions, Structure of C Program, Language Interpreter – Compiling your first Program, Running your Program, the Printf and Scanf functions.

Unit – II: (12 Hours)
Decision Making: The If Statement, the If Else Statement, Nested If Statements, the Else if Construct, the Switch Statement, Boolean Variables, The conditional Operator.
Programming Loop: The For Statement, Relational Operators, Nested for Loops, The While Statement, the Do Statement, The Break Statement, The Continue Statement.

Unit – III: (12 Hours)
Working with Arrays: Defining an Array, Initializing Arrays, Character Arrays, The constant Qualifier, Multi-dimensionalArrays.**Workingwith Functions:** Defining a function, Argument and

Local Variables, Returning Function Results, Function Calling, Declaring return Types and Argument types, Function and Arrays, Recursive Functions, Storage classes.

Unit – IV: (12 Hours)

Working with Structures: Defining Structures, Functions and Structures, Initializing Structures, Array of Structure.**Pointers:**Defining a Pointer Variable, using Pointers in Expressions, Pointers and Fucntions.**Working with Data files:**Input and Output Operations in C: Character I / O formatted I / O – Input and Output operations with Files, Special functions for working with Files.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

Prescribed Books:1.Programming with C by E Balaguruswami**Reference Books:**1.Programming using C by Byron Gottfired T M H 2.Let us C by Y Kanetkar.

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Anwarul Uloom College (Autonomous)

New Mallepally, Hyderabad, Affiliated to Osmania University
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Faculty of Science
Department of C S E
B. Sc. (C S E) 1st Year – Semester – I
(2021 – 22)
(As per C B C S)
Programming in C Lab
Paper Code 7144 P

Total No. of Hours: 24 Duration of Examination: 2 Hours
Max. Marks: 25 No. of Credits: 1

Course objectives: The objective of this course is:

1. To write programs for solving real world problems using c.
2. To introduce use of various decision making statements.
3. To write programs using arrays .
4. To write programs using structures
5. To write real world applications using c

Course outcomes: At the end of course students will be able:

1. To write programs for solving real world problems using c language
2. To write program using decision statements.
3. To write programs for sorting and searching and matrix operations using array.
4. To use structures in real time applications.
5. To use c language in real world applications.

1. Program for (i)Sum of factors of a number(ii)Sum of digits of a number

2. Program to check whether a given is (i)Prime Number or not (ii)Perfect Number or not (iii)Armstrong Number or not

3. Program using recursion for (i)Factorial of a given number (ii)Fibonacci series

4. Program for roots of a Quadratic equation
(i)Program using functions(ii)With return value (iii)With Parameters(iv)Without parameters

5. Program to find largest / smallest of a n numbers by using Arrays

6. Program for sorting an Array in two methods
- i) Bubble Sort
- ii) Selection Sort

7. Program for Matrix addition and Subtraction

8. Program for two String
- i) Comparison of two String
- ii) Concatenation to two Strings
- iii) Length of a String

9. Program to create a File to store and update employee records. The Employee record consists of ENO, ENAME, DEPATNO. DEPTNAME, BASICSALARY, HRA, DA, DEDUCTIONS, TOTALSALARY and NETSALARY

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Anwarul Uloom College (Autonomous)
New Mallepally, Hyderabad, Affiliated to Osmania University
(Re-Accredited with NAAC with A – Grade)

Faculty of Science

Department of C S E

B. Sc. (C S E) 1st Year – Semester – I

(2021 – 22)

(As per C B C S)

Ability Enhancement Compulsory Course Syllabus – I

Environmental Studies

Paper code A7145

Hours per Week: 2 Hours — Duration of Examination: 2 Hours
Max. / Min. Marks: 50 / 20 — No. of Credits: 2

Unit – I:Ecosystem, Biodiversity and Natural Resources:

1. Definition, scope and importance of Environmental studies
2. Structure of Eco-system – Abiotic and Biotic components, producers, consumers, Decomposers, Food chain, Food webs, Ecological pyramids
3. Functions If Eco-systems: Energy flow in Eco-system (Single channel energy flow model)
4. Definition of Biodiversity, Genetics, Species and Eco-system diversity, Hotspots of Biodiversity, Threats to Biodiversity, Conservation of Biodiversity (In-situ and Ex-situ)
5. Renewable and Non – Renewable resources, brief account of Forests, Mineral and Energy (Solar Energy and Geothermal Energy) resources.
6. Water conservation: Rain water harvesting and Water shed management

Unit – II:Environmental Pollution, Global Issues and Legislation

1. Causes, effects and control measures of Air Pollution, Water Pollution
2. Solid Waste management
3. Global warming and Ozone layer depletion
4. Ill effects of Fire works

5. Disaster management – Floods, earthquakes and Cyclones
6. Environmental legislation
7. Wild life Protection Act, Forest Act, Water Act, Air Act
8. Human Rights
9. Women and Child welfare
10. Role of Information Technology in Environment and Human health

Field Study:

- Pond Eco-system
- Forest Eco-system

References:

1. Environmental study from crisis to cure by R Rajagopalan, 3rd Edition, Oxford University Press
2. Text Book of Environmental Studies for Under Graduate course, 2nd Edition by Erach Bharucha
3. A Text Book of Environmental Studies by Dr. D K Asthana & Dr. Meera Aschana

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Faculty of Science
Department of C S E
B. Sc. (C S E) 1st Year – Semester – II
(2021 – 22)
(As per C B C S)
English
Paper Code 0206

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Unit I: (12 Hours)

SHORT FICTION: "A Visit of Charity" by Eudora Welty— PRONUNCIATION: plosives GRAMMAR: non-finite verbs— VOCABULARY: simile and metaphor— SPELLING: use of 'ie' and 'ei'— PUNCTUATION: semicolon— CONVERSATION: asking for advice/information— READING: Hyderabad city: the heart of Telangana— WRITING: note taking and note making— SOFT SKILLS: time management— VALUES: "Time and tide wait for no one"

Unit II: (12 Hours)

PROSE: "Benaras" by Aldous Huxley— PRONUNCIATION n: fricatives— GRAMMAR: adjective— VOCABULARY: oxymoron and hyperbole— SPELLING: use of 'able' and 'ible'— PUNCTUATION: colon and long dash— CONVERSATION: making/accepting/refusing a request— READING: Burrakatha— WRITING: informal letter— SOFT SKILLS: leadership— VALUES: "The pen is mightier than the sword"

Unit III (12 Hours)

POETRY: "The Sun is Warm" by P.B Shelley— PRONUNCIATION: affricates and nasals— GRAMMAR: articles— VOCABULARY: portmanteau words, loan words— SPELLING: use of '-ic', '-ive', '-ity', '-al' '-ance', '-ence'— PUNCTUATION: hyphen and long dash — CONVERSATION: Conducting a meeting/seeking opinion of team members— READING: Cultural identity of Telangana— WRITING: formal letter— SOFT SKILLS: stress management— VALUES: "Practice makes one perfect"

Unit IV(12 Hours)

DRAMA: An extract of Act II, Sc 3 from Julius Caeser by Shakespeare— PRONUNCIATION: Lateral, frictionless continuants, semi vowels—GRAMMAR: adverb— VOCABULARY: palindromes— SPELLING: changes of spelling from noun-verb-adjective-adverb— PUNCTUATION: inverted commas— CONVERSATION: Appearing for a job interview/conducting a job interview— READING: Handicrafts of Telangana— WRITING: business letter— SOFT SKILLS: etiquette and grooming— VALUES: "Necessity is the mother of invention"

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

Prescribed Text Book for Semesters I and II :

Title: English Made Easy published by Orient Blackswan

Editors:Prof. E. Suresh Kumar, Prof.Sumita Roy andProf. A. Karunaker.

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Faculty of Science
Department of C S E
B. Sc. (C S E) 1st Year – Semester – II
(2021 – 22)
(As per C B C S)
Mathematics – II
Paper Code 7246

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Course objectives: The objective of this course is to introduce:

1. Basics of matrices, complex numbers, and differential calculus.
2. The concepts of The Bisection false position, the Iteration & Newton – Raphson method
3. Taylor's series, Picord's methodn, Euler's method,Rung – Kutta methods
4. Eigen values & vectors,Cayley – Hamilton theorem,Inverse and powers of a matrix by Cayley
5. The problems fourier series ,even & odd functions, period continuation Half range Fourier Sine & Cosine expansions.

Course outcomes: At the end of course students will be able:

1. To recall and remember basics of matrices, complex numbers, and differential calculus.
2. To understand the Bisection false position, the Iteration Newton – Raphson method
3.To apply solution by Taylor's series, Picord's, Euler's method,Rung – Kutta methods
4. To analyze Eigen values & vectors,Cayley – Hamilton theorem, Inverse & powers of a matrix.
5. To solve and evaluate the problems Fourier series ,even & odd functions, period continuation Half range Fourier Sine and Cosine expansions.

Unit – I: (12 Hours)

Solution of Algebraic and Transcendental Equation: Introduction – The Bisection Method – The method of False position – The Iteration method – Newton – Raphson method.

Interpolation: Introduction – Errors in Polynomials Interpolation – Finite differences – Forward Difference – Backward differences – Central Differences – Symbolic relations and Separation of formulae – Gauss Central difference formulae – Interpolation with unevenly spaced points – Language's Interpolation formulae.

Unit – II: (12 Hours)

Numerical solution of Ordinary differential equations – solution by Taylor's series, Picord's method of Successive approximation – Euler's method – Runga – Kutta methods – Predictor – Corrector methods – Adams – Moulton method – Milnes method.

Unit – III: (12 Hours)

Matrices and linear systems of equations: Elementary row transformation – Rank – Echelon form, Normal form – Solution of linear systems – Direct methods – L U decomposition – L U decomposition from Gauss Elimination – Solution of Tri diagonal systems – solution of linear systems.

Eigen values, Eigen vectors – properties – Cayley – Hamilton theorem – Inverse and powers of a matrix by Cayley – Hamilton theorem – Diagonalization of Matrix – calculation of powers of Matrix – modal and spectral matrices.

Unit – IV: (12 Hours)

Fourier series: Determination of Fourier coefficient – Fourier series – even and odd functions – Fourier series in an arbitrary interval - even and odd period continuation – Half range Fourier Sine and Cosine expansions. Fourier integral theorem (only statement) – Fourier Sine and Cosine integrals, Fourier transform – Fourier Sine and Cosine transforms – properties – inverse transform – Finite Fourier transform.

Z – transform inverse Z – transform – properties – Dampling rule – Shifting rule – Initial and final value theorems. Convolution theorem – Solution of difference equation by Z – transforms.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

References:

1. A Text Book of Engineering Mathematics, Volume – II, T K V Iyenger, B Krishna Gandhi and others, S Chand & Co., New Delhi
2. Engineering Mathematics by B V Ramana, Tata McGraw Hill

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Faculty of Science
Department of C S E
B. Sc. (C S E) 1st Year – Semester – II
(2021 – 22)
(As per C B C S)
Physics
Paper Code 7247

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Course objectives: The objective of this course is to introduce :

1. Different types of matter depending on nature chemical bonds and their properties
2. Concept of wave function, physical significance and its applications to quantum mechanical problems.
3. Concepts of semiconductor physics
4. The idea of superconductivity and importance in advancement of technologies
5. Principle, properties and applications of Lasers and optical fibres

Course outcomes: At the end of course students will be able:

1: To analyze the crystal structures by applying crystallographic parameters.
2: To apply concepts learnt in Quantum mechanics to one dimensional problems
3: To write down the concepts related to solid state physics and material science.
4: To understand application of Lasers in Medicine, Industry etc.,
5: To understand applications of optical fibres in Medicine and Sensors.

Unit – I: (12 Hours)

Bonding in Solids:

Introduction - Types of Bonding, Ionic bond, Covalent bond, Metallic bond, Cohesive energy, calculation of Cohesive Energy.

Crystal Structure:

Introduction – Space Lattices, Basis, Unit cell, Lattice parameter, Crystal systems, Bravais Lattices, Structure and Packing fractions of Simple, Cubic, Body Centered Cubic, Face Centered Cubic Crystals, Structures of Diamond, ZnS, NaCl, CsCl.

Unit – II: (12 Hours)

Principles of Quantum Mechanics:

Waves and Particles, Planck's Quantum theory, de Broglie Hypothesis, Matter waves, Davison and Germer experiment, Schrodinger's Time independent Wave equation, Physical significance of the Wave function, Particle in one dimensional potential box.

Electron theory of Metals:

Classical free Electron theory, Mean free path, Relaxation time and drift velocity, Fermi – Dirac distribution (descriptive) Quantum free electron theory, sources of electrical resistance, Kronig – Penney model (qualitative treatment), origin of energy band formation in solids – concept of effective mass.

Unit – III: (12 Hours)

Semi – Conductors:

Introduction, Intrinsic Semi-conductors and Carrier concentration, Equation for conductivity, Extrinsic Semi-conductors and carrier concentration, drift and diffusion, Einstein's equation, Hall effect.

Super Conductivity: General properties, Meissner effect, Penetration depth, Type I and Type II Super conductors, Flux quantization, Josephson effect, B C S theory. Applications of Super conductors.

Unit – IV: (12 Hours)

Laser: Introduction, characteristics of Lasers, Spontaneous and Stimulated Emission of Radiation, Einstein's coefficients, Ruby Laser, He – Ne Laser Semi-conductor Laser, Applications of Laser in Industry, Scientific and Medical fields.

Fiber Optics: Introduction, principle of Optical fiber, Acceptance angle and Acceptance cone. Numerical aperture, Step – index fiber and transmission of signal in S I Fiber, Advantages of Optical fibers in Communication, Applications of Optical fibers in Medicine and Sensors.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

References:

1. Applied Physics by Dr. M Chandra Shekar and Dr. P Appala Naidu
2. Solid State Physics by P K Palanisamy
3. Engineering Physics by R K Gaur and S L Gupta

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Faculty of Science

Department of C S E

B. Sc. (C S E) 1st Year – Semester –II

(2021 – 22)

(As per C B C S)

Physics Lab

Paper Code 7247 P

Total No. of Hours: 24 Duration of Examination: 2 Hours
Max. Marks: 25 No. of Credits: 1

1. Study of a Compound pendulum. Determination of g and k
2. Study of damping of an Oscillating disc in Air and Water logarithmic decrement
3. Study of Oscillations under Bifilar Suspension verification of Perpendicular axis Theorem
4. Study of Oscillation of a mass under different combination of springs.
5. Young's Modulus (Y) by uniform bending (or) non – uniform bending
6. Rigidity Modulus (η) by Torsion Pendulum
7. Moment of Inertia of a Fly Wheel
8. Measurement of Errors – Simple Pendulum
9. Determination of frequency of a Bar / Tuning Form – Melde's experiment
10. Observation of Lissajour's figures using C R O

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Faculty of Science
Department of C S E
B. Sc. (C S E) 1st Year – Semester – II
(2021 – 22)
(As per C B C S)
Electronic Devices & Circuits
Paper Code 7248

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Course objectives: The objective of this course is to:

1. Outline the operation of PN junction diode and its characteristics.
2. Illustrate the operation of Bipolar Junction Transistor and its characteristics.
3. Demonstrate the operation of JFET and MOSFET and their characteristics.
4. Introduce extend the operation of semiconductor devices.
5. Introduce the feedback amplifier Concept, classification, characteristics ,feedback effect.

Course outcomes: At the end of course students will be able:

1. To describe the behaviour and purpose of various diodes.
2. To Understand and analyze bipolar junction transistor (BJT).
3. To demonstrate the switching & amplification of the semiconductor devices (FET).
4. To understand Extend the operation of semiconductor devices.
5. To understand the feedback amplifier Concept, classification, characteristics and effects.

Unit – I: (12 Hours)

C R O and Junction Diode Characteristics:

Principles of C R T, Applications of C R T, Voltage, Current and Frequency measurements, Review of Semi-conductors. Physics – n and p – type Semi-conductors. Mass Action Law, continuity Equation, Hall effect, Open circuited p – n junction. The p n junction as a rectifier (forward bias and reverse bias), the current components in p – n diode, Law of Junction, Diode equation, Energy band diagram of p – n diode, Volt – Ampere characteristics of p – n diode, Temperature dependence of VI Characteristics, Transition and Diffusion capacitances, Breakdown mechanism in Semi-conductors Diodes, Zener diode characteristics, Characteristics of Tunnel diode, Varacter Diode.

Unit – II: (12 Hours)

Rectifiers, Filters and Regulators: Half wave rectifier, ripple factor, full wave rectifier, Harmonic components in a rectifier circuit, Inductor filter, Capacitor filter, L – section filter, Section filter, Multiple L – Section and Multiple n – Section filter and comparison of various filter circuits in terms of ripple factors, Simple circuit of a regulator using Zener diode, Series and Sheet Voltage regulators.

Unit – III: (12 Hours)

Transistor and F E T characteristics:

Junction transistor, Transistor current components, Transistor as a amplifier, Transistor construction, Transistor alpha, input and output characteristics of Transistor in common base, common emitter and common collector configurations, Relation between Alpha and Beta, typical transistor junction voltage values, JFET characteristics, Small signal model of JFET, MOSFET characteristics (Enhancement and depletion mode), Symbol of MOSFET, Comparison of Transistors.

Bias and Stabilization:

B J T biasing, D C equivalent model, criteria for fixing Operating point methods of Bias stabilization, Thermal run away, Thermal stability, comparison of B J T, JFET and MOSFET devices.

Unit – IV: (12 Hours)

Amplifiers:

Small signal low frequency transistor amplifier circuits: h – parameter representation of a transistor, Analysis of Single stage transistor amplifier using h – parameters. Voltage gain, current gain, input impedance and output impedance, FET and MOSFET small signal model.

Feedback Amplifiers:

Concept of Feedback, classification of Feedback amplifiers, General characteristics of negative Feedback amplifiers, Effect of Feedback on Amplifier characteristics, Simple problems.

Oscillators:

Condition for Oscillations, R C and L C type Oscillators, Crystal Oscillators, Quartz, Hartley and Colpitts Oscillators, R C – phase shift and Wien – bridge Oscillators.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

References:

1. Electronic Devices and Circuits – T F Bogart Jr. J S Beasley and G Rico, Pearson Education, 6th Edition, 2004
2. Principles of Electronic Circuits – S G F Burns and P R bond, Galgotia Publications, 2nd Edition, 1998
3. Microelectronics – Millmand and Grabel, Tata McGraw Hill, 1998

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Anwarul Uloom College (Autonomous)

New Mallepally, Hyderabad, Affiliated to Osmania University
(Re-Accredited with NAAC with A – Grade)

Faculty of Science

Department of C S E

B. Sc. (C S E) 1st Year – Semester – II

(2021 – 22)

(As per C B C S)

Electronic Devices & Circuits Lab

Paper Code 7248 P

Total No. of Hours: 24 Duration of Examination: 2 Hours
Max. Marks: 25 No. of Credits:

Course objectives: The objective of this course is :

1. To expose the characteristics of basic electronic devices
2. To expose the characteristics of Transistor
3. To expose the characteristics various types of Diodes
4. To introduce the various types of rectifiers.
5. To expose the characteristics FET and BJT

Course outcomes: At the end of course students will be able:

1. To understand the characteristics of basic electronic devices.
2. To understand the Characteristics of P-N diode, zener diode.
3. To understand the various types of rectifiers & amplifiers.
4. To understand the Characteristics of Transistor.
5. To understand FET and BJT uses

1. P – N Junction diode Characteristics
2. Zener diode characteristics and Zener diode as a Voltage regulator
3. Transistor Common – base Configuration characteristics
4. Transistor Common – emitter configuration characteristics
5. Half – wave rectifier with and without filter
6. Full – wave rectifier with and without filter
7. F E T characteristics
8. h – Parameter of C E configuration
9. Frequency response of C E Amplifier
10. Frequency response of Common source FET Amplifier
11. B J T characteristics

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Anwarul Uloom College (Autonomous)

New Mallepally, Hyderabad, Affiliated to Osmania University
(Re-Accredited with NAAC with A – Grade)

Faculty of Science

Department of C S E

B. Sc. (C S E) 1st Year – Semester – II

(2021 – 22)

(As per C B C S)

UNIX Programming

Paper Code 7249

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Course objectives: The objective of this course is:

1. To introduce UNIX file system, Utilities, vi editor ,file, process & disk handling commands
2. To introduces problem solving using shell scripts ,born shells, commands ,pipes, scripts & variables etc.
3. To familiarize the students to Low level file access and system calls.
4. To equip the students with Unix io, formatted commands.
5. To equip the students file and directory handling commands.

Course outcomes: At the end of course students will be able:

1. To understand the UNIX file system, Utilities commands for vi, file, process & disk handling commands .
2. To solve the problems using shell scripts, born shells, various commands ,pipes, scripts & variables etc.
3. To know the Low level file access and system calls.
4. To use Unix io commands ,formatted io commands and directory handling commands.
5. To use file and directory handling commands.

Unit – I: (12 Hours)

UNIX Utilities:

Introduction to UNIX file system, vi editor, file handling utilities, security by file permission, process utilities, disk utilities, Networking commands.

Unit – II: (12 Hours)

Problems solving approach in UNIX: Using single commands, using compound commands, shell scripts, C Programs, building own command, library of Programs.

Working with the Bourne Shell: Introduction to Shell, Shell responsibilities, pipes and input redirection, output redirection, shell variables, shell commands

Unit – III: (12 Hours)

UNIX Internals – 1:UNIX file structure, directories, Files and devices, system calls, library functions, low level file access, usage of open, create, read, write close, 1seek, stat, fstat.

Unit – IV: (12 Hours)

UNIX Internals – 2: The Standard I /O (fopen, fclose, fflush, fseek, fgetc, getchar, fputc, putchar, fgets, gets) formatted I / O stream errors, Streams and file descriptors, file and directory maintenance (chmod, chown, unlink, syslink, mkdir, chdir, getcwd), Directory handling system calls (opendir, readdir, closedir, rewinddir, seekdir, telldir.)

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

References:

1. Unix the Ultimate guide by Sumitabha Das, T M H
2. Unix Shell Programming by Y P Kanetkar
3. Advanced Internals the new frontiers by U Vahalia, Pearson Education

Anwarul Uloom College (Autonomous)

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Faculty of Science

Department of C S E

B. Sc. (C S E) 1st Year – Semester – II

(2021 – 22)

(As per C B C S)

UNIX Programming Lab

Paper Code 7249 P

Total No. of Hours: 24 Duration of Examination: 2 Hours
Max. Marks: 25 No. of Credits: 1

Course objectives: The objective of this course is:

1. To write programs for solving real world problems using shell scripts.
2. To Familiar with vi editor commands.
3. To introduce Unix shell commands.
4. To write programs using system calls .
5. To introduce grep and other pattern matching commands

Course outcomes: At the end of course students will be able:

1. To write programs for solving real world problems using shell scripts.
2. To work with vi editor commands.
3. To use Unix shell commands.
4. To write programs using system calls.
5. To use pattern matching commands.

1. Write a Program to count the number of characters in a given string.
2. Write a Program to check whether given string is palindrome or not.
3. Write a Program to find whether a given year is leap year or not.
4. Write a Program to check whether a given number is even or not.
5. Write a Program to find factorial of a given number.
6. Write a Program to print String in the reverse order.
7. Write a Program to count the number of vowels in a given String.
8. Write a Program to print all prime numbers between m and n (m<n).
9. Write a Program to check whether a given String is Palindrome or not.
10. Write a Shell Script to assign a file permission to the given file using
11. To compress a file using gzip and pack commands
12. Write a Menu driven Shell script to implement the following UNIX commands
13. To find a given pattern in a list of files of current directory using grep and fgrep commands
14. Write a Shell script to create two directories and store five files in one directory using the related commands and to transfer all the files to another directory.

15. Write a script to accept a file name and display whether it exits or not. It is exists, then give the details of its attributes like access permission, its size etc.

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Anwarul Uloom College (Autonomous)
New Mallepally, Hyderabad, Affiliated to Osmania University
(Re-Accredited with NAAC with A – Grade)

Faculty of Science
Department of C S E
B. Sc. (C S E) 1st Year – Semester – II
(2021 – 22) (As per CBCS)
BASIC COMPUTER SKILLS

Max. Marks: 50 No. of Credits: 2 Hrs/Week: 02 No. of Hours: 30

Objective: to impart a basic level understanding of working of a computer and its usage.

UNIT I: UNDERSTANDING OF COMPUTER AND WORD PROCESSING: Knowing computer: What is Computer, Basic Applications of Computer; Components of Computer System, Central Processing Unit (CPU), VDU, Keyboard and Mouse, Other input/output Devices, Computer Memory, Concepts of Hardware and Software; Concept of Computing, Data and Information; Applications of IECT; Connecting keyboard, mouse, monitor and printer to CPU and checking power supply. Operating Computer using GUI Based Operating System: What is an Operating System; Basics of Popular Operating Systems; The User Interface, Using Mouse; Using right Button of the Mouse and Moving Icons on the screen, Use of Common Icons, Status Bar, Using Menu and Menu-selection, Running an Application, Viewing of File, Folders and Directories, Creating and Renaming of files and folders, Opening and closing of different Windows; Using help; Creating Short cuts, Basics of O.SSetup; Common utilities. Understanding Word Processing: Word Processing Basics; Opening and Closing of documents; Text creation and Manipulation; Formatting of text; Table handling; Spell check, language setting and thesaurus; Printing of word document.

UNIT II: SPREAD SHEET, PRESENTATION SOFTWARE & INTRODUCTION TO INTERNET, WWW AND WEB BROWSERS: Using Spread Sheet: Basics of Spreadsheet; Manipulation of cells; Formulas and Functions; Editing of Spread Sheet, printing of Spread Sheet. Basics of presentation software: Creating Presentation; Preparation and Presentation of Slides; Slide Show; Taking printouts of presentation / handouts. Introduction to Internet, WWW and Web Browsers: Introduction to Internet: Basic of Computer networks; LAN, WAN; Concept of Internet; Applications of Internet; connecting to internet; What is ISP; Knowing the Internet; Basics of internet connectivity related troubleshooting. World Wide Web: Search Engines; Understanding URL; Domain name; IP Address; Using e-governance website. Web Browsing: Software, Communications and collaboration: Basics of electronic mail; Getting an email account; Sending

and receiving emails; Accessing sent emails; Using Emails; Document collaboration; Instant Messaging; Netiquettes.

SUGGESTED READINGS: 1. Introduction to Computers, Peter Norton, Mc GrawHill , 2012. 2. Using Information Technology, Brian K williams, StaceyC.Sawyer, Tata Mc GrawHill. Web Resources: 1. https://online.stanford.edu/courses/soe-ycscs101-sp-computer-science101 2.https://www.extension.harvard.edu/open-learning-initiative/intensiveintroduction- computer-science..

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Faculty of Science
Department of C S E
B. Sc. (C S E) 2nd Year – Semester – III
(2021 – 22)
(As per C B C S)
English – III
Paper Code 0306

Total No. of Hours: 48 (Hours / Week): 4 — Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 — No. of Credits: 4

Unit I

1) Poem: Charlotte Brontë "Life" 2) Short Story: Rabindranath Tagore "A Wrong Man in Workers' Paradise"

3) Vocabulary: Synonyms, Antonyms

4) Grammar: Prepositions (including Prepositional Phrases)

Unit II

1) Poem: Kamala Das "Punishment in Kindergarten"

2) Essay: RK Narayan "Toasted English"

3) Vocabulary: British/American English Common Words

4) Grammar: Voice

Unit III

1) Poem: Langston Hughes "As I Grew Older"

2) Speech: BR Ambedkar "Grammar of Anarchy" (Excerpt)

3) Vocabulary: Phrasal Verbs

4) Grammar: Concord

Unit IV

Writing-I (Essay Writing)

1) Discursive Essay

2) Argumentative Essay

3) Vocabulary: Idioms

4) Grammar: Connectives

Writing-II (Report Writing)

1) Business Reports

2) Media Reports

3) Vocabulary: Situational Vocabulary Technical Vocabulary (Business, Media)

4) Grammar: Reported Speech (Including Reporting Verbs)

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

Prescribed Textbook for Semesters III & IV: English in Use. Eds. T Vijay Kumar, K DurgaBhavani, YL Srinivas. Published by Macmillan.

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Faculty of Science
Department of C S E
B. Sc. (C S E) 2nd Year
(2021 – 22)
(As per C B C S)
III – Semester
Mathematics – III
Paper Code 7351

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Course objectives: The objective of this course is to in introduce:

1. Gamma function and beta function and their Recurrence relations, complex integration
2. Finite and Infinite Fourier Transforms and applications.
3. Concept of analytic function, C-R equations and its uses.
4. Cauchy's theorem and its uses in complex integration. Taylor's and Laurent's series in complex form.
5. Learn about Cauchy Residues theorem and contour integrations.

Course outcomes: At the end of course students will be able:

1. To solve Gamma function and beta function and their Recurrence relations, complex integration
2. To gain knowledge of Finite and Infinite Fourier Transforms and applications.
3. Understand the concept of analytic function, C-R equations and its uses.
4. To use about Cauchy's theorem & its uses in complex integration. Taylor's & Laurent's series in complex form.
5. To know about Cauchy Residues theorem and contour integrations.

Unit – I: (12 Hours)

Special Functions:

Gamma and Beta functions – their properties – Evaluation of Improper integrals, Legendre's polynomials – General solution of Legendre's – Properties – Rodrigue's formulae – Recurrence relations – Orthogonality – Generating function, Trignometric expansions involving Bessel functions.

Unit – II: (12 Hours)

Complex Integration:

Concept s of limit Continuity, Differentiability, Analyticlty, Cauchy – Reimann conditions, Harmonic functions – Milne- Thomson method, Line Integral – Evaluation along path and by indefinite integration – Cauchy's integral theorem – Cauchy's integral formula – Generalized integral formula.

Unit – III: (12 Hours)

Power Series Expansion of Complex functions and Contour Integration:

Radius of convergence – Expansion in Taylor's series, Maclaurin's series and Laurent series, singular point – Isolated singular point – pole of order m – essential singularity; Residue – Evaluation of residue by formula and by Laurent series – Residue theorem. Evaluation of integrals of the type:

- Improper real integrals
- Integrals by indentation

Unit – IV: (12 Hours)

Conformal Mapping:

Transformation of z – plane to w – plane by a function, Conformational Transformation. Standard transformation: Translation, rotation, inversion, Transformation by z e^z, ln z, z^2, z^n (n positive integer) Sin z, Cos z, z + a /z and Bilinear transformation – fixed point – cross ration – properties – invariance of circles and cross ration – determination by bilinear transformation when mapping of a given points.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

References:

1. Advanced Engineering Mathematics by Kreyszig, John Wiley and Sons
2. Engineering Mathematics – III, by Ahmed Waheeduddin and LalpatRai, Hitech Publications (2006)
3. Mathematics – III by P B BhaskarRao, S K V S Rama Chari, M bhojangaRao and others, B S Publications
4. Special functions by George K Andrews, Richard Askey, Ranjan Roy (2004)

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Faculty of Science
Department of C S E
B. Sc. (C S E) 2nd Year– Semester –III
(2021 – 22)
(As per C B C S)
Digital Logic Design
Paper Code 7352

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Course objectives: The objective of this course is:
1. To Identify and use Number Systems.
2. To learn about Basic Gates and Universal Gate.
3. To learn about Full and Half Adder using Gates.
4. To learn about Sequential Logic Circuits.
5. To learn about Register and Counters.

Course outcomes: At the end of course students will be able:
1. To recognize different types of number system related to computers.
2. To use Logic Gates and Universal Gates.
3. To construct half and full adder using gates.
4. To design and analyze Sequential Logic Circuits
5. To Gain Knowledge about Registers, Multiplexer and counters

Unit – I: (12 Hours)
Number System:
Binary Number System, Decimal to Binary Conversion and vice versa, Octal Number system, Binary to Octal and Octal to Binary conversion, Octal to Decimal conversion and vice versa. Hexadecimal system to Binary conversion and vice versa, Decimal to Hexadecimal and vice versa conversion.

Unit – II: (12 Hours)
Boolean Algebra and Logic Gates: Logic Gates, NOT, AND, OR, NAND, NOR, EX – OR, EX – NOR Gates, Basic theorems and properties of Boolean Algebra, de Morgan theorem.

Unit – III: (12 Hours)
Combination Logic Circuits: Half and Full Adder, Binary Parallel Adder. Sequential Logic Circuits:Flip – Flop, S R Latch, R – S Flip Flop, D Flip – Flop, J K Flip – Flop, Master Slave J K Flip Flop, Applications of J K Flip Flop.

Unit – IV: (12 Hours)

Register and Counters:

Registers, Shift Registers, Decoder, Encoder, Multiplexer, De Multiplexer, counters, Asynchronous Counters, Synchronous Counters, Programmable Counters.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

References:

1. Digital Principles and Applications by Malvino and Leach
2. Digital Fundamentals by Floyd
3. Digital Electronics by Gothmana

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Faculty of Science
Department of C S E
B. Sc. (C S E) 2nd Year – Semester – III
(2021 – 22)
(As per C B C S)
Digital Logic Design Lab
Paper Code 7352 P

Total No. of Hours: 24 Duration of Examination: 2 Hours
Max. Marks: 25 No. of Credits: 1

Course objectives: The objective of this course is:

1. To become familiar with basic logic gates and their functions.
2. To implement a Half and Full adder circuit.
3. To implement Registers, Multiplexer and counters
4. To implement use of mux, demux .
5. To learn Encoder and Decoder by implementing a counter using 7 segment display & keypad.

Course outcomes: At the end of course students will be able:

1. To use Logic Gates and Universal Gates
2. To design Full and Half Adder and Subtract or Using various Gates.
3. To design Shift Registers and Counters.
4. To get pulse generator for Output Broadband Connector and frequency.
5. To design Binary Static Switches.

1. Study of Basic Gates
2. Universal Gates
3. Study of Full and Half Adder and Subtractor using Gates
4. Study of Magnitude Comparator
5. Study of de Multiplexer
6. Implementation of Flip flop using NAND
7. Study of Shift Register Design and Counter
8. Pulse Generator width Selector
9. Pulse Generator Output Broadband Connector
10. Pulse Generator Frequency Selector
11. Signal Generator Frequency Multiplier
12. Sinusoidal / Triangular Wave Output Bread board Connector
13. Binary Static Switches (8 independent Channels)
14. Binary Static Switches Output Bread board Connector
15. Ground connection Bread board
16. Power connection Bread board
17. Prototyping Bread board

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Anwarul Uloom College (Autonomous)

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Faculty of Science

Department of C S E

B. Sc. (C S E) 2nd Year – Semester –III

(2021 – 22)

(As per C B C S)

Operating System

Paper Code 7353

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Course objectives: The objective of this course is:

1. To provide an introduction to operating system concepts (processes, threads, scheduling,)
2. To introduce Inter process communication.
3. To introduce synchronization, deadlocks.
4. To introduce memory management techniques.
5. To introduce file and directory structure and protection

Course outcomes: At the end of course students will be able:

1. To gain the knowledge of process thread and scheduling.
2. To understand the concepts of inter process communication.
3. To gain the knowledge of the deadlocks and it's handling.
4. To understand the various memory management techniques
5. To gain practical knowledge of file and directory structure and protection.

Unit – I: (12 Hours)

Introduction of Operating Systems: Computer System structure, Operating System structures, Process concept, Process Scheduling , Inter Process communication: C P U Scheduling, Real time Scheduling, Algorithm Evaluation, Multitasking, Multi Programming, Time Sharing, Buffering, Thread.

Unit – II: (12 Hours)

Process Synchronization: The Critical section problem synchronization Hardware, semaphores Classical problems of synchronization, critical regions, Monitors, Atomic Transaction **Dead lock:** System Model, Dead lock characterization, Methods of handling Deadlocks, Dead lock prevention, avoidance, detection, Recovery from Dead lock, combined approach to Dead lock handling.

Unit – III: (12 Hours)

Memory Management: Introduction, Logical versus physical address space, Swapping, continuous allocation, paging, segmentation virtual memory – Introduction, Demand Paging, Performance of Demand paging, page replacement Algorithm, Allocation of frames, Thrashing, Other consideration, Demand segmentation.

Unit – IV: (12 Hours)

File System Interface: File concept, Access methods, Directory structure and protection, File system implementation, File system structure, Allocation methods, free space, management, Directory implementation, Secondary storage structure, Disk structure, Disk Scheduling, Disk management, Swap – Space management.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

References:1.Operating System (2005) – Pearson Edition / P H I
2.Operating System Principles – Abraham Silberchatz, John Wiley

Anwarul Uloom College (Autonomous)

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(Re-Accredited with NAAC with A – Grade)

Faculty of Science

Department of C S E

B. Sc. (C S E) 2nd Year – Semester –III

(2021 – 22)

(As per C B C S)

Operating System Lab

Paper Code 7353 P

Total No. of Hours: 24 Duration of Examination: 2 Hours
Max. Marks: 25 No. of Credits: 1

Course objectives: The objective of this course is to introduce:

1. Dos and unix os commands.
2. Program for CPU scheduling algorithms.
3. Program for bankers algorithm for deadlock avoidance.
4. Program for memory management.
5. Program for FIFO page replacement algorithm

Course outcomes: At the end of course students will be able:

1. To use dos and unix os commands.
2. To write program using CPU scheduling algorithms.
3. To write program using bankers algorithm for deadlock avoidance.
4. To write program using memory management.
5. To write program using FIFO page replacement algorithm.

1. Introduction to Operating System and its functions
2. Internal D O S commands & External D O S commands.
3. Write about different types of Operating Systems
4. Explain about Windows Short cut Keys.
5. Simulate the Round Robin C P U Scheduling Algorithms
6. Simulate Multi Programming with Fixed Number of Task (M F T)
7. Simulate Bankers Algorithms for Dead lock Avoidance
8. Simulate F I F O page replacement Algorithms
9. Simulate Paging Techniques of Memory Management
10. Study of Basic Linux commands such as Is, dd, mkdir, rmdir, cp, mv, rm, passwd and cat.
11. Write a Shell Program to add two numbers
12. Write a Shell Program to find average of two numbers

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Faculty of Science
Department of C S E
B. Sc. (C S E) 2nd Year – Semester –III
(2021 – 22)
(As per C B C S)
OOP Through C++
Paper Code 7354

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Course objectives: The objective of this course is to Introduce**:**

1. Object Oriented Programming concepts using the C++ language
2. The principles of data abstraction, inheritance and polymorphism;
3. The functions and arrays in C++
4. The principles of virtual functions and polymorphism
5. Exception handling mechanism

Course outcomes: At the end of course students will be able:

1. To understand the OOP concepts.
2. To develop programs with reusability
3. To develop programs with array, functions and polymorphism.
4. To handle exceptions in programming
5. To develop applications for a range of problems using OOP programming techniques

Unit – I: (12 Hours)

Introduction to Object Oriented Programming: Basic concepts of Object Oriented Programming, Introduction to the C++ history, Keywords, Tokens,Variables&Constants, Data types, Operators.

Unit – II: (12 Hours)

C++ I / O statements and control structures (If, If-Else, Switch, for while and do-while loops). Functions – Prototyping, parameter passing by value and by reference, function overloading. Arrays – Single and Multi dimensional Pointers and reference Variables.

Unit – III: (12 Hours)

Classes and Objects – Data members, member functions, functions, Inline Function, overloading, nesting of member functions, private, public, protected and static data members and member functions. Arrays in a class, Arrays of objects, member allocation of objects, Objects as function arguments, friend function, Returning Objects.

Unit – IV: (12 Hours)

Constructors with default arguments, destructors. Operator Overloading , types of conversion.
Inheritance: Single, Multiple, Multi level, Hierarchical and hybrid inheritance.Types of classes: Base class, derived class, Virtual base class, abstract classes, constructor in derived class, member classes and nesting of classes.
Exceptional Handling: Try, catch, throw and finally statement.
Templates: Introduction, functions and classes.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

References:

1.C++ An Introduction to Programming by Jesse Liberty Jim Keogh, P H I
2.Object Oreinted Programming with C++ by E Balagurswami (T M H)
3.Programming with C++ by John Hubbard (Schaum's series) McGraw Hill

Faculty of Science
Department of C S E
B. Sc. (C S E) 2nd Year – Semester –III
(2021 – 22)
(As per C B C S)
OOP Through C++ Lab
Paper Code 7354 P

Total No. of Hours: 24 Duration of Examination: 2 Hours
Max. Marks: 25 No. of Credits: 1

Course objectives: The objective of this course is:

1. To introduce Object Oriented Programming concepts using the C++ language
2. To introduce the principles of data abstraction, inheritance and polymorphism;
3. To introduce the functions and arrays
4. To introduce exception handling & virtual functions
5. To introduce various applications using OOP concepts.

Course outcomes: At the end of course students will be able:

1. To analyze and solve the programs in C++ programs .
2. To develop programs with reusability in C ++
3. To Develop programs with array , functions and polymorphism.
4. To Develop programs to handle exceptions in programming
5. To Develop applications for a range of problems using OOP techniques

1. Write a CPP Program that contains a function to exchange values to two arguments (Swap).
2. Write a CPP Program to find the given number is a Armstrong number or not.
3. Write a CPP Program to demonstrate Switch Statement.
4. Write a CPP Program to demonstrate For, While and do While Statement.
5. Write a CPP Program to find the given String is Palindrome or not.
6. Write a CPP Program to find an element in one dimensional Array.
7. Write a CPP Program to find factorial of an integer using Recursion.
8. Write a CPP Program to subtract corresponding elements of two 2 D matrices using friend function. Create two classes each capable of storing one 2 D matrix.
9. Write a Program to find total and average marks of each student in class. Create a student class with student name, name, 6 subjects marks as its members and

initializes the details. Use friend class that access the details of student and calculate total average marks and print the results.

10. Write a Program to Generate Fibonacii series by using Constructor to initialize the Data Members.
11. Write a program for finding area of different geometric shapes (circle, Rectangle, cube).
12. Write a Program which prompts the user to enter a String and returns the length of the longest Sequence of identical consecutive characters within the String.
13. Write a Program to calculate gross and net pay of employee from basic salary. Create employee class which consists of employee name, emp_id, and basic salary as its data members. Calculate gross and net pay of the employee in the derived class.
14. Write a Program to add two matrices using Binary operator overloading
15. Write a Program to find transpose of a given matrix unary operator overloading.
16. Write a Program to concatenate one string to another.
17. Write a Program to copy contents of one file into another file.
18. Write a Program to count the no. of occurrences of a word to a given file.
19. Write a Program to search a Key element in a given set of elements using class template.
20. Write a Program to find average marks of the subjects of a student. Throw multiple exceptions and define multiple catch statements to handle division by zero as well as Array index out of bounds exceptions.

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Faculty of Science
Department of C S E
B. Sc. (C S E) 2nd Year – Semester –III
(2021 – 22)
(As per C B C S)
M – Commerce
Paper Code S7355
Skill Enhancement Compulsory Course – I (SECC – I)

Total No. of Hours: 24 (Hours / Week): 2 Duration of Examination: 2 Hours
Max. / Min. Marks: 50 No. of Credits: 2

Course objectives: The objective of this course is introduce:

1. What are the benefits of M-commerce.
2. What are the problems going to face by M-commerce.
3. How M-commerce can be grown.
4. The banking services of the consumers.
5. Business-to-consumer transactions conducted from a mobile devices.

Course outcomes: At the end of course students will be able:

1. To understand what are the benefits of M-commerce.
2. To know the problems are faced by M-commerce.
3. To understand how M-commerce can be grown.
4. To understand the banking services of the consumers.
5. To understand Business-to-consumer transactions conducted from mobile devices.

Unit – I: (06 Hours)

Traditional Commerce and E – Commerce. Potential benefits of E – Commerce – Internet and www – Role of www – Value chains – Types of E – Commerce, Computer Network, Packet Switched Networks – T C P / I P Protocol, Internet , Intranet and Extranet, Web Browsers – Web based Tools for E – Commerce, Data Encryption and Security.

Unit – II: (06 Hours)

Introduction to M – Commerce – Definition. Infrastructure and applications. Types of M – Commerce services – Technologies of Wireless Business – Benefits and Limitations, Mobile Marketing and Advertisement, Non – Internet applications in M – Commerce – Wireless / Wired Commerce comparisons.

Unit – III: (06 Hours)

A Framework for the study of Mobile Commerce – N T TDocomo's I – Mode Wireless devices for Mobile Commerce – Towards a Classification Framework for Mobil Location Based Services –

Wireless Personal and Local Area Networks – The Impact of Technology Advances on Strategy formulation in Mobile Communication Networks.

Unit – IV: (06 Hours)

The Ecology of Mobile Commerce – The Wireless Applications Protocol – Mobile Business Services – Mobile Portal – Mobile Data Technologies and Small Business Adoption and Diffusion – E – Commerce in the Automotive industry – Location – Based Services: Criteria for Adoption and Solution Deployment – The role of Mobile Advertising in Building a Brand – M – Commerce Business Models, Enterprise Enablement – Email and Messaging.

Text Books:

1. E Brian Mennecke, J Troy Strader, Mobile – Commerce: Technology Theory and Applications, Idea group Inc. IRM press 2003.
2. Ravi Kalakota, B Andrew Whinston, Frontiers of Electronic Commerce, Pearson Education 2003

References:

1. P J Louis – M – Commerce Crash Course, McGraw Hill Companies
2. Paul May, Mobile Commerce: Opportunities, Applications and Technologies of Wireless Business, Cambridge University Press, March 2001

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Faculty of Science

Department of C S E

B. Sc. (C S E) 2nd Year - Semester – IV

(2021 – 22)

(As per C B C S)

English

Paper Code 0406

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Unit – I: (12 Hours)

Poem	Tennyson "Flower"
Prose	Ruskin Bond "The Kite maker"
Vocabulary	Commonly Confused Words
Grammar	Determiners

Unit – II: (12 Hours)

Poem AK Ramanujan "Ecology"

Prose	Henry Hitchings "What's the Language of the Future? (Expert)
Vocabulary	Indianisms
Grammar	Relative Clauses

Unit – III: (12 Hours)

Poem	Roald Dhal "Television"
Prose	JK Rowling "The fringe benefits of failure, and the importance of imagination" (Excerpt)
Vocabulary	One-word substitutes
Grammar	Relative clauses

Unit – IV: (12 Hours)

Writing review Film review, Book review

Vocabulary	Technical vocabulary (Film, Literature)
Grammar	Conditionals
CV writing	Chronological CV, Functional CV
Paragraph	Writing
Vocabulary	Appropriacy
Grammar	Common Errors

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

Prescribed textbooks for semester III & IV:

English in Use; A Textbook for College students.Eds. T Vijay Kumar, K DurgaBhavani, Y L Srinivas. Macmillan, 2017

Faculty of Science
Department of C S E
B. Sc. (C S E) 2nd Year - Semester – IV
(2021 – 22)
(As per C B C S)
Probability & Statistics
Paper Code 7456

Total No. of Hours: 48 (Hours / Week): 4 — Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 — No. of Credits: 4

Course objectives: The objective of this course is:
1. To introduce of probability Also measures of central tendency
2. To introduce binomial, Poison and normal distributions and their applications in different engineering, science and social science fields etc.
3. To introduce sampling distribution and point and internal estimation using z and t.
4. To introduce Statistical model with different statistical techniques like chi square distribution.
5. To introduce the problems with correlation and regression analysis

Course outcomes: At the end of course students will be able:
1. To understand the problems of probability and measures of central tendency
2. To know about binomial, Poison, normal distributions and their applications in different engineering, science and social science fields etc.
3. To know about sampling distribution and point and internal estimation using z and t
4. To solve the statistical model with different statistical techniques like chi square distribution.
5. To understand the problems and solve them with correlation and regression analysis

Unit – I: (12 Hours)
Probability: Random Variables – Discrete and Continuous. Probability distribution, mass function / density function of Probability distribution. Mathematical Expectation, Moment about origin, Central Moments, Moment generating function of Probability distribution. Binomial, Poisson and Normal distribution and their properties. Moment generating functions of the above three distributions, and hence finding the mean and variance.

Unit – II: (12 Hours)
Sampling Distribution: Definitions of population, Sampling, Statistics parameter. Types of Sampling, Expected values of Sample mean and variance Sample distribution. Standard Error, Sampling distribution of mean and sampling distribution of Variance.
Estimation: Point Estimation – Internal Estimation – Bayesian Estimation.

Unit – III: (12 Hours)

Testing of Hypothesis: Test of Hypothesis – Null hypothesis, Alternate hypothesis – Mean and Proportion – Hypothesis concerning one and two properties. Test of Significance difference between sample mean and population mean, difference between means of two small samples, F – distribution and its properties. Test of Equality of two populations variance s. Chi – Square distribution, its properties. Chi – Square test of goodness of fit.

Unit – IV: (12 Hours)

Queuing theory: Structure of a Queuing system, Operating characteristics of Queuing system, Transient and Steady states, Terminology of Queuing systems. Arrival and Service processes – Pure Birth – Death process deterministic queuing models – M / M / 1 model of infinite queue, M / M / 1 model of finite queue.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

References:

1. Fundamentals of Mathematical Statistics – S C Gupta and V K Kapoor
2. Probability and Statistics – Ahmed Waheduddin and LalpatRai, Hitech Publications
3. Probability and Statistics – G S SBheshmaRao, Scitech Publications
4. Introduction to Probability and Statistics – William Mendenhall (2003)

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Faculty of Science
Department of C S E
B. Sc. (C S E) 2nd Year - Semester – IV
(2021 – 22)
(As per C B C S)
Micro Processor 8086 and Interfacing
Paper Code 7457

Total No. of Hours: 48 (Hours / Week): 4 Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 No. of Credits: 4

Course objectives: The objective of this course is:

1. Introduce the architecture of 8086 microprocessors.
2. Introduce microprocessors and microcontrollers
3. Introduce programs for microprocessor and microcontrollers
4. Introduce 8051 microcontroller concepts, architecture and programming
5. Introduce Peripherals of Micro Computer System.

Course outcomes: At the end of course students will be able:

1. To know about architecture of 8086 microprocessors.
2. To understand the basics of microprocessors and microcontrollers arch. & its functionalities.
3. To understanding machine language programming & interfacing techniques.
4. To design and develop microcontroller based real time applications using ALP.
5. Understand the concepts of ARM processor.

Unit – I: (12 Hours)

Computer Number Systems, Codes and Digital Devices: Computer Number Systems and Codes Arithmetic Operation on Binary, Hexa and BCD Numbers, Basic Digital Devices.

Unit – II: (12 Hours)

Computer, Micro Computers and Micro Processors: Types of Computers. How computers and Micro computers are used – An Example. Overview of Micro Computer structure and operation, Execution of a Three – instruction Program, Micro Processor Evolution and Types. The 8086 Micro Processor Family – Overview, 8086 Internal Architecture, Introduction to Programming the 8086..

Unit – III: (12 Hours)

8086 System Connections, Timing and Trouble Shooting: A Basic 8086 Micro computer system, Using a Logic Analyzer to observe Micro Processor Bus Signals, An Example Minimum – Mode system, the S D K - 86, Trouble Shooting a Simple 8086 – based Micro Computer.

8086 Interrupts & Interrupt Applications: 8086 Interrupts and interrupt responses, Hardware interrupt Applications and Software Interrupt Applications.

Unit – IV: (12 Hours)

Micro Computer System Peripherals: System – Level Keyboard interfacing, Micro Computer Displays, Computer Mice and Trackballs, Computer Vision, Magnetic Disk Data Storage, Printer mechanisms and Interfacing, Digital Video interactive.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

References:1.Micro Processor 8086 and Interfacing by Douglas V Hall T M H . 2.Advanced M P and Peripherals – A K Ray, K M Bhurchand 3.M P 8086 / 8088 – Avatar Singh and Triebel.

Anwarul Uloom College (Autonomous)

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Faculty of Science

Department of C S E

B. Sc. (C S E) 2nd Year - Semester – IV

(2021 – 22)

(As per C B C S)

Micro Processor 8086 & Interfacing LAB

Paper Code 7457 P

Total No. of Hours: 24 Duration of Examination: 2 Hours
Max. Marks: 25 No. of Credits: 1

Course objectives: The objective of this course is:

1. To introduce about Assemble Language Programming (ALP).
2. To write ALP for Arithmetic operation on 16 Bit Unsigned numbers
3. To write ALP for Sorting of an Array of Number
4. To write ALP for finding the median from the list of numbers and length of given String
5. To write ALP for displaying the Character on Led and Number on 7-Segment Display.

Course outcomes: At the end of course students will be:

1. Able to write ALP programs using Microsoft Macro Assembler 8.0 (*MASM*) tool.
2. Able to write ALP for addition ,subtraction, Multiplication and Division unsigned 16 bits nos.
3. Able to write ALP for arrays and for Rotating of Stepper Motor
4. Able to write ALP for median from list, length of string and Reversing of a given string..
5. Able to write ALP for displaying the Character on Led and Number on 7-Segment Display.

1. Introduction to M A S M
2. Arithmetic operations on 16 Bit Unsigned numbers
3. (i) Unsigned Division (ii) Sorting of an Array of Numbers
4. Finding the median from list of numbers
5. Finding the length of a given String
6. (i) Reversing of given String (ii) Verifying the Password
7. Inserting and Deletion of a String
8. Displaying the Character on Led Display
9. Displaying the Number on 7 – Segment Display
10. Serial Communication
11. (i) Rotating of Stepper Motor (ii) Signed Multiplication and Division

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Faculty of Science
Department of C S E
B. Sc. (C S E) 2nd Year - Semester – IV
(2021 – 22)
(As per C B C S)
Data Structure
Paper Code 7458

Total No. of Hours: 48 (Hours / Week): 4 — Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 — No. of Credits: 4

Course objectives: The objective of this course is:
1. To explore data structures such as stacks and queues.
2. To introduces various types of linked lists.
3. To introduces a variety of data structures such as tree, graphs
4. To introduces sorting algorithms
5. To introduces searching algorithms

Course outcomes: At the end of course students will be able:
1. To select the data structures (stack, queue etc) that model the problems in real world.
2. To use the linked list to model the information in a problem.
3. To know the use of tree and graph in applications.
4. To Implement sorting algorithms(bubble sort quick sort etc.)
5. To Implement searching algorithms(linear, binary search).
6. To assess efficiency trade-offs among different data structure implementations.

Unit – I: (12 Hours)
Data Structure: Data and Data items, Data types, concepts of Data Structure, Classification of Data Structures. Operations on Data Structures, Array, types of Arrays, Multi dimensional Arrays.
Sorting: Bubble, Selection and Insertion sort, quick sort, tree sort.

Unit – II: (12 Hours)
Linked Lists: Linked list concepts, Advantages, types of Linked lists, comparison between Array and Linked list, creating simple, Linked list, performing operations (Traversing, inserting, deleting) on Linked list, Creating Double Linked list, advantages, Operations on double Linked list, Creating Circular Linked list, operations on a Circular Linked list.

Unit – III: (12 Hours)

Stack and Queues: Representation of Stacks, conversion of Arithmetic expression, use of Stack in evaluating arithmetic expression, Representation of Queue, Linked list implementation of Queue, Applications of Queue, Representation of Circular Queues, D – Queues, Priority Queue.
Searching: Linear search and Binary search.

Unit – IV: (12 Hours)

Binary Tree: Tree Terminology, Binary Tree, complete Binary Tree, Binary Tree Traversal technique (Preorder, Inorder, Postorder), Array based representation of Binary Trees, Linked based representation of Binary Tree, Complete Binary Tree.

Graphs: Introduction, Representation of Graphs, Traversing a Graph, Breadth First Search and Traversal, Depth First Search and Traversal.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

Prescribed Books:

1. Data Structure by Shaum's outline series by T M H
2. Robert Lafore, Data Structure and Algorithms in Java, Second Edition, Pearson Education (2008)

References:

1. Adam Drozdek, Data Structure and Algorithms in Java, Second Edition, Cengage Learning (2008)
2. John R Hubbard, Anita Hurry, Data Structure with Java, Pearson Education (2008)
3. Samatha, Classic Data Structures, P H I (2008)

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Anwarul Uloom College (Autonomous)

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Faculty of Science

Department of C S E

B. Sc. (C S E) 2nd Year - Semester – IV

(2021 – 22)

(As per C B C S)

Data Structure LAB

Paper Code 7458 P

Total No. of Hours: 24 Duration of Examination: 2 Hours
Max. Marks: 25 No. of Credits: 1

Course objectives: The objective of this course is:

1. To introduces searching and sorting algorithms
2. To introduces linked list and its operations
3. To provides an understanding and programs on stacks and queues.
4. To introduces programs on graphs.
5. To introduces programs on trees.

Course outcomes: At the end of course students will be able:

1. To understand and implement searching and sorting algorithms
2. To understand and implement linked list and its operations
3. To develop programs for computing and real-life applications using stacks, queues.
4. To write programs using graphs.
5. To write programs using trees.

Implements following programs using C or C++

1. Program to implement Bubble Sort method.
2. Write a Program to search an element using Binary Search method.
3. Program to implement Selection Sort.
4. Program to Sort a list using insertion Sort method.
5. Program to create, insert, delete and display Operations on Single Linked list.
6. Program to create, insert, delete and display Operations on Double Linked list.
7. Program to create, insert, delete and display Operations on Circular Linked list.
8. Program to Implement PUSH and POP Operations on Stack using Array method
9. Program to Implement insert and delete Operations on Queue.
10. Program to Implement insert and delete Operations on Priority Queue.
11. Program to implement insert and delete Operations on Double Ended Queue.

12. Program to evaluate postfix expression by using Stack.

13. Program to construct Binary Search Tree and implement Tree Traversing Techniques.

14. Program to Implement Operations on Circular Queue.

15. Program to Implement a Graph.

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Anwarul Uloom College (Autonomous)

New Mallepally, Hyderabad, Affiliated to Osmania University
(Re-Accredited with NAAC with A – Grade)

Faculty of Science

Department of C S E

B. Sc. (C S E) 2nd Year - Semester – IV

(2021 – 22)

(As per C B C S)

Programming in Java

Paper Code 7459

Total No. of Hours: 48 (Hours / Week): 4 — Duration of Examination: 2 Hours
Max. / Min. Marks: 35 / 14 — No. of Credits: 4

Course objectives: The objective of this course is:

1.To explore the object oriented programming concepts.
2.To introduce java programming in solving problems.
3.To introduce the principles of inheritance and polymorphism
4.To introduce the implementation of packages and interfaces
5.To introduce the concepts of exception handling and multithreading.

Course outcomes: At the end of course students will be:

1.Able to solve real world problems using OOP techniques
2.Able to solve problems using java collection framework and I/o classes.
3.Able to develop multithreaded applications with synchronization.
4.Able to develop applications using packages and interface
5.Able to design programs using exception handling and multithreading.

Unit – I: (12 Hours)

History of Java, Java features. How Java differs from C and C++. Java and Internet, Java and World Wide Web – Web Browsers – Hardware and Software requirements – Java Environment.

Overview of Java Language: Simple Java Program – Java Program structure – Java Statements – Implementing a Java Program – Java Virtual Machine – Command Line Arguments.

Unit – II: (12 Hours)

Constant and Variables: Constants – Variables – Data types – Declaration of Variables – Giving Values to Variables – Symbolic Constants – Type Casting.

Operators and Expressions: Arithmetic Operators – Relational Operators – Logical Operators – Assignment Operators – Increment and decrement Operators – conditional Operators.

Decision Making and Branching: Decision making with if Statement – Simple if Statement – The ?: Operator.

Looping: The While Statement – The Do Statement – The For Statement – Jumps in Loops

Unit – III: (12 Hours)

Classes, Objects and Methods: Defining a class – fields declaration – methods Declaration – creating Objects – Accessing class members.- Constructors – Methods overloading – Static members – Nesting of methods.

Inheritance: Overriding methods – Final variables and methods – Final classes abstract methods and classes – Visibility control.

Array, Strings and Vectors: One dimensional Array – creating an Array – Two dimensional Array – String vectors – Wrappers classes – Enumerated type.

Unit – IV: (12 Hours)

Interfaces: Defining Interfaces – Extending Interfaces – Implementing Interfaces.

Packages: Java APT packages – Using system Packages – Naming convensions – creating packages.

Multithreading Programming: Creating Threads – Extending the Thread Class – Stoppind and Blocking a Thread – Life cycle of a Thread.

Exception Handling: Managing Errors and Exceptions – Types of Errors – Exceptions – Syntax of Exception Handling Code – Multiple Catch Statements – Using Finally Statement.

Note: Theory Exam (35 M + Internal Assessment (15 M) = Total 50 Marks

Prescribed Books:

1. E Balaguruswami, Programming with Java, A Primer, 3rd Edition, Tata McGraw Hill Company (2008) (Chapters 1 to 14)

References:

1. Core Java by Cay S Horstmann and Gary Cornell
2. Beginning in Java by Iver Horton, Wrox Publications

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Faculty of Science
Department of C S E
B. Sc. (C S E) 2nd Year - Semester – IV
(2021 – 22)
(As per C B C S)
JAVA Programming LAB
Paper Code 7459 P

Total No. of Hours: 24 Duration of Examination: 2 Hours
Max. Marks: 25 No. of Credits: 1

Course objectives: The objective of this course is:

1. To introduce java compiler and eclipse platform.
2. To write programs for solving real world problems using java collection frame work.
3. To write multithreaded programs.
4. To write programs for handle the exceptions.
5. To write programs to using packages.

Course outcomes: At the end of course students will be:

1. Familiar with java compiler and eclipse platform.
2. Able to write programs for solving real world problems using java collection frame work.
3. Able to write multithreaded programs.
4. Able to handle the exceptions in java programs.
5. Able to write programs using packages.

1. Write a Java Program to determine the sum of the following harmonic series for a given value of n. The series being 1+1 / 2+1/3+……1/n

2.Write a Program to perform the following Operations on Strings.

a) Find length of given String
b) Check whether one String is sub string of another String or not
c) Convert the String to Uppercase

3. write a Program to identify a duplicate value in a Vector.
4. Create two threads such that one of the thread print even nos. and another print odd nos. up to a given range.
5. Create a package called “Arithmetic” that contains methods to deal with all Arithmetic Operations.
6. Illustrate the method overriding in JAVA.
7. WAP to create an Array of integers and sort it in ascending / descending order.
8. WAP to demonstrate type casting.

9. WAP to test the Prime Number.

10. WAP to handle the exception using try and multiple catch block.

11. WAP to create the package to access members of a class.

12. WAP to demonstrate single and multi-level inheritance.

13. WAP to add and subtract matrices.

14. Write an Applet Program to insert the text at the specified position.

15. WAP to create an Applet and display it in a Web page.

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Faculty of Science
Department of C S E
B. Sc. (C S E) 2nd Year - Semester – IV
(As per C B C S) (2021 – 22)
Skill Enhancement Compulsory Course – II
Software Engineering
Paper Code S7460

Total No. of Hours: 24 (Hours / Week): 2 Duration of Examination: 2 Hours
Max. / Min. Marks: 50 No. of Credits: 2

Course objectives: The objective of this course is:

1. To Become successful professionals in the field with solid fundamental knowledge of software engineering
2. To utilize and exhibit strong communication and interpersonal skills, as well as professional and ethical principles when functioning as members and leaders of multi-disciplinary teams
3. To apply their foundations in software engineering to adapt to readily changing environments using the appropriate theory, principles and processes.
4. To provide an idea of using various process models in the software industry according to given circumstances.
5. To gain the knowledge of how Analysis, Design, Implementation, Testing and Maintenance processes are conducted in a software project.

Course outcomes: At the end of course students will be:

1. Able to work in one or more significant application domains
2. Able to work as an individual and as part of a multidisciplinary team to develop and deliver quality software
3. Demonstrate an understanding of and apply current theories, models, and techniques that provide a basis for the software lifecycle
4. Demonstrate an ability to use the techniques and tools necessary for engineering practice.
5. Able to decomposing the given problem into Analysis, Design, Implementation, Testing and Maintenance phases.

Unit – I: (06 Hours)

Software Process: Introduction to Software Engineering Paradigm, life cycle models (water fall, incremental, spiral, evolutionary, prototyping, Object Oriented) – System Engineering, computer based system, verification, validation, life cycle process, development process, system Engineering Hierarchy.

Unit – II: (06 Hours)

Software Requirement: Functional and non – functional, user system, requirement Engineering process, feasibility studies, elicitation, validation and management, software prototyping in the Software process, rapid prototyping techniques, user interface prototyping, Software document.

Analysis and modeling data, functional and behavioural models, structured analysis and data dictionary.

Unit – III: (06 Hours)

Design Concepts and Principles: Design process and concepts, modular design, design heuristic, design model and document, Architectural design, Software Architecture, data design, Architectural design, transform and transaction mapping, user interface design, user interface design principles. Real time systems, Real time Software design, System design, Real time executives, data acquisition system, monitoring and control system.

Unit – IV: (06 Hours)

Software Project Management: Measures and measurements, Software Complexity and Science measure, Size measure, data and logic structure measure, information flow measure. Estimations for Software Projects, Empirical Estimation Models, Project Scheduling.

Note: Theory Exam 50 Marks

Books Recommended:

1. Roger S Pressman, Software Engineering – A Practitioner's Approach, McGraw Hill
2. Ian Sommerville, Software Engineering, Pearson Education, Asia, 6th Edition 2006
3. Pankaj Jalote – An Integrated Approach to Software Engineering.

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Faculty of Science
Department of C S E
B. Sc. (C S E) 3rd Year– Semester – V
(2021 – 22)
(As per C B C S)
Computer Networks
Paper Code 7561

Total No. of Hours: 70 (Hours / Week): 5 Duration of Examination: 3 Hours
Max. / Min. Marks: 70 / 28 No. of Credits: 5

Course objectives: The objective of this course is:

1. To equip the students with overview & concepts of fundamentals of computer networks.
2. To familiarize the students with the standard models for the layered approach to communication between machines in a network.
3. To introduce various layers, functions of each layers.
4. To introduce the routing algorithms.
5. To introduce varies protocols in application layers.

Course outcomes: At the end of course students will be able:

1. To know of the basic computer network technology.
2. To gain the knowledge of the functions of each layer in the OSI and TCP/IP reference model.
3. To gain the knowledge in network design and implementation.
4. To obtain the skills of sub-netting and routing mechanisms.
5. Familiarity with the essential protocols of computer networks in application layer.

UNIT-I

Basic concepts: Components of data communication, standards and organizations, Computer network goals, Network Classification, Network Topologies; network protocol; layered network architecture; overview of OSI reference model; overview of TCP/IP protocol suite, Examples of Networks Novell Networks, Arpanet, Internet.

UNIT-II

Physical Layer and Data Link Layer: Transmission media copper, twisted pair wireless, switching and encoding asynchronous communications; Narrow band, broad band ISDN and ATM. Design issues, framing, error detection and correction, CRC, Elementary Protocol - stop and wait, Sliding Window, Slip, Data Link Layer in HDLC, Internet.

UNIT-III

Medium Access Sub Layer: ALOHA, MAC addresses, Carrier Sense Multiple Access, IEEE, 802.x Standard Ethernet, Wireless LANS, Bridges. **Routing:** Dynamic routing – Broadcast

routing, Rotary for mobility. Congestion Control Algorithms – General Principles of Congestion prevention policies. Internet Working: The Network Layer in the Internet and in ATM Networks.

UNIT-IV

Transport Layer and Application Layer: Transport Services, Connection management, TCP and UDP Protocols; ATM AAL Layer Protocol. Network Security, Domain Name System, SNMP, Electronic Mail, World Wide Web, Multimedia.

Note: Theory Exam (70 M + Internal Assessment (30 M) = Total 100 Marks

REFERENCES:

1. Data Communications and Networking – Behrouz A. Forouzan PHI
2. Computer Networks – Andrew S. Tanenbaum, PHI

Faculty of Science
Department of C S E
B. Sc. (C S E) 3rd Year– Semester – V
(2021 – 22)
(As per C B C S)
Compiler Construction
Paper Code 7562

Total No. of Hours: 70 (Hours / Week): 5 Duration of Examination: 3 Hours
Max. / Min. Marks: 70 / 28 No. of Credits: 5

Course objectives: The objective of this course is to:

1. Provide an understanding of the fundamental principles in compiler design and it phases.
2. Introduce finite state machine and the scanning process in compiler.
3. Introduce top down and bottom up parsing
4. Introduce the various optimization methods.
5. Learn the process of translating a modern high-level language to executable code required for compiler construction.

Course outcomes: At the end of course students will be able to:

1. Understand fundamentals of compiler and identify the relationships among different phases of the compiler.
2. Understand the application of finite state machines and scanning.
3. Understand the top down and bottom up parsing methods.
4. Understand the various tools for optimization.
5. Use modern tools and technologies for designing new compiler.

Unit – I:

Introduction: Compilers, The translation process, Data structures and issues in Compiler structure, Boot strapping.

Scanning: The Scanning process, Regular expression, Finite Automata, Regular expressions to DFA's use of LEX to generate Scanners.

Unit – II:

Context Free Grammars and Parsing: The Parsing process, Context free grammars, Parse Tree and Abstract Syntax trees. EBNF and Syntax diagrams and properties of CFLs.

Top Down Parsing: Recursive descent parsing, L L (1) parsing, first and follow sets, Recursive descent parser.

Unit – III:

Bottom up Parsing: Overview L R (O) items and L R (O) Parsing, S L R (1) Parsing, general LR (1) and LALR(1) Parsing, YACC and Error recovery in bottom – up Parsers.

Semantic Analysis: Attributes and attribute grammars, Algorithms for attribute computation, Symbol table, Data types and Type checking.

Unit – IV:

Run time Environments: Memory Organization during program execution, Fully Static Runtime Environments, Stack – based Runtime Environments, Dynamic Memory and Parameter Parsing mechanisms.

Code Generation: Intermediate code and data structures for code generation, Basic code generation techniques, Code generation of data structure references, Code generation of Control Statements and logical expressions, code optimization techniques.

Note: Theory Exam (70 M + Internal Assessment (30 M) = Total 100 Marks

Suggested Readings:

1. Kenneth C Louden – Compiler Construction, Principles and Practice, Thomson Learning Inc. 1997
2. Ravi SethiAho and Ullman J P – Compilers: Principles, Techniques and Tools, Addison Wesley Publishing Co. 1986
3. J P Tremblay and P S Sorenson – The Theory and Practice lof Compiler Writing, T M H, 1985

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Faculty of Science
Department of C S E
B. Sc. (C S E) 3rd Year– Semester – V
(2021 – 22)
(As per C B C S)
V– Semester
Object Oriented Analysis And Design
Paper Code 7563

Total No. of Hours: 70(Hours / Week): 5 Duration of Examination: 3 Hours
Max. / Min. Marks: 70 No. of Credits: 5

Course objectives: The objective of this course is to:

1. Explore Objects and Classes of the software system.
2. Introduce construct object model using object types, attributes, structures and associations.
3. Introduce Object-Oriented Methodologies ,Analyze Functional and Dynamic Modelling.
4. Introduce interaction diagrams
5. Introduce Use case Diagrams, Activity Diagrams .

Course outcomes: At the end of course students will be :

1. Able to analyze the problem and apply to real world problems.
2. Able to construct object-oriented system , modelling objects, relationships and interactions.
3. Able to discuss software design in an object-oriented manner.
4. Able to draw Interaction diagrams
5. Able to draw and analyse Use case Diagrams, Activity Diagrams.

UNIT – I : Introduction to UML : Importance of modelling, principles of modelling, object oriented modelling, conceptual model of the UML, Architecture, Software Development Life Cycle.

UNIT-II :Basic Structural Modelling : Classes, Relationships, common Mechanisms, and diagrams. Advanced Structural Modelling : Advanced classes, advanced relationships, Interfaces, Types and Roles, Packages.

UNIT-III: Class & Object Diagrams: Terms, concepts, modelling techniques for Class & Object Diagrams.

UNIT-IV : Basic Behavioral Modelling-I : Interactions, Interaction diagrams.
Basic Behavioral Modelling-II : Use cases, Use case Diagrams, Activity Diagrams.

Case Study: The Unified Library application.

Note: Theory Exam (70 M + Internal Assessment (30 M) = Total 100 Marks

Suggested Readings:

1. Grady Booch, James Rumbaugh, Ivar Jacobson : The Unified Modelling Language User Guide, Pearson Education.
2. Hans-Erik Eriksson, Magnus Penker, Brian Lyons, David Fado: UML 2 Toolkit, WILEY-Dreamtech India Pvt. Ltd.

REFERENCE BOOKS:

1. Meilir Page-Jones: Fundamentals of Object Oriented Design in UML, Pearson Education.
2. Pascal Roques: Modeling Software Systems Using UML2, WILEY- Dreamtech India Pvt. Ltd.
3. AtulKahate: Object Oriented Analysis & Design, The McGraw-Hill Companies.

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B. Sc. (C S E) 3rd Year– Semester – V
(2021 – 22)
(As per C B C S)
OOAD-LAB
Paper Code 7563 P

Total No. of Hours: 48 Duration of Examination: 2 Hours
Max. Marks: 50 No. of Credits: 2

Course objectives: The objective of this course is to introduce:

1. The Object-based view of Systems
2. Software specifications, analysis and design in solving complex problems.
3. The analysis and design the use case driven requirements for a particular system.
4. The model the event driven state of object and transform them into implementation specific layouts.
5. The subsystems, various components and collaborate them interchangeably.

Course outcomes: At the end of course students will be able:

1. Understand the object-based models for Systems.
2. Analyze and handle complex software design.
3. Analyze and design the use cases.
4. Understand abstract object-based views for generic software systems.
5. Deliver robust software components

a. Identify a software system that needs to be developed.
b. Document the Software Requirements Specification (SRS) for the identified system.
c. Identify use cases and develop the Use Case model.
d. Identify the conceptual classes and develop a Domain Model and also derive a Class Diagram from that.
e. Using the identified scenarios, find the interaction between objects and represent them using UML Sequence and Collaboration Diagrams
f. Draw relevant State Chart and Activity Diagrams for the same system. 7. Implement the system as per the detailed design
g. Test the software system for all the scenarios identified as per the use case diagram
h. Improve the reusability and maintainability of the software system by applying appropriate design patterns.
i. Implement the modified system and test it for various scenario
    1. case study of library mgmt.sys
    2. case study of student information system
    3. case study of exam registration system
    4. case study of online courses reservation system

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Faculty of Science
Department of C S E
B. Sc. (C S E) 3rd Year– Semester – V
(2021 – 22)
(As per C B C S)

Modern Data Base Management System

Paper Code 7564

Total No. of Hours: 70 (Hours / Week): 5 Duration of Examination: 3 Hours
Max. / Min. Marks: 70 / 28 No. of Credits: 5

Course objectives: The objective of this course is to introduce:

1. The basic concepts and the applications of database systems.
2. Data models, database design, relational model, relational algebra,
3. The basics of SQL and construct queries using SQL
4. The normalization techniques.
5. The storage structures & access, distributed database systems.

Course outcomes: At the end of course students will be able:

1. To Gain knowledge of fundamentals of DBMS and its uses,
2. To design logical database using data models.
3. To design Physical database and master in SQL commands
4. To apply the normal forms
5. To familiarity with database storage structures and access techniques

Unit – I:

Data Base Systems: Evolutions – File Oriented Systems Data Base models – Data base System Components – Data base systems in the Organization Data Sharing Strategic Data base Planning – Data base and Management Control – Risks and Costs and Data base Development.

Unit – II:

Data Base Design: Principles of Conceptual Data base Design Conceptual Data model Fundamental concept – Normalization Transforming a conceptual model to Relational model – Relational Data Base implementation – Relational Algebra and Calculus.

Unit – III:

S Q L Schema and Tables: Definition Data Manipulation – View Definition – Graphical Query Language - Client Serve Data base Defining Data base Tables and Server Data Manipulation and Programming Developing Client Applications.

Unit – IV:

Physical Data Base Systems: Storage Media – Disk Performing Factors – File Organization Implementation Logical Relationships Mapping Logical Data Structures to Physical Structures – Secondary Keys Access – Data base Administration and Integrity – Data base Security Data base Recovery. Distributed Data base Systems – Design Query Procession – Data Implementation Information Needs – D B M S functions and Capabilities – Classifying D B M S features requirement – Evaluation models – Implementation issues – Case studies of RDBMS package such as ORACLE / MS – SQL Server.

Note: Theory Exam (70 M + Internal Assessment (30 M) = Total 100 Marks

Suggested Readings: 1. Introduction to Data base Systems by C J Data Pearson Education 2.DBMS by Almasri Navrate, Pearson Education 3.DBMS by Mathew Leon, Leon Vikas

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Anwarul Uloom College (Autonomous)

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Faculty of Science

Department of C S E

B. Sc. (C S E) 3rd Year– Semester – V

(2021 – 22)

(As per C B C S)

MDBMS LAB

Paper Code 7564 P

Total No. of Hours: 48 Duration of Examination: 2 Hours
Max. Marks: 50 No. of Credits: 2

Course objectives: The objective of this course is to:

1. Introduce the basics of SQL Queries.
2. Introduce DDL , DML commands
3. Introduce Construction of queries using SQL
4. Introduce Database design and ER data model,.
5. Introduce PL sql programs.

Course outcomes: At the end of course students will be able:

1. To write the basics of SQL Queries.
2. To use DDL , DML commands
3. To construct of queries using SQL
4. To design database and ER data model,.
5. To write PL sql programs.

Create table customer and order and part and find the solution for the following queries.

1. Get Part Names of Parts ordered by at least two different Customers.
2. Get for each part Get P No., Pname and Total Sales
3. For Each Part, Get P NO., Pname, Total sales, whose total sales exceed 1000.
4. An Enterprise Wishes to Maintain a Database to Automate its operations. Enterprise divided into Certain Departments and Each Department consists of Employees. The following two Tables
   Describe Automation Schemas:
   Dept (Dept. No., Dname, Loc)
   Emp (Empno. Ename, Job, Mgr, Hiredate, Sal, Comm,Deptno.)
5. Create a view, which contains Employee Names and their Manager Names working to Sales Department.
6. Determine the Names of Employee , who earns more than their Managers
7. Determine the Names of Employees, who take highest salary in their Departments.
8. Determine the Employees who located at the same place.
9. Determine the Employees whose total salary is like the Minimum Salary of any

Department.

10. Update the Employee salary by 25% whose experience is Greater than 10 years.
11. Delete the Employees, who completed 32 years of Services.
12. Determine the Minimum salary of an Employee and his details.
13. Display the Manager who is having Maximum Number of Employees working under him.
14. Print a list of Employees Displaying Less Salary if less than 15000 if exactly 1500, Display the exact Salary and if Greater than 1500 Display more Salary.
15. Display those Employees whose first 2 character s from Hire Date. Last two Characters of Salary.
16. Display those Employees whose 10% of Salary is equal to the Year of Joining.
17. In which year did most people join the Company? Display the year and Name of Employees.
18. Display the Half of the Enames in Upper Case and remaining Lower Case.
19. Display Ename, Dname, even if there is no Employees working in a particular Department (Use outer Join)

20. Find the Names of Faculty Members for whom the Combined Enrollment of the Courses that they teach is Less than five.
21. Print the level and Average Age of Student for that level, for each level.
22. Print that level and average age of the student for that level, for all levels except Jr.
23. Find the names of Students who are enrolled in the Maximum number of classes.
24. Find the Names of the Students who are not Enrolled in Any Class.
25. Draw the ER diagrams for a college/university.

P L / S Q L programs

1. Write a Pl / SQL Program to check the given number is Prime or not.
2. Write a Pl / SQL Program to check the given number is Pallindrome or note.
3. Write a Pl / SQL Program to Swap two numbers without using third Variable.
4. Write a Pl / SQL Program to generate Multiplication Tables for 2, 4, 6.
5. Write a Pl / SQL Program to display sum of Even / Odd number in the given range.
6. Write a Pl / SQL Program to check the given number is Armstrong or not.
7. The H R D Manager has decided to Raise the Employee Salary by 15%. Write a Pl / SQL Block to Accept the Employee Number and Update the Salary of that Employee. Display appropriate message based on the Existence of the Record in EmpTable.
8. Write a Pl / SQL Program to display top 10 rows in Emp Table based on their Job and Salary.
9. Write a Pl / SQL Program to raise the Employee Salary by 10%. For Department Number 30 people and also maintain the raised details in the Raise Table.
10. Write a Procedure to Update the Salary of Employee, who are not getting Commission by 10%.

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Faculty of Science

Department of C S E

B. Sc. (C S E) 3rd Year– Semester – V

(2021 – 22)

(As per C B C S)

Skill Excellence Compulsory Course –III

PHP AND MYSQL

Paper Code S7565

Total No. of Hours: 24 (Hours / Week): 2 Duration of Examination: 2 Hours
Max. / Min. Marks: 50 No. of Credits: 2

The objective of this course is to:

1.Provide an understanding PHP development environment.
2.Introduce the various php programming constructs decision making ,loops etc.
3.Introduce the arrays & strings concepts in php.
4.Provide syntax used with MySQL and methods for retrieve and manipulate data from one or more tables
5.learn real time application using php and mysql.

At the end of course students will be able to:

1.Work with PHP development environment.
2.Use various php programming constructs decision making ,loops etc.
3.Introduce the arrays & strings concepts in php.
4.Use MySQL and methods for retrieve and manipulate data from one or more tables
5.Develop real time application using php and mysql

Unit – I

Introducing PHP – What is PHP? Why use PHP? Evolution of PHP, Installing PHP, Other ways to run PHP, Creating your first script. PHP Language Basics – Using variables, Understanding Data Types, Operators and Expressions, Constants. Decisions and Loops – Making Decisions, Doing Repetitive Tasks with Looping, Mixing Decisions and Looping with HTML

Unit-II

Strings – Creating and Accessing Strings, Searching Strings, Replacing Text with Strings, Dealing with Upper and Lowercase, Formatting Strings. Arrays – Creating Arrays, Accessing Array Elements, Looping Through Arrays with for-each, Working with Multidimensional Arrays, Manipulating Arrays.

Functions – What is a Function? Why Functions are useful? Calling Functions, Working with Variable Functions, Writing your own Functions, Working with References, Writing Recursive Functions.

Unit – III

Objects – Introduction OOP Concepts, Creating Classes and Objects in PHP, Creating and using Properties, Working with Methods, Object Overloading with _get(), _set() and _call(), Using Inheritance to Extend Power of Objects, Constructors and Destructors, Automatically Loading Class Files, Storing as Strings. Handling HTML Forms with PHP – How HTML form works, Capturing Form Data with PHP, Dealing with Multi-Value Fields, Generating Web Forms with PHP, Storing PHP Variables in Forms, Creating File Upload Forms, Redirecting After a Form Submission.

Unit – IV

Working with Files and Directories - Getting Information on Files, Opening and Closing Files, Reading and Writing to Files, Copying, Renaming, and Deleting Files, Working with Directories. Introducing Databases and SQL – Deciding How to Store Data, Understanding Relational Databases, Setting Up MySQL, A Quick Play with MySQL, Connecting MySQL from PHP. Retrieving Data from MySQL with PHP – Setting Up the Book Club Database, Retrieving Data with SELECT, Creating a Member Record Viewer.

Manipulating MySQL Data with PHP – Inserting, Updating, and Deleting Records, Building a Member Registration Application.

References

Matt Doyle, Beginning PHP 5.3 (Wrox – Wiley Publishing) Reference s Ellie Quigley, PHP and MySQL by Example Joel Murach, Ray Harris, Murach's PHP and MySQL Brett McLaughlin, PHP & MySQL: The Missing Manual Luke Welling, Laura Thomson, PHP and MySQL Web Development W. Jason Gilmore, Beginning PHP and MySQL From Novice to Professional Andrew Curioso, Ronald Bradford, Patrick Galbraith, Expert PHP and MySQL

Note: Theory Exam 50 Marks

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Faculty of Science

Department of C S E

B. Sc. (C S E) 3rd Year– Semester – V

(2021 – 22) (As per C B C S)

GE–1 Information Technologies

Paper Code G7565

Total No. of Hours: 24 (Hours / Week): 2 Duration of Examination: 2 Hours
Max. / Min. Marks: 50 No. of Credits: 2

The objective of this course is to introduce: 1.Part of Computers. 2. Input and Output devices 3.Various memories. 4.OS concepts. 5.Basics of Computer Networks

At the end of course students will be able to understand: 1.Part of Computers. 2. Input and Output devices 3.Various memories. 4.OS concepts. 5.Basics of Computer Networks

Unit – I

Introduction to Computers: What is a Computer? Characteristics of Computers, Generations of Computers, Classification of Computers, Basic Computer Organization, Applications of Computers. Input and Output Devices: Input Devices, Output Devices, Soft Copy Devices, Hard Copy Devices. Computer Memory and Processors: introduction, Memory Hierarchy, Processor Registers, Cache Memory, Primary Memory, Secondary Storage Devices, Hard Disks, Optical Drives, USB Flash Drives, Memory Cards.

Unit – II

Computer Software: Introduction, Classification of Computer Software, System Software, Applications Software, Firmware, Middleware, Acquiring Computer Software. Operating Systems: Introduction, Evolution of OS, Process Management, Memory Management, File Management, Device Management, Security Management, Command Interpreter, Windows, Linux.

Unit – III

Introduction to Algorithms and Programming Languages: Algorithm, Control Structures, Flowcharts, Pseudo code, Programming Languages, Generations of Programming Languages. Database Systems . Database Oriented Approach, Database Views, Three-Schema Architecture, Database Models, Components of DBMS, Introduction of SQL Queries.

Unit – IV

Computer Networks: Introduction, Connection Media, Data Transmission Mode, Data Multiplexing, Data Switching, Network Topologies, Types of Networks, NT Devices, OSI Model.

Text book :ReemaThareja, Fundamentals of Computers

Reference s1,P. K. sinha, Computer Fundamentals Anita Goel, Computer 2 Fundamentals V. Rajaraman, Fundamentals of Computers E. Balagurusamy,3 Fundamentals of Computers J. Glenn Brookshear, Dennis Brylow, Computer Science An Overview

Anwarul Uloom College (Autonomous)

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Faculty of Science

Department of C S E

B. Sc. (C S E) 3rd Year

(2021 – 22)

(As per C B C S)

VI– Semester

Internet of Things

Paper Code 7666

Total No. of Hours: 70 (Hours / Week): 5 Duration of Examination: 3 Hours
Max. / Min. Marks: 70 / 28 No. of Credits: 5

Course objectives: The objective of this course is to:

1. Provide an understanding what IoT is and how it works today
2. Introduce the factors that contributed to the emergence of IoT
3. Introduce Internet and communication technologies for IoT.
4. Provide Prototyping and programming for IoT
5. Introduce Cloud computing and Data analytics.

Course outcomes: At the end of course students will be able to:

1. Understand what IoT is and how it works today.
2. Understand the factors that contributed to the emergence of IoT
3. Understand the Internet and communication technologies for IoT.
4. Understand prototyping and programming for IoT
5. Understand the Cloud computing and Data analytics.

UNIT– I : Introduction to Internet of Things: IOT vision, Strategic research and innovation directions, IoT Applications, Related future technologies, Infrastructure, Networks and communications, Processes, DataManagement, Security, Device level energy issues.

UNIT–II: Internet Principles and communication technology: Internet Communications: An Overview – IP, TCP,IP protocol Suite, UDP. IP addresses – DNS, Static and Dynamic IP addresses, MAC Addresses, TCP and UDP Ports, Application Layer Protocols – HTTP, HTTPS, Cost Vs Ease of Production, Prototypes and Production, Open Source Vs Closed Source.

UNIT–III: Prototyping and programming for IoT: Prototyping Embedded Devices – Sensors, Actuators, Microcontrollers, SoC, Choosing a platform, Prototyping Hardware platforms – Arduino, Raspberry Pi. Prototyping the physical design – Laser Cutting, 3D printing, CNC Milling.Techniques for writing embedded C code: Integer data types in C, Manipulating bits – AND, OR, XOR,NOT, Reading and writing from I/ O ports.

UNIT–IV: Cloud computing and Data analytics: Introduction to Cloud storage models -SAAS, PAAS, IAAS.Communication APIs, Amazon web services for IoT, SkynetIoT Messaging Platform.Introduction to Data Analytics for IoT – Apache Hadoop- Map reduce job execution workflow.EthicalissuesinIoT-Privacy,Control,Environment,solutionsto ethical issues.
Note: Theory Exam (70 M + Internal Assessment (30 M) = Total 100 Marks

Suggested Readings: 1. Internet of Things - Converging Technologies for smart environments and Integrated ecosystems, River Publishers. 2. Designing the Internet of Things , Adrian McEwen, Hakim Cassimally. Wiley India Publishers 3. Fundamentals of embedded software: where C meets assembly by Daneil W lewies, Pearson. 4. Internet of things -A hands on Approach, Arshdeep Bahga, Universities press.

Faculty of Science
Department of C S E
B. Sc. (C S E) 3rd Year
(2021 – 22)
(As per C B C S)
VI– Semester
Web Programming
Paper Code 7667

Total No. of Hours: 70 (Hours / Week): 5 — Duration of Examination: 3 Hours
Max. / Min. Marks: 70 / 28 — No. of Credits: 5

Course objectives: The objective of this course is:
1.To introduce HTML &DHTML language for client –sides scripting
2.To introduce Cascading style sheets and layers .
3.To introduce with Java scripts and it's objects
4.To introduce Server-side programming with ASP
5.To introduce the XML.

Course outcomes: At the end of course students will be able:
1.Gain knowledge of client-side scripting, validation of forms.
2.Understand the use of css and layers
3.Understand Java scripts and it's objects
4.Understand server-side scripting with ASP.
5.Understand what is XML and how to parse and use XMLData .

Unit – I: H T M L Basics: Introduction: HTML, XML and the World Wide Web, Basic HTML, the Document body, Text, Hyperlinks, Adding more formatting Lists, Tables, Using Colours and Images, Multimedia Objects, Frames, Forms – towards interactivity.

Unit – II: Introduction to DHTML: Using styles – Simple examples, defining your own styles, properties and values in styles, Style Sheets – A worked example, Formatting blocks of information, Layers, Java Script basics, Variables, String manipulating, Mathematical functions, Statements, Operators, Arrays, functions.

Unit – III: Data and Objects in Java Script: Regular expressions, Exception Handling, Built in Objects, Events, Data validation, Opening a new window, Messages and Configurations, The status bar, writing to a different frame Rollover buttons, Moving images, Multiple pages in a single Download, A Text only menu system, Floating logos.

Unit – IV: Active Serer Pages and Java: Introduction to Active Server Pages and Java, Basic XML, Document type definition, XML, Schema, Document Object Model, Presenting XM, Web Browsers, Basics of Perl, Web Servers, I P and T C P, Hyper Text Transfer Protocol, Common Gateway Interface.

Note: Theory Exam (70 M + Internal Assessment (30 M) = Total 100 Marks

Prescribed Books: Chris Bates, Web Programming Building Internet Applications, Second Edition, Wiley (2007)

Reference Books: Paul S Wang Sanda , S Katila, A Introduction to Web Design plus Programming, Thomson (2009) 2.Robert W Sebesta, Programming the World Wide Web, Third Edition, Pearson Education (2007) 3.Thomas A Powell, The Complete Reference HTML and XHTML, fourth Edition, Tata McGraw Hill (2009).

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Department of C S E
B. Sc. (C S E) 3rd Year
(2021 – 22)
(As per C B C S)
VI– Semester
Web Programming LAB
Paper Code 7667 P

Total No. of Hours: 48 Duration of Examination: 2 Hours
Max. Marks: 50 No. of Credits: 2

Course objectives: The objective of this course is:

1. To write programs using html.
2. To write programs for solving real world problems using java Scripts.
3. To write programs using html,css and java scrips.
4. To write programs to handle various data validation.
5. To impart hands on experience on real time websites.

Course outcomes: At the end of course students will be:

1. Able to write html programs.
2. Able to solve real world problems using java scripts.
3. Able to write programs for solving real using java scripts.
4. Able to write handle the data validation.
5. Able to design web sites.

1. Write a HTML program illustrating text formatting.
2. Illustrate font variations in your HTML code.
3. Prepare a sample code to illustrate links between different sections of the page.
4. Create a simple HTML program to illustrate three types of lists.
5. Embed a real player in your Web page.
6. Embed a calendar object in your Web page.
7. Create an Applet that accepts two numbers and perform all the Arithmetic Operations.
8. Create table to store your college time table.
9. Using table tag align the images as follows:
10. Write a Program to demonstrate frameset tag.
11. Write a Program in Java Script to add two numbers.
12. Write a Script to print Fibonacci series
13. Write a Script to evaluate the following expression:1+2 / 2! + 3/3! + …..+ n /n!
14. Write a Script to print Fibonacci series recursive functions.

15. Write a Script to wish the user “Good Morning” at different hours of the day.
16. Create a customer profile for data entry of customers in a hotel.
17. Create a student registration system with the following fields. Name, Regd.No., Gender, Street, City, State, Pincode, Stdcode, Phone, dbirth, college, Location, Duties and Period
18. Create a Bio-data format with the following fields Name, Candidate, code, Date of Birth, Gender, Address, Phone, Qualification and Percentage. Also create the following fields for entering present employment details: Company name, Company Address, Phone, ax, E-Mail, Total Experience and Project details.
19. Create a Sample Website on Historical Monument “The Charminar”.
20. Create a Sample website on Green Hyderabad.

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Faculty of Science
Department of C S E
B. Sc. (C S E) 3rd Year – Semester-VI
(2021 – 22)
(As per C B C S)

Introduction to Data science & Python Programming

Paper Code 7668

Total No. of Hours: 70 (Hours / Week): 5 — Duration of Examination: 3 Hours
Max. / Min. Marks: 70 / 28 — No. of Credits: 5

Course objectives: The objective of this course is:

1. To introduce the concept of data science and its fundamentals.
2. To introduce various machine learning algorithms.
3. To acquire programming skills in core Python.
4. To familiarize data types in python.
5. To understand various operators and control statements and Arrays

Course outcomes: At the end of course students will be able:

1. To understand data science phases of data science process and its role.
2. To understand various algorithms in machine learning.
3. To understand python programming and data types.
4. To understand Operators in Python, input and output statements, Control Statements.
5. To understand the concept of arrays in python.

Unit – I:

Data Science: Introduction to data science, the Data Science Process, A Data Scientist's Role in This Process. Why Python for data science, Different phases of a typical Data Science projects and role of python, Anaconda vs. Python.

Algorithms: Machine Learning algorithms, Three Basic Algorithms-Linear Regression ,k-Nearest Neighbors(KNN),K-Means , Logistic regression

Unit – II:

Introduction to Python: Python, Features of Python, Execution of a Python Program, Comparisons between C and Python, Comparisons between Java and Python.

Writing Our First Python Program: Installing Python for Windows, Installing numpy, Setting the Path to Python, Writing Our First Python Program, Executing a Python Program, Getting Help in Python, Getting Python Documentation Help, Reopening the Python Program in IDLE.

Data types in Python: Comments in Python, Doc strings, How Python Sees Variables, Data types in Python, Built-in data types, Boolean Data type, Sequences in Python, Sets, Literals in Python, Determining the Data type of a Variable, What about Characters, User-defined Data types, Constants in Python, Identifiers and Reserved words, Naming Conventions in Python.

Unit –III:

Operators in Python: Arithmetic Operators, Assignment Operators, Unary Minus Operator, Relational Operators, Logical Operators, Boolean Operators, Bitwise Operators, Membership Operators, Identity Operators, Operator Precedence and Associativity, Mathematical Functions.
Input and Output: Output statements, Input Statements, Command Line Arguments.
Control Statements: Control Statements, The if Statement, A Word on Indentation, The if … else Statement, The if … elif … else Statement, The while Loop, The for Loop, Infinite Loops, Nested Loops, The else Suite, The break Statement, The continue Statement, The pass Statement, The assert Statement, The return Statement.

Unit – IV:

Arrays in Python: Array, Advantages of Arrays, Creating an Array, Processing the Arrays, Types of Arrays, Working with Arrays using numpy, Working with Multi-dimensional Arrays, Sorting the Matrix, Transpose of a Matrix, Matrix Addition and Multiplication.
Strings and Characters: Creating Strings, Length of a String, Indexing in Strings, Slicing the Strings, Concatenation of Strings, Comparing Strings, Removing Spaces from a String, Finding Sub Strings, Counting Substrings in a String, Replacing a String with another String, Formatting the Strings.

Prescribed Books:

R. NageswaraRao, Corer Python Programming, Dreamtech Press

Reference s

Mark Lutz, Learning Python
Tony Gaddis, Starting Out With Python
Kenneth A. Lambert, Fundamentals of Python
James Payne, Beginning Python using Python 2.6 and Python 3
Paul Gries,Practical Programming: An Introduction to Computer Science using Python 3

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Faculty of Science

Department of C S E

B. Sc. (C S E) 3rd Year

(2021 – 22)

(As per C B C S)

VI– Semester

Python Programming LAB

Paper Code 7668 P

Total No. of Hours: 48 Duration of Examination: 2 Hours
Max. Marks: 50 No. of Credits: 2

The objective of this course is to introduce:
1. Use of operators, Arrays in python.
2. Application of dictionaries in python
3. Uses of Strings and characters.
4. Use of lists, tuples, and dictionaries in Python programs.
5. Creation of module in python.

At the end of course students will be able:
1. To write program using Operators, Arrays in Python
2. To write program using dictionaries in python.
3. To write program using Strings and Characters
4. To write program using lists, tuples, and dictionaries in Python programs.
5. To write applications using function in python.

1. Program for i) Sum of factors of a number
   ii) Sum of digits of a number
2. Program for i) Prime number or not
   ii) Perfect number or not
   iii) Armstrong number or not
3. Program for Fibonacci series
4. Program for finding square root of real or complex numbers
5. Program to find the factorial of a number using recursion
6. Program to create, concatenate and print a string and accessing sub-string from a given string in python.
7. Program to Create a List of Tuples with the First Element as the Number and Second Element as the Square of the Number
8. Program to create, append, and remove lists in python.
9. Program to demonstrate working with tuples in python.
10. Program to demonstrate working with dictionaries in python.

11. Write a program that accepts the lengths of three sides of a triangle as inputs. The program output should indicate whether or not the triangle is a right triangle (Recall from the Pythagorean Theorem that in a right triangle, the square of one side equals the sum of the squares of the other two sides).
12. Python program to define a module to find Fibonacci Numbers and import the module to another program.
13. Python program to define a module and import a specific function in that module to another program

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Faculty of Science
Department of C S E
B. Sc. (C S E) 3rd Year- Semester – VI
(2021 – 22)
(As per C B C S)
Project and Seminar
Paper Code 7670 P

Total No. of Hours: : 70 (Hours / Week): 5
Max. Marks: 70 + 30 No. of Credits: 4+1

Project Work and Seminar

1. This is to be offered only in 6th Semester
2. The student will be allowed to work on any Project based on the concepts studied in Core / Elective or Skill based Elective Courses.
3. The group size should be maximum of three (03) students.
4. Each group will be assigned a teacher as a supervisor who will handle both their theory as well as Lab classes.
5. A maximum of four (04) Projects would be assigned to one teacher.
6. Theory classes will cover Project Management techniques.

Course Objectives:

1. To train and provide hands on experiment in analysis, design and Programming of Information systems by means of case studies and Projects.
2. To expose the students to Industry Practices and team work.
3. To provide training in Soft skills and also train them in presenting Seminars and Technical Report Writing.

The Department can initiate the Project allotment procedure at the end of 3rd Year, 1st Semester (V – Semester) and finalize it in the first two weeks of 3rd Year, 2nd Semester (VI – Semester).

First two weeks of 3rd Year, II – Semester (VI – Semester) will be spent on special lectures by Engineers from Industries and R & D Institutions.

The objective of these preliminary talks will be to expose the student to real life practical problems and methodology to solve the technical problems.

Seminar Schedule will be prepared by the Coordinator for all the students from the 5th week to the last week of the Semester which should be strictly adhered to.

Each Student will be required to

1. Submit a one page synopsis before the Seminar for display on Notice Board.
2. Give a 20 minute presentation followed by 10 minutes discussion.
3. Submit a technical write-up on the talk.

At least two teachers will be associated with the Project Seminar to evaluate student for the award of Sessional Marks which will be on the basis of performance in all the 3 items stated above.

The Seminar presentation should include the following components of the Project:

- Problem definition and specification
- Literature survey, familiarity with Research Journals
- Broad knowledge of available techniques to solve a particular problem
- Planning of the work, preparation of bar (activity) charts
- Presentation – Oral and Written

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Faculty of Science
Department of C S E
B. Sc. (C S E) 3rd Year- Semester- VI
(2021 – 22)
(As per C B C S)
SECC-IV
SCILAB
Paper Code S7679

Total No. of Hours: 24 (Hours / Week): 2 Duration of Examination: 2 Hours
Max. / Min. Marks: 50 No. of Credits: 2

The objective of this course is to:

1. Provide an understanding Scilab environment and setup.
2. Introduce the menus ,commands and operations on vectors.
3. Introduce Scalars & Vectors.
4. Introduce Programming in scilab
5. Introduce string functions, 2d and 3d plotting.

At the end of course students will be able to:

1. Install and familiarize the scilab environment.
2. Understand the menus,commands and operations on vectors.
3. Understand the various operations on Scalars & Vectors.
4. Familiarize the programming in scilab
5. Process the string and plot 2d and 3d graph.

Unit – I (06 Hours)

Introduction to Scilab – what is scilab, downloading & installing scilab, a quick taste of scilab. The Scilab Environment – manipulating the command line, working directory, comments, variables in memory, recording sessions, the scilab menu bar, demos. Scalars & Vectors – introduction, initializing vectors in scilab, mathematical operations on vectors, relational operations on vectors, logical operations on vectors, built-in logical functions.

Unit – II (06 Hours)

Scalars & Vectors – elementary mathematical functions, mathematical functions on scalars, complex numbers, trigonometric functions, inverse trigonometric functions, hyperbolic functions. Matrices – introduction, arithmetic operators for matrices, basic matrix processing. Polynomials – introduction, creating polynomials, basic polynomial commands, finding roots of polynomial, polynomial arithmetic, miscellaneous polynomial handling.

Unit –III (06 Hours)

Programming in scilab – introduction, variables & variable names, assignment statements, arithmetic, relational, logical operators, input & output, flow control/branching/conditional statements, break and continue, handling matrices with loops, scripts, the concept of functions, user defined functions, special function commands. Menus and Dialog Boxes – introduction, a simple menu example, scilab window with greetings menu added, executing submenus from command line, linking menus to scilab code from external files, entering data through dialog boxes, printing a message in a message box, dialog box for entering a matrix.

Unit – IV (06 Hours)

Graphic Output – introduction, 2d plotting, function versions for graphic commands, 3d plotting, other graphic primitives, other graphic commands. String Handling Functions – symbolic processing in scilab, creation of a linear combination of arguments, string to ASCII conversion, creation of a string of blank characters, conversion of a string to uppercase and lowercase, string matching, string concatenation, reversing a string, replacement of a string by another, length of a string, type checking.

Text book Er. HemaRamachandran, Dr.Achuthsankar S. Nair, Computer SCILAB–A Free Software to MATLAB

Reference s Digite, Introduction to ScilabDigite, Optimization in ScilabScilab Enterprises, Scilab for Very Beginners Digite, Introduction to Discrete Probabilities with Scilab

Faculty of Science

Department of C S E

B. Sc. (C S E) 3rd Year- Semester -VI

(2021 – 22)

(As per C B C S)

Basic Web Designing

GE-2

Paper Code G7679

Total No. of Hours: 24 (Hours / Week): 2 Duration of Examination: 2 Hours
Max. / Min. Marks: 50 No. of Credits: 2

Unit – I: (06 Hours)

Introduction t o Web: Internet, Intranet Protocols, www, U R L, Computer Network, Types of Networks, Web Browsers, Client Server.

HTML Basics: Introduction – HTML, XML and the World Wide Web. The Document body Text, Hyperlinks, Adding more formatting different types of lists, Tables, Using tables in Web pages, Using Colour and Images, Images.

Unit – II: (06 Hours)

More HTML: Multimedia objects, Frames, Forms – towards interactivity. **DHTML:** Introduction, Dynamic html features.**Cascading Style Sheets:** Using styles: Simple examples, Defining your own styles, Properties and values in styles, Style Sheets – A worked example, Layers.

Unit – III: (06 Hours)

Basics of Java Script: Introduction to Java Script: The basics, Variables, control Statements, looping Statements, String manipulation, mathematical functions, Operators and its types, Arrays and its types, Functions using Functions.

Unit – IV: (06 Hours)

Data Validation: Opening a new Window, Messages and confirmations, The status bar, Writing to a different frame, Rollover buttons, Moving images, Multiple pages in single download. A text only menu system, Floating logos, Designing simple Web pages.

Note: Theory Exam 50 Marks

Prescribed Books:1.Chris Bates – Web Programming Building Internet Applications, 2nd Edition, Wiley (2007) .

Anwarul Uloom College (Autonomous)

New Mallepally, Hyderabad, Affiliated to Osmania University
(Re-Accredited with NAAC with A – Grade)

Faculty of Science

I ,II,III and IV – Semesters

B. Sc. (C S E) C B C S

Model Paper

Paper code:

Max. / Min. Marks: 35/ 14 Time: 2 Hours

Section – A (5 X 2M = 10 M)

(Short Answer Type questions)

I. Answer ALL the following questions.

1. **Unit – I**
2. **Unit – II**
3. **Unit – III**
4. **Unit – IV**
5. **Choose one from any one of the above Unit**

Section – B (5 X 5M = 25 M)

(Essay Answer Type questions)

II. Answer ALL the following questions.

6. ***a)*Unit – I**

O R

***b)*Unit – I**

7. ***a)*Unit – II**

O R

***b)*Unit – II**

8. ***a)*Unit – III**

O R

***b)*Unit – III**

9. ***a)*Unit – IV**

O R

***b)* Unit – IV**

10. ***a)*Choose one from any one of the above Unit**

O R

***b)*Choose one from any one of the above Unit**

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Anwarul Uloom College (Autonomous)

New Mallepally, Hyderabad, Affiliated to Osmania University
(Re-Accredited with NAAC with A – Grade)

Faculty of Science

V & VI – Semesters

B. Sc. (C S E) C B C S

Model Paper

Paper code:

Max. / Min. Marks: 70 / 28 Time: 3 Hours

Section – A (4 X 5M = 20 M)

(Short Answer Type Questions)

I. Answer ALL the following questions.

1. **Unit – I**
2. **Unit – II**
3. **Unit – III**
4. **Unit – IV**

Section – B (5 X 10M = 50 M)

(Essay Answer Type Questions)

II. Answer ALL the following questions.

5.a) **Unit – I**

O R

b) **Unit – I**

6.a) **Unit – II**

O R

b) **Unit – II**

7.a) **Unit – III**

O R

b) **Unit – III**

8.a) **Unit – IV**

O R

c) **Unit – IV**

9. a) **Choose one from any one of the above Unit**

O R

b) **Choose one from any one of the above Unit**

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ANWARUL ULOOM COLLEGE
(Autonomous)

(An Autonomous Muslim Minority Institution)
New Mallepally, Hyderabad – 500 001, T.S., India.
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(Re – Accredited by N A A C with " A " Grade)

Faculty of Science

Department of Computer Science & Engineering

1. Certificate Course in Web Designing (3 Months)
2. Certificate Course in Graphics (3 Months)

Academic Year 2021–22

Faculty of Science
Department of C S E
B. Sc. (C S E)
(2021 – 22)
Certificate Course in Web Designing

Hours / Week: 4 Duration of Course: 3 Months

Course Objectives:
Course Description: Students learn and apply fundamentals of various Software applications, Web Design, Image editing and drawing . Advertising and marketing projects coordinate technical skills with organization, Management, Communication, Ethics and Teamwork.
Instructional Philosophy: Students will be given challenging real world Projects and assignments typical of the web design Industry. High quality work is expected and students will be given opportunities to redo work until it meets standards specified during instructions.
Classroom activities will include reading, Research Projects and Problem solving. Students will often work in teams, but will be expected to complete individual assignments in relation to the team's work.
Assessment Methods will include written Examination, tests and Quizzes, oral and written Research Reports, reading assignments and Projects.

Web Designing Course Syllabus

Introduction to Web Technologies: (04 Hours)
Careers in Web Technologies and Job Roles. How the Website Works? Client and Server Scripting Languages, Domain and Hosting, Responsive Web Designing, Types of Websites (Static and Dynamic Websites), Web Standards and W 3 C recommendations
HTML : (08 Hours)
What is Markup Language? Basic Structure of HTML, difference between HTML and XHTML, head section and elements of Head section, Meta Tags, CSS Tags, Script Tag, Table Tag, Div Tag, Header Tags, Paragraph, Span, Pre Tags anchor Links and Named Anchors, Image Tag, Object Tag, Iframe Tag, Forms, Form Tag, Attributes of Forms, POST and GET method, Fieldset and Legend, Text input, Text area, Checkbox and Radio Button, Dropdown, List and Optgroup, File Upload and Hidden Fields, Submit, Image Normal, Reset Button.

CSS: (08 Hours)

Introduction to Cascading Style Sheets: Types of CSS, CSS selectors, universal Selector, ID selector Tag selector, class, selector sub, Selector, Child combinatory, Selector, Adjacent sibling selector, Attribute selector, Group selector, first – line and first letter selector, Before and After Selector, CSS properties, Type properties, Background properties, block properties, Box properties, List properties, Border properties, Positioning properties, Real time implementation, conversion of Table to CSS Layout, CSS Menu Design (Horizontal, Vertical) Form Designing.

HTML 5.0: (08 Hours)
Introduction to HTML 5 – Features of HTML 5, HTML 5 Doctype, New structure Tags, Article, Aside, Header, Footer, Designing a HTML structure of page, New media Tags, Audio Tag, Video Tag, Canvas and Svg Tag, Introduction to HTML 5 Forms, New Attributes, Placeholder, Attribute, Require Attribute, Pattern Attrribute, Autofocus Attributre, Emial, Tel, Url types number type, date type, range type, voice, search, examples of Form.

Bootstrap: (08 Hours)
Responsive Web Design with Bootstrap, Introduction to Responsive Design, Mobile first design concepts, Common device dimensions, View – port tag. Using CSS media Queries, Menu Conversion script, Basic Custom layout, Introduction to Bootstrap, Installation of Bootstrap, Grid system, Forms Buttons, Icons Integration.

Java Script : (08 Hours)
Introduction to Client Side Scripting – Introduction to JavaScript, JavaScript Data types, Variables in JavaScript, Operators in JavaScript, condition Statements, JavaScript, Loops, JavaScript Popup Boxes, JavaScript Events, JavaScript Arrays, Working with Arrays, JavaScript Objects, JavaScript functions, Using JavaScript in Real time Validation of Forms, Related Examples.

Web Hosting: (04 Hours)
Web Hosting Basics, Types of Hosting Packages, Registering Domain, Defining Name Servers, Maintaining a Website.

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Faculty of Science
Department of C S E
B. Sc. (C S E)
(2021 – 22)
Certificate Course in Graphic Designing

Hours / Week: 4 Duration of Course: 3 Months

Course Objectives:

Course Description: Students learn and apply fundamentals of various Software applications (such as illustrator and Photoshop, Web Design, Image editing, drawing and Graphic Animation. **Advertising and Marketing Projects** coordinate technical skills with organization, management, communication, Ethics and Teamwork.

Instructional Philosophy: Students will be given challenging real world projects and assignments typical of the Graphic Design Industry. High quality work is expected and students will be given opportunities to redo work until it meets standards specified during instructions. Classroom activities will include reading, Research, Projects and problem solving. Students will often work in teams, but will be expected to complete individual assignments in relation to the Team's work. **Assessment methods** will include written Examinations, test and quizzes oral and written Research Reports, reading assignments and Projects.

Course Goals:

- demonstrate a thorough understanding of the elements of Graphic Design.
- Read, understand and communicate in the language of Graphic Design.
- Use technology such as Photoshop, Illustrator and Internet Explorer.
- Students will learn to demonstrate positive work behavior.
- Students will learn to solve problems using critical thinking.

Course Outline:

Program Area 1: Introduction to the Graphic Design Industry.

- Student are introduced to the Graphic Design Industry though Magazines, internet etc. We Begin to talk about audience.
- History of Graphic Design
- Future of Graphic Design

Graphic Design Course Syllabus

Program Area 2: (08 Hours)

Introduction to the Equipments:

- Students use Multimedia elements to create projects with Graphic Design Software. The Introduction of each piece of equipment would be tied to a relevant Graphic Project.
    - Computer
    - Scanner
    - Camera
    - Digital tablet
    - Printer
    - Graphic Design

Program Area 3: (08 Hours)

Elements of Design:

- Students learn about Design elements through Projects such as – Creating examples of colour Schemes, using Graphic Software and creating an original alphabet based on a theme. Each Project includes self reflection and a peer review.
    - Colour
    - Line
    - Shape
    - Space
    - Texture
    - Value

Program Area 4: (08 Hours)

Principes of Design:

- Students learn about principles of Design through projects such as Posters, Creating Original Designs that reflect an emotion, magazine covers, product ads, Cereal box prototypes, candy wrappers etc. They do a self reflection on their Project and a peer review. Some Projects include a presentation to the Class/.
    - Balance
    - Contrast
    - Emphasis / Dominance
    - Harmony
    - Movement / Rhythm
    - Repetition / Pattern
    - Unity
    - Variety

Program Area 5: (08 Hours)

Topography:

- In teams students create a business proposal and create branding for that Business including a Commercial and magazine ad. They present the product to the class.
    - Anatomy of a letter
    - Typefaces
    - Typographic measurement
    - Typographic standards
    - Typographic Guidelines

Program Area 6: (08 Hours)
Creating Image for Print and Web:

- Students learn when to use particular image formats for individual projects. They create collages logos, cd covers etc. Each project includes self reflection and a peer review..
    - Formats
    - Resolutions
    - Raster v s Vector

Program Area 7: (08 Hours)
Editing Images:

- Students use images scanned and from the internet to create projects while learning to cite sources and understand whether or not they can legally use the image..
    - Ethics
    - Copyright law

Program Area 8: (08 Hours)
Leadership:

- Students will participate in leadership activities such as – Perfect attendance, College involvement, volunteering in the Community as well as performing other leadership tasks within the classroom, college and community..

Text and Materials: Students will become familiar with Adobe Creative Suite Design applications including – Illustrator, Photoshop, InDesign, Acrobat.

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