E-mail: sriynmcollege@rediffmail.com **Office: 08814-273246**

Website: www.sriyncollege.org

Department of Computer Science

Sri Y N College

(Autonomous)

(Affiliated to Adikavi Nannaya University)

Thrice Accredited by NAAC with 'A' grade

NARASAPUR-534275, West Godavari District, Andhra Pradesh

B.Sc., Computer Science Syllabus

for the Academic Year 2022-2023

DETAILS OF PAPER TITLES & CREDITS

Sem	Course no.	Course Name	Course type (T/L/ P)	Hrs/Week Science: 4+2	Credits Science: 4+1	Max. Marks Cont/ Internal /Mid Assessment	Max. Marks Sem- end Exam
I	1	Problem Solvingin C	T	4	4	25	75
		Problem Solving in CLab	L	2	1	-	50
II	2	Data Structures using C	T	4	4	25	75
		Data Structures using C Lab	L	2	1	-	50
III	3	Database ManagementSystem	T	4	4	25	75
		Database Management System Lab	L	2	1	-	50
IV	4	Object Oriented Programming using Java	T	4	4	25	75
		Object OrientedProgramming using Java Lab	L	2	1	-	50
	5	Operating Systems	T	4	4	25	75
		Operating Systems Lab using C/Java	L	2	1	-	50
V	6A	Web InterfaceDesigning Technologies	T	4	4	25	75
		Web Interface Designing Technologies Lab	L	2	1	-	50
	7A	Web Applications Development using PHP& MYSQL	T	4	4	25	75
		Web Applications Development using PHP & MYSQL Lab	L	2	1	-	50
	OR						
	6B	Internet of Things	T	4	4	25	75
		Internet of Things Lab	L	2	1	-	50
	7B	Application Development using Python	T	4	4	25	75
		Application Development Using Python Lab	L	2	1	-	50
	OR						
	6C	Data science	T	4	4	25	75
		Data Science Lab	L	2	1	-	50
	7C	Python for Data science	T	4	4	25	75
		Python for Data Science Lab	L	2	1	-	50

Note: *Course type code: T: Theory, L: Lab, P: Problem solving

ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION

(A Statutory body of the Government of Andhra Pradesh)

Revised UG Syllabus Under CBCS

(Implemented from Academic Year 2020-21)

PROGRAMME: FOUR YEAR B.Sc. (Hons)

Domain Subject: **COMPUTER SCIENCE**

Skill Enhancement Courses (SECs) for Semester V, from 2022-23 *(Syllabus with Learning Outcomes, References, Co-curricular Activities)*

Structure of SECs for Semester – V

(To choose one pair from the three alternate pairs of SECs)

Univ Code	Course Number 6 & 7	Name of Course	Hours/ Week Theo+Prac	Credits Theo+Prac	Marks	
					IA – 20 Filed Work 05	Sem End
	6A	Web Interface Designing Technologies	3 + 3	3+ 2	25	75
	7A	Web Applications Development using PHP& MYSQL	3 + 3	3 + 2	25	75
OR						
	6B	Internet of Things	3 + 3	3+ 2	25	75
	7B	Application Development using Python	3 + 3	3 + 2	25	75
OR						
	6C	Data science	3 + 3	3+ 2	25	75
	7C	Python for Data science	3 + 3	3 + 2	25	75

Note-1: For Semester–V, for the domain subject Computer Science **any one** of the **three** pairs of SECs shall be chosen as courses 6 and 7, i.e., 6A & 7A or 6B & 7B or 6C & 7C. The pair shall not be broken (ABCD allotment is random, not on any priority basis).

Note-2: One of the main objectives of Skill Enhancement Courses (SEC) is to inculcate field related skills of the domain subject in students. The syllabus of SEC will be partially skill oriented. Hence, teachers shall also impart practical training to students on the skills embedded in syllabus citing related real field situations.

Department of Computer Science

Sri Y.N.College (Autonomous): Narsapur

(Affiliated to Adikavi Nannaya University)
Thrice Accredited by NAAC at 'A' Grade
Recognized by UGC as 'College with Potential for Excellence'

NARASAPUR-534275, W.G.Dist. AP

Board of studies meeting of Computer Science held on 03-09-2022 at 10.00 AM for the Academic Year2022-23

Members: **Signatures**

1. **Sri B.China Veeraswamy**, M.Sc., (C.S).,
   Chairman & In-Charge of Dept.
2. **Smt. G.Sowjanya**, M.Sc., (C.S).,
   Lecturer in Computer Science
3. **Sub.Lt (NCC) Y.N.V.V.R.Rama Rao**, M.Sc.,(C.S).,
   Lecturer in Computer Science
4. **Sri Ch.S.V.Ravi Kumar**, M.C.A.,
   Lecturer in Computer Science
5. **Kum. A.Naga Lakshmi,** M.C.A.,
   Lecturer in Computer Science
6. **Smt. K.Sireesha, MCA.,**
   Lecturer in Computer Science
7. **Smt. A. Manga Tayaru, MCA.,**
   Lecturer in Computer Science

University Representative:

8. **Sri D.S.V.Suryanarayana, M.Tech.,**
   Head, Dept. of Computer Science
   MVNJS & RVR College of Arts and Science, E.G.Dt.,
   Cell No: 96660-35667, suriyadesineedi@gmail.com

Subject Experts:

9. **Sri K.Trinadha Ravi Kumar,** M.Sc., M.Tech.,
   Head, Dept. of Computer Science (UG)
   SVKP & Dr.K.S.Raju Arts & Science College (A), Penugonda,
   W.G.Dist., Cellno: 94410-20934, 94410-90468,
   trinitymails@gmail.com
10. **Sri.P.Sirish Kumar,** M.C.A, M.Tech.,
    Head, Dept of Computer Science,
    D.N.R. College (A), Bhimavaram, W.G.Dt.,
    Cell no: 89193-34795, sirishkumar@live.com

Alumni Member:

11. **Sri. P.S.N.V. Satyanarayana,** M.C.A., M.Tech.,
    Digital Assistant, Former Asst.Professor in CSE
    Village Secretariat, Ramannapalem, W.G.Dt., Cell no: 79896-40560,
    pulletikurthi.satyanarayana@gmail.com

Representative from Industry:

12. **Sri Ratnala RamaKrishna,** M.Sc.,
    Associate Director - Technology
    Virtuasa Consulting Services Pvt. Ltd.,
    Hyderabad – 500032, Cell No: 93463-20386,
    mscramu@gmail.com,ratnalamsc@gmail.com

Agenda:

1. To Prepare the syllabi and model question papers for the degree I,II and III year for the academic year 2022-2023 by making appropriate modifications (above or equal to 20%) to the university syllabus.
2. To prepare the syllabi and model question papers for add-on courses, Certificate courses for the academic year 2022-2023.
3. To prepare syllabus for Bridge course for the newly admitted students.
4. To prepare Course Outcomes, Programme Outcomes and Programme Specific Outcomes for the degree I, II & III years for the academic year 2022-2023.
5. To discuss the modalities for conducting the Social Immersion Programme (Community Service Project) at the end of the 1st year degree, internship/project at the end of second year degree and internship during V semester or VI Semester for the III year degree students.
6. To discuss the modalities and topics for conducting Seminars/ Workshops.
7. To discuss the issue of online courses to be done by the students and staff.
8. To discuss the staff publications in the UGC recognized journals.
9. To discuss the issue of getting functional MOUs with the industry.
10. To discuss the feasibility of developing collaborations with other Colleges.
11. To evolve a plan of action for the Consultancy activity.
12. To discuss about ICT enabled teaching to the students.
13. Any other item with permission of the chair.

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CHAIRMAN
BOARD OF STUDIES
DEPARTMENT OF COMPUTER SCIENCE
SRI Y.N. COLLEGE (AUTONOMOUS)
(NAAC ACCREDIATED 'A' GRADE COLLEGE)
NARSAPUR - 534 275, W.G.Dt.,

Resolutions:

1.
   a) It is resolved to adopt and implement new B.Sc., Computer Science syllabus as prescribed by APSCHE and Adikavi Nannaya University, Rajamahendravaram w.e.f 2020-21 and ratify the minutes of Department Board of Studies meeting held on 03-09-2022 in the Computer Science department.
   b) It is resolved to approve I B.Sc., Computer Science syllabus (Theory, Practical and Model Question paper), Semester-I, Paper-I i.e., **"Problem Solving in "C" "** and Semester-II, Paper-II i.e., **"Data Structures using 'C' "** w.e.f. academic year 2020-21 as prescribed by the APSCHE and ANUR for the academic year 2022-2023 by making appropriate modifications (above or equal to 20%) to the University syllabus.
   c) It is resolved to approve II B.Sc., Computer Science syllabus (Theory, Practical and Model Question paper), Semester-III, Paper-III i.e., **"Database Management System"**, and Semester-IV, Paper-IV i.e., **"Object Oriented Programming using Java"**, Paper-V **"Operating Systems"** w.e.f. academic year 2021-22 as prescribed by APSCHE and ANUR for the academic year 2022-2023 by making appropriate modifications (above or equal to 20%) to the University syllabus.
   d) It is also resolved that, under the Structure of Skill Enhancement Courses (SECs) Elective - for Semester–V, to choose one pair from the three alternative of SECs. In the V Semester, members of of BOS have chosen two papers. One paper, **Paper VI (A) "Web Interface Designing Technologies"** and the other, **Paper VII (A) "Web Applications Development Using PHP & MY SQL"** w.e.f. academic year 2022-23 as prescribed by APSCHE and ANUR by making appropriate modifications (above or equal to 20%) to the University syllabus.
   e) It is resolved to continue the modified syllabus of **"INFORMATION AND COMMUNICATION TECHNOLOGY"** as the Skill Enhancement Course (SEC) in the II Semester of all I B.Sc., courses w.e.f. the academic year 2020-21 for the academic year 2022-2023 by making appropriate modifications (above or equal to 20%) to the University syllabus.
2. It is resolved to approve I B.Sc., Semester-I Computer Science Certificate Course syllabus (Theory and Model Question paper), i.e., **"Basic Computer Applications"** w.e.f. 2021-2022 for the academic year 2022-2023.
3. It is resolved to approve the Bridge Course Syllabus for newly admitted Batch for the academic year 2022-2023.
4. It is resolved to approve Course Outcomes (CO's), Programme Outcomes (PO's) and Programme Specific Outcomes (PSO's) for the syllabi of degree I, II & III years for the academic year 2022-2023.
5. a) It is resolved through discussion, designed the procedure to be adopted for conducting the Social Immersion Programmme (Community Service Project) at the end of the I year degree for the academic years 2020-2021, 2021-2022 and 2022-2023 w.e.f 2020-2021, as per the guidelines given by APSCHE.
   b) It is resolved through discussion, designed the procedure to be adopted for conducting the Social Immersion Programmme i.e., Internship/Project at the end of the II year degree for the academic year 2021-2022 w.e.f 2021-2022, as per the guidelines given by APSCHE.
   c) It is resolved through discussion, designed the procedure to be adopted for conducting the Social Immersion Programmme i.e., Internship during V semester or VI semester for III year degree students at the end of V semester for the academic year 2022-2023 w.e.f 2022-2023, as per the guidelines given by APSCHE depending upon the choice of the student.

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DEPARTMENT OF COMPUTER SCIE
SRLY.N. COLLEGE (AUTONOM
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NARSAPUR - 534 275, W.G.Dt

6. Discussed various topics for seminars/workshops and resolved to conduct a Seminar/workshop on **"Block Chain Technologies, Data Science, Big Data Analytics etc.,"**.
7. It is resolved that the online courses like MOOCS, SWAYAM and courses offered by Spoken tutorial should be done by the Staff and students.
8. Discussed regarding the staff publications. It is resolved that the staff members should make good effort to have their publications in the UGC Care List journals, Web of Science and Scopus Indexed Journals.
9. It is resolved to make functional MoU's with various industries and make field visits by sending the students to companies and also invite industry people to the college for giving awareness to the students on various aspects like skill enhancement and job opportunities etc.
10. The Department of Computer Science has Academic Collaboration with other colleges i.e., Sir C.R.Reddy Degree College, Eluru; B.V.Raju College, Bhimavaram, and Sri ASNM Govt Degree College (A), Palakol. It is resolved to organise guest lecturers/Student seminars/Student Exchange programs to the students by the students and faculty members of Sir C.R.Reddy Degree College, Eluru; B.V.Raju College, Bhimavaram, and Sri ASNM Govt Degree College (A), Palakol.
11. The College has entered into the Academic Collaboration with Sir C. R. Reddy College (A), Eluru on 27-10-2021. Hence, it is resolved to organize Guest lectures/ Student Seminars/Student Exchange Programs. It resolved to evolve a plan of action for the consultancy activity by approaching the business organizations in the district.
12. It is resolved use ICT enabled Tools for effective teaching to the students.
13. It is resolved to authorize the Chairman, Board of Studies to strengthen the syllabus and model papers of theory and practical examinations keeping in view the latest developments in consultation with other members of the department. Any further guidelines/instructions from APSCHE/ University are to be adopted as communicated.

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Signatures:

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BOARD OF STUDIES
DEPARTMENT OF COMPUTER SCIENCE
SRI Y.N. COLLEGE (AUTONOMOUS)
(NAAC ACCREDIATED 'A' GRADE COLLEGE)
NARSAPUR - 534 275, W.G.Dt.,

Batch 2022-2025
SRI Y.N.COLLEGE (AUTONOMOUS): NARSAPUR
I B.Sc. (Computer Science): I Semester under CBCS w.e.f 2020-2021
PAPER – I
PROBLEM SOLVING IN 'C'
SEMESTER-I

MID-1

UNIT I

General Fundamentals: Introduction to Computers: Block Diagram of a Computer, Input and Output devices, Characteristics and Limitations of Computers, Applications of Computers, Types of Computers, Computer Generations.

Number systems: Working with binary, octal, decimal and Hexa decimal numbering system.

Operating System: Operating System, Types of Operating system; Functions of Operating Systems. Windows basics: Start menu, icons, MS-Windows - Desktop, My Computer, My Documents, Pictures, Music, Videos, Recycle Bin, and Task Bar - Control Panel.

Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms, Flow Charts, Programming Languages – Generations of Programming Languages – Structured Programming Language.

UNIT II

Introduction to C: Introduction – Structure of C Program – Writing the first C Program – File used in C Program – Compiling and Executing C Programs – Using Comments –Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples.

Decision Control and Looping Statements: Introduction to Decision Control Statements– Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Goto Statement

MID-II

UNIT III

Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array– Operations on Arrays – one dimensional, two dimensional and multi dimensional arrays, Character handling and Strings.

UNIT IV

Functions: Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive functions.

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Structure, Union, and Enumerated Data Types: Introduction – Nested Structures – Arrays of Structures – Structures and Functions– Union – Arrays of Unions Variables – Unions inside Structures – Enumerated Data Types.

UNIT V

Pointers: Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – Pointer Expressions and Pointer Arithmetic – Null Pointers - Passing Arguments to Functions using Pointer – Pointer and Arrays – Memory Allocation in C Programs – Memory Usage – Dynamic Memory Allocation – Drawbacks of Pointers

Files: Introduction to Files – Using Files in C – Reading Data from Files – Writing Data to Files – Detecting the End-of-file – Error Handling during File Operations – Accepting Command Line Arguments.

BOOKS

1. E Balagurusamy – Programming in ANSIC – Tata McGraw-Hill publications.
2. Brain W Kernighan and Dennis M Ritchie - The 'C' Programming language" - Pearson publications.
3. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publications.
4. Yashavant Kanetkar - Let Us 'C' – BPB Publications.

GUIDELINES TO THE PAPER SETTER

BLUE PRINT

Unit No.	Essay Questions	Short Answer Questions
I	3 (Section-A)	Nil (Section-C)
II	2 (Section-A)	3 (Section-C)
III	2 (Section-B)	2 (Section-C)
IV	2 (Section-B)	2 (Section-C)
V	1 (Section-B)	1 (Section-C)

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Batch 2022-2025
SRI Y.N.COLLEGE (AUTONOMOUS): NARSAPUR
I B.Sc. (Computer Science): I Semester under CBCS w.e.f 2020-21
PAPER – I
PROBLEM SOLVING IN 'C'

SYLLABUS DEVIATION

S.No	Topics Reviewed	Added Topics	Justification
1.	Unit-1: General Fundamentals of Computers	**General Fundamentals:** Input and Output devices. **Number systems:** Working with binary, octal, decimal and Hexa decimal numbering system. **Operating System:** Operating System, Types of Operating system; Functions of Operating Systems. Windows basics: Start menu, icons, MS-Windows - Desktop, My Computer, My Documents, Pictures, Music, Videos, Recycle Bin, and Task Bar - Control Panel.	For better Understanding and to impart in depth knowledge on the basic fundamentals.

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Batch 2022-2025
SRI Y.N.COLLEGE (AUTONOMOUS): NARSAPUR
I B.Sc., (Computer Science): I Semester under CBCS w.e.f 2020-2021
PAPER – I
PROBLEM SOLVING IN 'C'
SEMESTER-I

Time: 3 Hours **Max.Marks: 75**

Note: 1. Answer Any Five Questions by choosing at least two from Section-A and Section-B.
2. Each one carries 10 marks.

5 x 10 =50M

SECTION-A

1. Essay question from Unit-I.
2. Essay Question from Unit-I.
3. Essay Question from Unit-I.
4. Essay Question from Unit-II.
5. Essay Question from Unit-II.

SECTION-B

6. Essay Question from Unit-III.
7. Essay Question from Unit-III.
8. Essay Question from Unit-IV.
9. Essay Question from Unit-IV.
10. Essay Question from Unit-V.

SECTION-C

Answer any five questions from the following. Each one carries 5 marks. 5 x 5= 25M

11. Short Question from Unit-II.
12. Short Question from Unit-II.
13. Short Question from Unit-II.
14. Short Question from Unit-III.
15. Short Question from Unit-III.
16. Short Question from Unit-IV.
17. Short Question from Unit-IV.
18. Short Question from Unit-V.

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PAPER – I
PROBLEM SOLVING IN 'C' LAB

SEMESTER-I

1. Write a program to check whether the given number is Armstrong or not.
2. Write a program to find the sum of individual digits of a positive integer..
3. Write a program to generate the first n terms of the Fibonacci sequence.
4. Write a program to find both the largest and smallest number in a list of integer values
5. Write a program to demonstrate refection of parameters in swapping of two integer values usingCall by Value & Call by Address
6. Write a program that uses functions to add two matrices.
7. Write a program to calculate factorial of given integer value using recursive functions
8. Write a program for multiplication of two N X N matrices.
9. Write a program to perform various string operations.
10. Write a program to search an element in a given list of values.
11. Write a program to sort a given list of integers in ascending order.
12. Write a program to calculate the salaries of all employees using ***Employee (ID, Name,Designation, Basic Pay, DA, HRA, Gross Salary, Deduction, Net Salary)*** structure.
    a. DA is 30 % of Basic Pay
    b. HRA is 15% of Basic Pay
    c. Deduction is 10% of (Basic Pay + DA)
    d. Gross Salary = Basic Pay + DA+ HRA
    e. Net Salary = Gross Salary – Deduction
13. Write a program to illustrate pointer arithmetic.
14. Write a program to read the data character by character from a file.
15. Write a program to create ***Book (ISBN, Title, Author, Price, Pages, Publisher)*** structureand store book details in a file and perform the following operations
    a. Add book details
    b. Search a book details for a given ISBN and display book details, if available
    c. Update a book details using ISBN
    d. Delete book details for a given ISBN and display list of remaining Books.

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Batch 2022-2025
SRI Y.N.COLLEGE (AUTONOMOUS): NARSAPUR
I B.Sc., (Computer Science): II Semester under CBCS w.e.f 2020-2021
PAPER – II
DATA STRUCTURES USING 'C'
SEMESTER-II

MID-1

UNIT – I:

Introduction to Data Structures: Introduction to the Theory of Data Structures, Data Representation, Abstract Data Types, Data Types, Primitive Data Types, Data Structure and Structured Type, Atomic Type, Difference between Abstract Data Types, Data Types, and Data Structures, Refinement Stages.

Principles of Programming and Analysis of Algorithms: Software Engineering, Program Design, Algorithms, Different Approaches to Designing an Algorithm, Complexity, Big 'O' Notation, Algorithm Analysis, Structured Approach to Programming, Recursion, Tips and Techniques for Writing Programs in 'C'.

UNIT – II:

Arrays: Introduction to Linear and Non- Linear Data Structures, One- Dimensional Arrays, Array Operations, Two- Dimensional Arrays, Multidimensional Arrays, Pointers and Arrays, an Overview of Pointers.

Linked Lists: Introduction to Linked Lists, Dynamic Memory Allocation, Basic Linked List Operations, Doubly Linked List, Circular Linked List, Atomic Linked List, Linked List in Array, Linked List versus Array;.

MID-II

UNIT – III:

Stacks: Introduction to Stacks, Stack as an Abstract Data Type, Representation of Stacks through Arrays, Representation of Stacks through Linked Lists, Applications of Stacks, Stacks and Recursion
Queues: Introduction, Queue as an Abstract data Type, Representation of Queues, Circular Queues, Double Ended Queues- Dequeues, Priority Queues, Application of Queues.

UNIT – IV:

Trees: Definition of tree -Tree Terminology - Types of Trees - Operations on Trees.
Binary Trees: Introduction to Non- Linear Data Structures, Introduction Binary Trees, Basic Definition of Binary Trees, Properties of Binary Trees, Representation of Binary Trees, Operations on a Binary Search Tree, Binary Tree Traversal, Counting Number of Binary Trees, Applications of Binary Tree

UNIT – V:

Searching and sorting: Sorting – An Introduction, Bubble Sort, Insertion Sort, Merge Sort; Searching –

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An Introduction, Linear or Sequential Search, Binary Search, Indexed Sequential Search.

Graphs: Introduction to Graphs, Terms Associated with Graphs, Sequential Representation of Graphs, Linked Representation of Graphs, Traversal of Graphs, Spanning Trees, Shortest Path, Application of Graphs.

BOOKS:

1. "Data Structures using C", ISRD group Second Edition, TMH.
2. "Data Structures through C", YashavantKanetkar, BPB Publications
3. "Data Structures Using C" Balagurusamy E. TMH

GUIDELINES TO THE PAPER SETTER

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Unit No.	Essay Questions	Short Answer Questions
I	**2** (Section-**A**)	**2** (Section-**C**)
II	**3** (Section-**A**)	**2** (Section-**C**)
III	**2** (Section-**B**)	**2** (Section-**C**)
IV	**1** (Section-**B**)	**1** (Section-**C**)
V	**2** (Section-**B**)	**1** (Section-**C**)

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Batch 2022-2025
SRI Y.N.COLLEGE (AUTONOMOUS): NARSAPUR
I B.Sc. (Computer Science): II Semester under CBCS w.e.f 2020-21
PAPER – II
DATA STRUCTURES USING 'C' LAB
SEMESTER-II

SYLLABUS DEVIATION

S.No	Topics Reviewed	Added Topics	Justification
4.	Unit-4:	Trees: Definition of tree-Tree Terminology-Types of Trees-Operations on Trees.	For better Understanding about the concept.

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PAPER – II
DATA STRUCTURES USING 'C'
SEMESTER-II

Time: 3 Hours **Max.Marks: 75**

Note:1. Answer Any Five Questions by choosing at least two from Section-A and Section-B.

2. Each one carries 10 marks. **5 x 10 =50M**

SECTION-A

1. Essay question from Unit-I.
2. Essay Question from Unit-I.
3. Essay Question from Unit-II.
4. Essay Question from Unit-II.
5. Essay Question from Unit-II.

SECTION-B

6. Essay Question from Unit-III.
7. Essay Question from Unit-III.
8. Essay Question from Unit-IV.
9. Essay Question from Unit-V.
10. Essay Question from Unit-V.

SECTION-C

Answer any five questions from the following. Each one carries 5 marks. **5 x 5= 25M**

11. Short Question from Unit-I.
12. Short Question from Unit-I.
13. Short Question from Unit-II.
14. Short Question from Unit-II.
15. Short Question from Unit-III.
16. Short Question from Unit-III.
17. Short Question from Unit-IV.
18. Short Question from Unit-V.

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Batch 2022-2025
SRI Y.N.COLLEGE (AUTONOMOUS): NARSAPUR
I B.Sc. (Computer Science): II Semester under CBCS w.e.f 2020-21
PAPER – II
DATA STRUCTURES USING 'C' LAB
SEMESTER-II

1. Write a program to read 'N' numbers of elements into an array and also perform the following operation on an array
    a. Add an element at the begging of an array
    b. Insert an element at given index of array
    c. Update a element using a values and index
    d. Delete an existing element

2. Write a program using stacks to convert a given
    a. postfix expression to prefix
    b. prefix expression to postfix
    c. infix expression to postfix

3. Write Programs to implement the Stack operations using an array
4. Write Programs to implement the Stack operations using Liked List.
5. Write Programs to implement the Queue operations using an array.
6. Write Programs to implement the Queue operations using Liked List.
7. Write a program for arithmetic expression evaluation.
8. Write a program for Binary Search Tree Traversals
9. Write a program to implement dequeue using a doubly linked list.
10. Write a program to search an item in a given list using the following Searching Algorithm
    a. Linear Search
    b. Binary Search.

11. Write a program for implementation of the following Sorting Algorithms
    a. Bubble Sort
    b. Insertion Sort
    c. Quick Sort

12. Write a program for polynomial addition using single linked list
13. Write a program to find out shortest path between given Source Node and Destination Node in a given graph using Dijkstrar's algorithm.
14. Write a program to implement Depth First Search graph traversals algorithm
15. Write a program to implement Breadth First Search graph traversals algorithm

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THEORY PAPER – III
DATABASE MANAGEMENT SYSTEM
SEMESTER-III

Aim and objectives of Course:

- The objective of the course is to introduce the design and development of databases with special emphasis on relational databases.

Learning outcomes of Course: Upon successful completion of the course, a student will be able to:

- Gain knowledge of Database and DBMS.
- Understand the fundamental concepts of DBMS with special emphasis on relational data model.
- Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database
- Model data base using ER Diagrams and design database schemas based on the model.
- Create a small database using SQL.
- Store, Retrieve data in database.

Detailed Syllabus: (Five units with each unit having 12 hours of class work)

UNIT I:

Overview of Database Management System: Introduction to data, information, database, database management systems, file-based system, Drawbacks of file-Based System, database approach, Classification of Database Management Systems, advantages of database approach, Various Data Models, Components of Database Management System, three schema architecture of data base, costs and risks of database approach.

UNIT II:

Entity-Relationship Model: Introduction, the building blocks of an entity relationship diagram, classification of entity sets, attribute classification, relationship degree, relationship classification, reducing ER diagram to tables, enhanced entity-relationship model (EER model), generalization and specialization, IS A relationship and attribute inheritance, multiple inheritance, constraints on specialization and generalization, advantages of ER modeling.

UNIT III:

Relational Model: Introduction, CODD Rules, relational data model, concept of key, relational integrity, relational algebra, relational algebra operations, advantages of relational algebra, limitations of relational algebra, relational calculus, tuple relational calculus, domain relational Calculus (DRC), Functional dependencies

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Normalization: Normalization, the need for Normalization, Normalization Process: Conversion in to First Normal Form, Conversion in to Second Normal form, Conversion into third Normal form

UNIT IV:

Structured Query Language: Introduction, History of SQL Standard, Commands in SQL, Data Types in SQL, Data Definition Language, Selection Operation, Projection Operation, Aggregate functions, Data Manipulation Language, Table Modification Commands, Join Operation, Set Operations, View, Sub Query.

UNIT V

PL/SQL: Introduction, Shortcomings of SQL, Structure of PL/SQL, PL/SQL Language Elements, Data Types, Operators Precedence, Control Structure, Steps to Create a PL/SQL, Program, Iterative Control, Procedure, Function, Database Triggers, Types of Triggers.

Transaction Management and Concurrency Control: What is transaction, Transaction properties, Transaction management with SQL, Transaction Log, Concurrency control, Concurrency control with locking Methods: Database, Table, Page, row and field level locks; Two phase locking to ensure serializability; Deadlock, Database Recovery Management: Deferred-Write Technique;

Prescribed Books:

1. Fundamentals of Relational Database Management Systems by S. Sumathi, S. Esakkirajan, Springer Publications
2. Database System Concepts by Abraham Silberschatz, Korth, and S. Sudarshan, McGrawhill
3. Database Management Systems by Raghu Ramakrishnan, McGrawhill

REFERENCES:

1. Principles of Database Systems by J. D. Ullman
2. Fundamentals of Database Systems by R. Elmasri and S. Navathe
3. SQL: The Ultimate Beginners Guide by Steve Tale.

GUIDELINES TO THE PAPER SETTER

BLUE PRINT

Unit no	Essay Questions	Short Answer Questions
I	3 (Section-A)	1
II	2 (Section-A)	2
III	2 (Section-B)	1
IV	2 (Section-B)	2
V	1 (Section-B)	2

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THEORY PAPER – III
DATABASE MANAGEMENT SYSTEM
SEMESTER-III

ADDITIONAL INPUTS

S.No	Topics Reviewed	Topics Added	Justification
1.	Unit-5:	**Transaction Management and Concurrency Control:** What is transaction, Transaction properties, Transaction management with SQL, Transaction Log, Concurrency control, Concurrency control with locking Methods: Database, Table, Page, row and field level locks; Two phase locking to ensure serializability; Deadlock, Database Recovery Management: Deferred-Write Technique;	For additional knowledge of the student.

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PAPER-III
DATABASE MANAGEMENT SYSTEM
III SEMESTER

Time: 3 Hours **Max. Marks: 75**

NOTE: 1. Answer Any FIVE Questions by choosing at least two from Section-A and Section-B
2. Each one carries 10 marks.

5X10=50

SECTION-A

1. Essay Question from Unit-1.
2. Essay Question from Unit-1.
3. Essay Question from Unit-1.
4. Essay Question from Unit-2.
5. Essay Question from Unit-2.

SECTION-B

6. Essay Question from Unit-3.
7. Essay Question from Unit-3.
8. Essay Question from Unit-4
9. Essay Question from Unit-4.
10. Essay Question from Unit-5.

SECTION-C

Note: 1. Answer any FIVE questions from the following.
2. Each one Carries 5 Marks. **5X5=25**

11. Short Answer Question from Unit-1.
12. Short Answer Question from Unit-2
13. Short Answer Question from Unit-2.
14. Short Answer Question from Unit-3.
15. Short Answer Question from Unit-4.
16. Short Answer Question from Unit-4.
17. Short Answer Question from Unit-5.
18. Short Answer Question from Unit-5.

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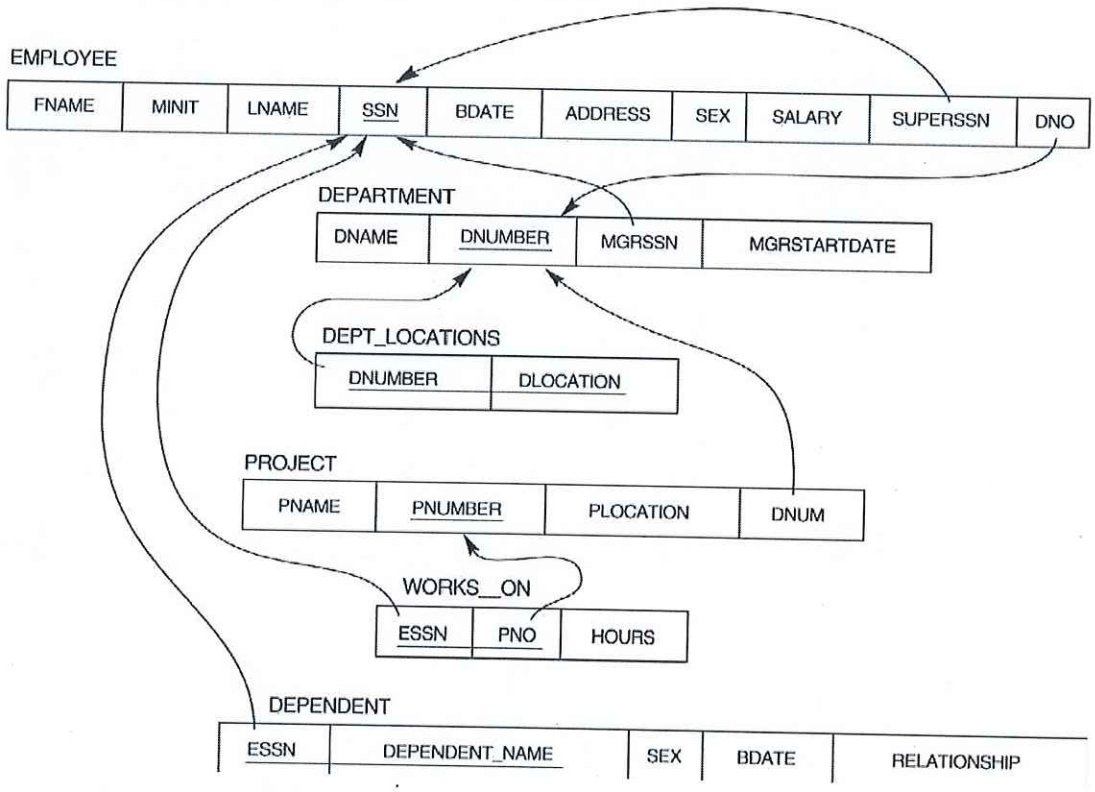
PAPER-III
DATABASE MANAGEMENT SYSTEM LAB
III SEMESTER

Details of Lab Syllabus: DATABASE MANAGEMENT SYSTEM LAB

1. Draw ER diagram for hospital administration
2. Creation of college database and establish relationships between tables
3. Relational database schema of a company is given in the following figure.

Relational Database Schema - COMPANY



Questions to be performed on above schema

1. Create above tables with relevant ***Primary Key, Foreign Key and other constraints***
2. Populate the tables with data
3. Display all the details of all employees working in the company.
4. Display ***ssn, lname, fname, address*** of employees who work in department no 7.
5. Retrieve the ***Birthdate and Address*** of the employee whose name is 'Franklin T.Wong'
6. Retrieve the name and salary of every employee.
7. Retrieve all distinct salary values
8. Retrieve all employee names whose address is in 'Bellaire'
9. Retrieve all employees who were born during the 1950s

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10. Retrieve all employees in department 5 whose salary is between 50,000 and60,000(inclusive)
11. Retrieve the names of all employees who do not have supervisors
12. Retrieve SSN and department name for all employees
13. Retrieve the name and address of all employees who work for the 'Research' department
14. For every project located in 'Stafford', list the project number, the controlling department number, and the department manager's last name, address, and birth date.
15. For each employee, retrieve the employee's name, and the name of his or her immediate supervisor.
16. Retrieve all combinations of Employee Name and Department Name
17. Make a list of all project numbers for projects that involve an employee whose last name is 'Narayan' either as a worker or as a manager of the department that controls the project.
18. Increase the salary of all employees working on the 'ProductX' project by 15%. Retrieve employee name and increased salary of these employees.
19. Retrieve a list of employees and the project name each works in, ordered by the employee's department, and within each department ordered alphabetically by employee first name.
20. Select the names of employees whose salary does not match with salary of any employee in department.
21. Retrieve the employee numbers of all employees who work on project located in Bellaire, Houston, or Stafford.
22. Find the sum of the salaries of all employees, the maximum salary, the minimum salary, andthe average salary. Display with proper headings
23. Find the sum of the salaries and number of employees of all employees of the 'Marketing' department, as well as the maximum salary, the minimum salary, and the average salary in this department.
24. Select the names of employees whose salary is greater than the average salary of all employees in department 10.
25. Delete all dependents of employee whose ***ssn is '123456789'***.
26. Perform a query using alter command to drop/add field and a constraint in Employee table.

PRACTICAL BREAK UP OF MARKS:

1.	Procedure/Steps -	10 Marks
2.	Execution -	20 Marks
3.	Practical Record -	10 Marks
4.	Viva -	10 Marks
	Total	50 Marks

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THEORY PAPER – IV
OBJECT ORIENTED PROGRAMMING USING JAVA
SEMESTER-IV

Aim and objectives of Course:

- To introduce the fundamental concepts of Object-Oriented programming and to design & implement object oriented programming concepts in Java.

Learning outcomes of Course:

- Understand the benefits of a well-structured program
- Understand different computer programming paradigms
- Understand underlying principles of Object-Oriented Programming in Java
- Develop problem-solving and programming skills using OOP concepts
- Develop the ability to solve real-world problems through software developmentin high-levelprogramming language like Java

Detailed Syllabus: (Five units with each unit having 12 hours of class work)

UNIT I:

Introduction to Java: Features of Java, The Java virtual Machine, Parts of Java, Java Program Structure, Implementing Java Program, Differences between C, C++ and Java.

Naming Conventions and Data Types: Naming Conventions in Java, Data Types in Java, Literals

Operators in Java: Operators, Priority of Operators.

Control Statements in Java: if... else Statement, do... while Statement, while Loop, for Loop, switch Statement, break Statement, continue Statement, return Statement.

Input and Output: Accepting Input from the Keyboard, Reading Input with Java.util.Scanner Class, Displaying Output with System.out.printf(), Displaying Formatted Output with String.format().

Arrays: Types of Arrays, Three Dimensional Arrays (3D array), array name. length, Command Line Arguments

UNIT II:

Strings: Creating Strings, String Class Methods, String Comparison, Immutability of Strings, Vectors, and Wrapper classes.

Introduction to OOPs: Problems in Procedure Oriented Approach, Features of Object- Oriented Programming System (OOPS), Benefits of OOPS and Applications of OOPS.

Classes and Objects: Object Creation, Initializing the Instance Variables, Access Specifiers, Constructors.

Methods in Java: Method Header or Method Prototype, Method Body, Understanding Methods, Static Methods, Static Block, The keyword 'this', Instance Methods, Passing Primitive Data Types to Methods, Passing Objects to Methods, Passing Arrays to Methods, Recursion, Factory Methods, Overloading methods and overriding methods,

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Inheritance: Inheritance, Types of Inheritance; The keyword 'super', The Protected Specifier.

UNIT III:

Polymorphism: Polymorphism with Variables, Polymorphism using Methods, Polymorphism with Static Methods, Polymorphism with Private Methods, Polymorphism with Final Methods, final Class.

Type Casting: Types of Data Types, Casting Primitive Data Types, Casting Referenced Data Types, The Object Class.

Abstract Classes: Abstract Method and Abstract Class.

Interfaces: Interface, Multiple Inheritance using Interfaces.

Packages: Package, Different Types of Packages, The JAR Files, Interfaces in a Package, Creating Sub Package in a Package, Access Specifiers in Java, Creating API Document.

Exception Handling: Errors in Java Program, Exceptions, throws Clause, throw Clause, Types of Exceptions, Re – throwing an Exception.

UNIT – IV

Streams: Stream, Creating a File using FileOutputStream, Reading Data from a File uingFileInputStream, Creating a File using FileWriter, Reading a File using FileReader, Zipping and Unzipping Files, Serialization of Objects, Counting Number of Characters in a File, File Copy, File Class

Threads: Single Tasking, Multi Tasking, Uses of Threads, Creating a Thread and Running it, Terminating the Thread, Single Tasking Using a Thread, Multi Tasking Using Threads, Multiple Threads Acting on Single Object, Thread Class Methods, Deadlock of Threads, Thread Communication, Thread Priorities, thread Group, Daemon Threads, Applications of Threads, Thread Life Cycle.

UNIT V:

Applets: Creating an Applet, Local and Remote Applets, Differences between Applets and Applications, Uses of Applets, <APPLET> tag, A Simple Applet, An Applet with Swing Components, Animation in Applets, A Simple Game with an Applet, Applet Parameters, Applet Life Cycle

Java Database Connectivity: Database Servers, Database Clients, JDBC (Java Database Connectivity), Working with Oracle Database, Working with MySQL Database, Stages in a JDBC Program, Registering the Driver, Connecting to a Database, Preparing SQL Statements, Using jdbc– odbc Bridge Driver to Connect to Oracle Database, Retrieving Data from MySQL Database, Retrieving Data from MS Access Database, Stored Procedures and Callable Statements, Types of Result Sets.

Prescribed Text Books:

1. Core Java: An Integrated Approach, Authored by Dr. R. Nageswara Rao & Kogent LearningSolutions Inc.
2. E.Balaguruswamy, Programming with JAVA, A primer, 3e, TATA McGraw- Hill Company.

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REFERENCES:

1. John R. Hubbard, Programming with Java, Second Edition, Schaum's outlineSeries, TMH.
2. Deitel & Deitel. Java TM: How to Program, PHI (2007)

GUIDELINES TO THE PAPER SETTER

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Unit No	Essay Questions	Short Answer Questions
I	3 (Section-A)	NIL
II	2 (Section-A)	2
III	3 (Section-B)	2
IV	1 (Section-B)	2
V	1 (Section-B)	2

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THEORY PAPER – IV
OBJECT ORIENTED PROGRAMMING USING JAVA
SEMESTER-IV

ADDITIONAL INPUTS

S.No	Topics Reviewed	Topics Added	Justification
2.	Unit-1:	1. Java Program Structure, 2. Implementing Java Program, 3. Differences between C, C++ and Java.	For better understanding of the subject
3.	Unit-2:	1. Vectors and Wrapper classes. 2. Benefits of OOPS and Applications of OOPS. 3. Overloading methods and overriding methods,	Add to impart in depth knowledge on the specific topics
4.	Unit-5:	1. Applet Life Cycle 2. Local and Remote Applets, 3. Differences between Applets and Applications,	Add to impart in depth knowledge on the specific topics

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PAPER-IV
OBJECT ORIENTED PROGRAMMING USING JAVA
IV SEMESTER

Time: 3 Hours **Max. Marks: 75**

NOTE:1. Answer Any FIVE Questions by choosing at least two from Section-A and Section-B.
2. Each one carries 10 marks. **5X10=50**

SECTION-A

1. Essay Question from Unit-1.
2. Essay Question from Unit-1.
3. Essay Question from Unit-1.
4. Essay Question from Unit-2.
5. Essay Question from Unit-2.

SECTION-B

6. Essay Question from Unit-3.
7. Essay Question from Unit-3.
8. Essay Question from Unit-3
9. Essay Question from Unit-4.
10. Essay Question from Unit-5.

SECTION-C

Note: 1. Answer any FIVE questions from the following.
2. Each one Carries 5 Marks. **5X5=25**

11. Short Answer Question from Unit-2.
12. Short Answer Question from Unit-2
13. Short Answer Question from Unit-3.
14. Short Answer Question from Unit-3.
15. Short Answer Question from Unit-4.
16. Short Answer Question from Unit-4.
17. Short Answer Question from Unit-5.
18. Short Answer Question from Unit-5.

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OBJECT ORIENTED PROGRAMMING USING JAVA

SEMESTER-IV

Details of Lab Syllabus: Object Oriented Programming using Java Lab

1. Write a program to read ***Student Name, Reg.No, Marks [5]*** and calculate ***Total,Percentage,Result***. Display all the details of students
2. Write a program to perform the following String Operations
   a. Read a string
   b. Find out whether there is a given substring or not
   c. Compare existing string by another string and display status
   d. Replace existing string character with another character
   e. Count number of works in a string
3. Java program to implements Addition and Multiplication of two N X N matrices.
4. Java program to demonstrate the use of Constructor.
5. Calculate area of the following shapes using method overloading.
   a. Triangle
   b. Rectangle
   c. Circle
   d. Square
6. Implement inheritance between ***Person (Aadhar, Surname, Name, DOB, and Age)*** and ***Student (Admission Number, College, Course, Year)***classes where ReadData(),DisplayData() are overriding methods.
7. Java program for implementing Interfaces
8. Java program on Multiple Inheritance.
9. Java program for to display ***Serial Number from 1 to N*** by creating two Threads
10. Java program to demonstrate the following exception handlings
    a. Divided by Zero
    b. Array Index Out of Bound
    c. File Not Found
    d. Arithmetic Exception
    e. User Defined Exception
11. Create an Applet to display different shapes such as Circle, Oval, Rectangle, Square andTriangle.
12. Write a program to create ***Book (ISBN,Title, Author, Price, Pages, Publisher)*** structureand store book details in a file and perform the following operations
    a. Add book details
    b. Search a book details for a given ISBN and display book details, if available
    c. Update a book details using ISBN
    d. Delete book details for a given ISBN and display list of remaining Books

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RECOMMENDED CO-CURRICULAR ACTIVITIES:

(Co-curricular activities shall not promote copying from textbook or from otherswork and shall encourageself/independent and group learning)

A. Measurable

1. Assignments (in writing and doing forms on the aspects of syllabuscontent and outside thesyllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individualactivity))
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))
4. Study projects (by very small groups of students on selected local real- time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity)

B. General

1. Group Discussion
2. Try to solve MCQ's available online.
3. Others

RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Problem-solving exercises,
4. Practical assignments and laboratory reports,
5. Observation of practical skills,
6. Individual and group project reports like "Creating Text Editor in C".
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations,
10. Peers and self-assessment, outputs form individual and collaborative work.

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THEORY PAPER – V
OPERATING SYSTEM
SEMESTER-IV

Aim and objectives of Course:

This course aims to introduce the structure and organization of a file system. It emphasizes various functions of an operating system like memory management, process management, device management, etc.

Learning outcomes of Course:

- Upon successful completion of the course, a student will be able to:
- Know Computer system resources and the role of operating system in resource managementwith algorithms
- Understand Operating System Architectural design and its services.
- Gain knowledge of various types of operating systems including Unix and Android.
- Understand various process management concepts including scheduling, synchronization, and deadlocks.
- Have a basic knowledge about multithreading.
- Comprehend different approaches for memory management.
- Understand and identify potential threats to operating systems and the security features designto guard against them.
- Specify objectives of modern operating systems and describe how operating systems haveevolved over time.
- Describe the functions of a contemporary operating system

Detailed Syllabus: (Five units with each unit having 12 hours of class work)

UNIT I:

What is Operating System? History and Evolution of OS, Basic OS functions, Resource Abstraction, Types of Operating Systems– Batch Systems, Multiprogramming Systems, Time Sharing Systems; Operating Systems for Personal Computers, Workstations and Hand-held Devices, Real time Systems, Open-Source Operating systems.

UNIT II:

User Mode and Kernel mode, Kernel, System Calls, Types of System calls and System Programs, System View of the Process and Resources, Process, Process States and Process Control Block, Process Hierarchy, Threads, Threading Issues, Thread Libraries; Process Scheduling, Non-Preemptive Scheduling Algorithms: First Come First Serve and Shortest job First; Pre-emptive Scheduling Algorithms: Priority scheduling and Round Robin scheduling.

UNIT III:

Process Management: Deadlock, Deadlock Characterization, Necessary and Sufficient Conditions for Deadlock, Deadlock Handling Approaches: Deadlock Prevention, Deadlock Avoidance and Deadlock Detection and Recovery; Cooperative and Independent Processes, Critical Section, Semaphores,

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Methods for Inter- process Communication; Process Synchronization, Classical Process Synchronization Problems: Producer-Consumer, Reader-Writer.

UNIT IV:

Memory Management: Physical and Virtual Address Space; Memory Allocation Strategies– Fixed and -Variable Partitions, Paging, Segmentation, Virtual Memory: Demand Paging, Copy-on-write, Page Replacement, Page Replacement algorithms: First in First out (FIFO), Optimal Page Replacement and Least recently used; allocation of frames, Thrashing.

UNIT V:

File and I/O Management, OS security: File Concepts, File Operations, file access methods: Sequential access and Direct access; File Allocation Methods: Contiguous allocation, Linked allocation and Indexed allocation; Directory Structure, Free space Management: Bit Vector, Linked list, Grouping and Counting; Device Management, Pipes, Buffer, Shared Memory, Security Policy Mechanism, Protection, Authentication and Internal Access Authorization

Introduction to Android Operating System, Android Development Framework, Android Application Architecture, Android Process Management and File System, Small Application Development using Android Development Framework.

Prescribed Text Books:

1. Operating System Principles by Abraham Silberschatz, Peter Baer Galvin and Greg Gagne (7th Edition) Wiley India Edition.
2. Operating Systems: Internals and Design Principles by Stallings (Pearson)

References:

1. Operating Systems by J. Archer Harris (Author), Jyoti Singh (Author) (TMH)
2. Online Resources for UNIT V

GUIDELINES TO THE PAPER SETTER

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Unit no	Essay Questions	Short Answer Questions
I	3 (Section-A)	NIL
II	2 (Section-A)	2
III	2 (Section-B)	2
IV	2 (Section-B)	2
V	1 (Section-B)	2

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OPERATING SYSTEM
SEMESTER-IV

ADDITIONAL INPUTS

S.No	Topics Reviewed	Topics Added	Justification
1.	Unit-1:	Open-Source Operating systems.	For better understanding of the topic
2.	Unit-2:	Types of system calls, Process, Process States, Process Control Block	For better understanding of the topic
3.	Unit-4:	Demand Paging, Copy-on-write, Page Replacement, Page Replacement algorithms: First in First out (FIFO), Optimal Page Replacement and Least recently used; allocation of frames, Thrashing.	For better understanding of the topic
4.	Unit-5:	File Concepts: File access methods: Sequential access and Direct access; Contiguous allocation, Linked allocation and Indexed allocation; Free space Management: Bit Vector, Linked list, Grouping and Counting;	Add to impart in depth knowledge on the specific topics

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Batch 2021-2024
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II B.Sc., (Computer Science): IV Semester under CBCS w.e.f 2021-2022
PAPER-V
OPERATING SYSTEM
IV SEMESTER

Time: 3 Hours **Max. Marks: 75**

NOTE: 1. Answer Any FIVE Questions by choosing at least two from Section-A and Section-B
2. Each one carries 10 marks.

5X10=50

SECTION-A

1. Essay Question from Unit-1.
2. Essay Question from Unit-1.
3. Essay Question from Unit-1.
4. Essay Question from Unit-2.
5. Essay Question from Unit-2.

SECTION-B

6. Essay Question from Unit-3.
7. Essay Question from Unit-3.
8. Essay Question from Unit-4
9. Essay Question from Unit-4.
10. Essay Question from Unit-5.

SECTION-C

Note: 1. Answer any FIVE questions from the following.
2. Each one Carries 5 Marks.

5X5=25

11. Short Answer Question from Unit-2.
12. Short Answer Question from Unit-2
13. Short Answer Question from Unit-3.
14. Short Answer Question from Unit-3.
15. Short Answer Question from Unit-4.
16. Short Answer Question from Unit-4.
17. Short Answer Question from Unit-5.
18. Short Answer Question from Unit-5.

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PAPER-V
OPERATING SYSTEM
IV SEMESTER

Lab Syllabus:

Operating Systems Lab using C/Java

1. Write a program to implement Round Robin CPU Scheduling algorithm
2. Simulate SJF CPU Scheduling algorithm
3. Write a program the FCFS CPU Scheduling algorithm
4. Write a program to Priority CPU Scheduling algorithm
5. Simulate Sequential file allocation strategies
6. Simulate Indexed file allocation strategies
7. Simulate Linked file allocation strategies
8. Simulate MVT and MFT memory management techniques
9. Simulate Single level directory File organization techniques
10. Simulate Two level File organization techniques
11. Simulate Hierarchical File organization techniques
12. Write a program for Bankers Algorithm for Dead Lock Avoidance
13. Implement Bankers Algorithm Dead Lock Prevention.
14. Simulate all Page replacement algorithms.
    a) FIFO
    b) LRU
    c) LFU
15. Simulate Paging Techniques of memory management

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RECOMMENDED CO-CURRICULAR ACTIVITIES:

(Co-curricular activities shall not promote copying from textbook or from otherswork and shall encourageself/independent and group learning)

A. Measurable

1. Assignments (in writing and doing forms on the aspects of syllabus contentand outsidethe syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))
4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity

B. General

1. Group Discussion
2. Try to solve MCQ's available online.
3. Others

RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Problem-solving exercises,
4. Practical assignments and laboratory reports,
5. Observation of practical skills,
6. Individual and group project reports like "Creating Text Editor in C".
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations, Peers and self-assessment, outputs form individual and collaborative work

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III B.Sc. (Computer Science): V Semester under CBCS w.e.f 2022-2023
Web Interface Designing Technologies
THEORY PAPER – VI (A)
SEMESTER-V

I. **Learning Outcomes:** Students after successful completion of the course will be able to:
   1. Understand and appreciate the web architecture and services.
   2. Gain knowledge about various components of a website.
   3. Demonstrate skills regarding creation of a static website and an interface to dynamic website.
   4. Learn how to install word press and gain the knowledge of installing various plug-into use in their websites.

II. **Syllabus:** (Total Hours: 90 including Teaching, Lab, and Field training, Unit tests etc.)

Unit – I: (10 hours)

HTML: Introduction to web designing, difference between web applications and desktop applications, introduction to HTML, HTML structure, elements, attributes, headings, paragraphs, styles, colours, HTML formatting, Quotations, Comments, images, tables, lists, blocks and classes, HTML CSS, HTML frames, file paths, layout, symbols, HTML responsive.

Unit – II (10 hours)

HTML forms: HTML form elements, input types, input attributes, HTML5, HTML graphics, HTML media – video, audio, plug INS, you tube.

HTML API'S: Geo location, Drag/drop, local storage, HTML SSE.

CSS: CSS home, introduction, syntax, colours, back ground, borders, margins, padding, height/width, text, fonts, icons, tables, lists, position, over flow, float, CSS combinators, pseudo class, pseudo elements, opacity, tool tips, image gallery, CSS forms, CSS counters, CSS responsive.

Unit – III (10 hours)

Client side Validation: Introduction to JavaScript - What is DHTML, JavaScript, basics, variables, string manipulations, mathematical functions, statements, operators, arrays, functions. Objects in JavaScript - Data and objects in JavaScript, regular expressions, exception handling. DHTML with JavaScript - Data validation, opening a new window, messages and confirmations, the status bar, different frames, rollover buttons, moving images.

Unit – IV (10 hours)

Word press: Introduction to word press, servers like wamp, bitnami etc., installing and configuring word press, understanding admin panel, working with posts and pages, using editor, text formatting with shortcuts, working with media-Adding, editing, deleting media elements, working with widgets, menus.

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Unit – V (10 hours)

Working with themes: Installing Themes, Activating a Theme, Manually Uploading a Theme, Deleting a Theme; User and user roles and profiles.

Working with Links: Linking to Another Website, Opening a Link in a New Tab, Linking to a Page Within Your Site, Editing & Removing Links;

Word Press Plug-ins: About Word Press Plug-ins, Installing a Word Press Plug-in, Updating Plug-ins. Customizing the site, changing the appearance of site using CSS, protecting word press website from hackers.

References:

1. Chris Bates, Web Programming Building Internet Applications, Second Edition,Wiley (2007)
2. Paul S.Wang Sanda S. Katila, an Introduction to Web Design plus Programming, Thomson (2007).
3. Head First HTML and CSS, Elisabeth Robson, Eric Freeman, O'Reilly Media Inc.
4. An Introduction to HTML and JavaScript: for Scientists and Engineers, David R. Brooks. Springer, 2007
5. Schaum's Easy Outline HTML, David Mercer, Mcgraw Hill Professional.
6. Word press for Beginners, Dr.Andy Williams.
7. Professional word press, Brad Williams, David damstra, Hanstern.
8. Web resources:
    a. http://www.codecademy.com/tracks/web
    b. http://www.w3schools.com
    c. https://www.w3schools.in/wordpress-tutorial/
    d. http://www.homeandlearn.co.uk
9. Other web sources suggested by the teacher concerned and the college librarian including reading material.

GUIDELINES TO THE PAPER SETTER

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Unit no	Essay Questions	Short Answer Questions
I	3 (Section-A)	1
II	2 (Section-A)	2
III	3 (Section-B)	2
IV	1 (Section-B)	2
V	1 (Section-B)	1

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Web Interface Designing Technologies
THEORY PAPER – VI (A)
SEMESTER-V

ADDITIONAL INPUTS

S.No	Topics Reviewed	Topics Added	Justification
1.	Unit-5:	**Working with themes:** Installing Themes, Activating a Theme, Manually Uploading a Theme, Deleting a Theme; **Working with Links:** Linking to Another Website , Opening a Link in a New Tab, Linking to a Page Within Your Site , Editing & Removing Links; **Word Press Plug-ins:** About Word Press Plug-ins, Installing a Word Press Plug-in, Updating Plug-ins.	For better understanding of the students.

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Web Interface Designing Technologies
THEORY PAPER – VI (A)
SEMESTER-V

Time: 3 Hours **Max. Marks: 75**

NOTE: 1. Answer Any FIVE Questions by choosing at least two from Section-A and Section-B
2. Each one carries 10 marks.

5X10=50

SECTION-A

1. Essay Question from Unit-I
2. Essay Question from Unit-I
3. Essay Question from Unit-I
4. Essay Question from Unit-II
5. Essay Question from Unit-II

SECTION-B

6. Essay Question from Unit-III
7. Essay Question from Unit-III
8. Essay Question from Unit-III
9. Essay Question from Unit-IV
10. Essay Question from Unit-V

SECTION-C

Note: 1. Answer any FIVE questions from the following.
2. Each one Carries 5 Marks.

5X5=25

11. Short Answer Question from Unit-I
12. Short Answer Question from Unit-II
13. Short Answer Question from Unit-II
14. Short Answer Question from Unit-III
15. Short Answer Question from Unit-III
16. Short Answer Question from Unit-IV
17. Short Answer Question from Unit-IV
18. Short Answer Question from Unit-V

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Web Interface Designing Technologies
THEORY PAPER – VI (A)
SEMESTER-V

PRACTICAL SYLLABUS

I. Learning Outcomes:

On successful completion of this practical course, student shall be able to:

1. Create a basic website with the help of HTML and CSS.
2. Acquire the skill of installing word press and various plugins of Word press.
3. Create a static website with the help of Word press.
4. Create an interface for a dynamic website.
5. Apply various themes for their websites using Word press.

II. Practical (Laboratory) Syllabus: *(30 hrs.)*

HTML and CSS:

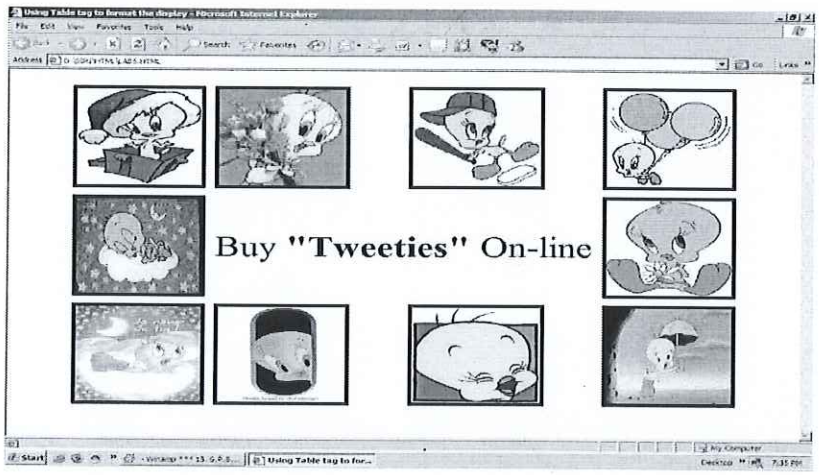
1. Create an HTML document with the following formatting options:

   (a)Bold, (b) Italics, (c) Underline, (d) Headings (Using H1 to H6 heading styles), (e) Font (Type, Size and Color), (f) Background (Colored background/Image in background), (g) Paragraph, (h) Line Break, (i) Horizontal Rule, (j) Pre tag

2. Create an HTML document which consists of:

   (a)Ordered List (b) Unordered List (c) Nested List (d) Image

3. Create a Table with four rows and five columns. Place an image in one column.
4. **Using "table" tag, align the images as follows:**



5. Create a menu form using html.
6. Style the menu buttons using css.

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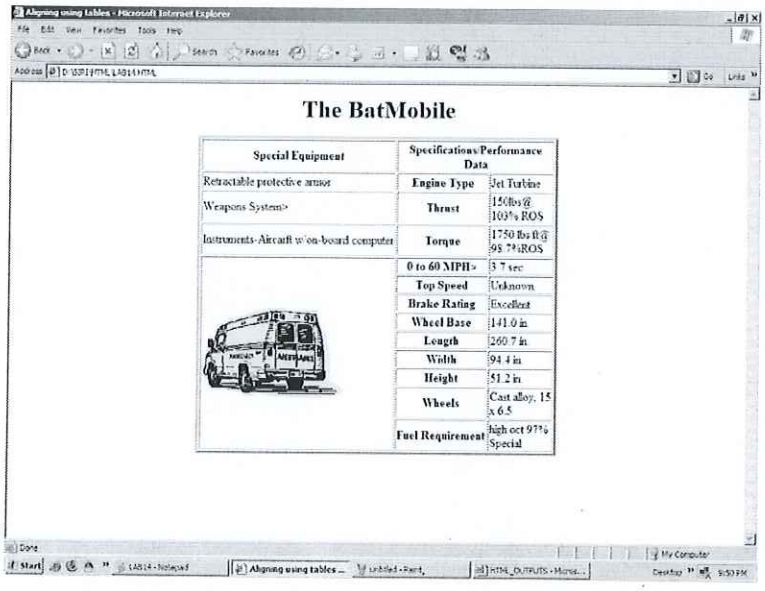
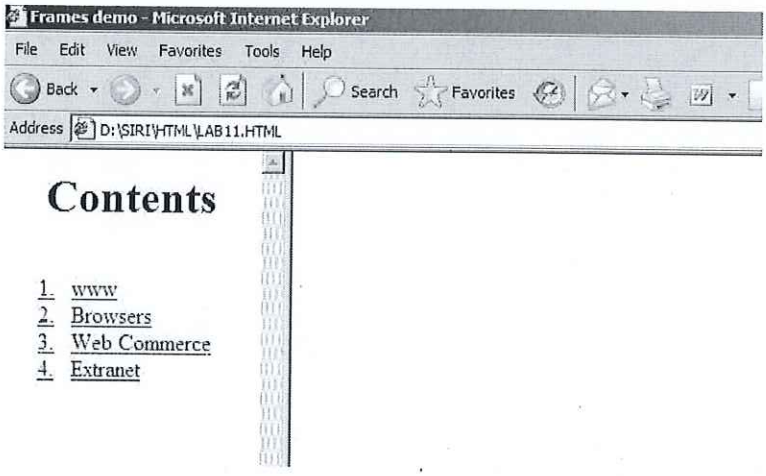
7. Create a form using HTML which has the following types of controls:

(a)Text Box (b) Option/radio buttons (c) Check boxes (d) Reset and Submit buttons

8. Embed a calendar object in your web page.
9. Create an applet that accepts two numbers and perform all the arithmetic operations on them.
10. Create nested table to store your curriculum.
11. Create a form that accepts the information from the subscriber of a mailing system.
12. Design the page as follows:



13. Create a help file as follows:



14. Create a webpage containing your bio data (assume the form and fields).
15. Write a html program including style sheets.
16. Write a html program to layers of information in web page.
17. Create a static webpage.

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Word press:

18. Installation and configuration of word press.
19. Create a site and add a theme to it.
20. Create a child theme
21. Create five pages on COVID – 19 and link them to the home page. .
22. Create a simple post with featured image.
23. Add an external video link with size 640 X 360.
24. Create a user and assign a role to him.
25. Create a login page to word press using custom links
26. Create a website for your college.

PRACTICAL BREAK UP OF MARKS:

1. Procedure/Steps -	10 Marks
2. Execution -	20 Marks
3. Practical Record -	10 Marks
4. Viva -	10 Marks
Total	50 Marks

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Batch 2020-2023
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III B.Sc. (Computer Science): V Semester under CBCS w.e.f 2022-2023
Web Applications Development using PHP & MYSQL
THEORY PAPER – VII (A)
SEMESTER-V

I. Learning Outcomes:

Students after successful completion of the course will be able to:

1. Write simple programs in PHP.
2. Understand how to use regular expressions, handle exceptions, and validate data using PHP.
3. Apply In-Built functions and Create User defined functions in PHP programming.
4. Write PHP scripts to handle HTML forms.
5. Write programs to create dynamic and interactive web based applications using PHPand MYSQL.
6. Know how to use PHP with a MySQL database and can write database driven web pages.

Unit-1: (10 hours)

The Building blocks of PHP: Variables, Data Types, Operators and Expressions, Constants.

Flow Control Functions in PHP: Switching Flow, Loops, Code Blocks and Browser Output.

Working with Functions: What is function?, Calling functions, Defining Functions, Returning the values from User-Defined Functions, Variable Scope, Saving state between Function callswith the static statement, more about arguments.

Unit-2: (10 hours)

Working with Arrays: What are Arrays? Creating Arrays, Some Array-Related Functions.

Working with Objects: Creating Objects, Object Instance Working with Strings,

Dates and Time: Formatting strings with PHP, Investigating Strings with PHP, Manipulating Strings with PHP, Using Date and Time Functions in PHP.

Unit-3: (10 hours)

Working with Forms: Creating Forms, Accessing Form Input with User defined Arrays, Combining HTML and PHP code on a single Page, Using Hidden Fields to save state, Redirecting the user, Sending Mail on Form Submission, and Working with File Uploads.

Working with Cookies and User Sessions: Introducing Cookies, Setting a Cookie with PHP, Session Function Overview, Starting a Session, Working with session variables, passing session IDs in the Query String, Destroying Sessions and Unsetting Variables, Using Sessions in an Environment with Registered Users.

Unit-4: (10 hours)

Working with Files and Directories: Including Files with inclue(), Validating Files, Creating and Deleting Files, Opening a File for Writing, Reading or Appending, Reading from Files, Writing or

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Appending to a File, Working with Directories, Open Pipes to and from Process Using popen(), Running Commands with exec(), Running Commands with system() or passthru().

Working with Images: Understanding the Image-Creation Process, Necessary Modifications to PHP, Drawing a New Image, Getting Fancy with Pie Charts, Modifying Existing Images, Image Creation from User Input

Unit-5: (10 hours)

MySQL: Introduction – Setting up account – Starting & terminating MySQL – Writing your own SQL programs – Record Selection Technology – Working with strings –Date & Time – Sorting Query Results.

Interacting with MySQL using PHP: MySQL Versus MySQLi Functions, Connecting to MySQL with PHP, Working with MySQL Data. Creating an Online Address Book: Planning and Creating Database Tables, Creating Menu, Creating Record Addition Mechanism, Viewing Records, Creating the Record Deletion Mechanism, Adding Sub-entities to a Record.

References

1.Julie C. Meloni, SAMS Teach yourself PHP MySQL and Apache, PearsonEducation (2007).
2.Steven Holzner , PHP: The Complete Reference, McGraw-Hill
3.Robin Nixon, Learning PHP, MySQL, JavaScript, CSS & HTML5, Third EditionO'reilly, 2014
4.Xue Bai Michael Ekedahl, The web warrior guide to Web Programming, Thomson(2006).
5.Web resources:

- http://www.codecademy.com/tracks/php
- http://www.w3schools.com/PHP
- http://www.tutorialpoint.com

6.Other web sources suggested by the teacher concerned and the college librarian including reading material.

GUIDELINES TO THE PAPER SETTER

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Unit no	Essay Questions	Short Answer Questions
I	3 (Section-A)	Nil
II	2 (Section-A)	2
III	2 (Section-B)	2
IV	2 (Section-B)	2
V	1 (Section-B)	2

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Web Applications Development using PHP & MYSQL
THEORY PAPER – VII (A)
SEMESTER-V

ADDITIONAL INPUTS

S.No	Topics Reviewed	Topics Added	Justification
1.	Unit-5:	**MySQL:** Introduction – Setting up account – Starting & terminating MySQL – Writing your own SQL programs – Record Selection Technology – Working with strings –Date & Time – Sorting Query Results.	For better understanding of the Subject.

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Web Applications Development using PHP & MYSQL
THEORY PAPER – VII (A)
SEMESTER-V

Time: 3 Hours **Max. Marks: 75**

NOTE: 1. Answer Any FIVE Questions by choosing at least two from Section-A and Section-B
2. Each one carries 10 marks.

5X10=50

SECTION-A

1. Essay Question from Unit-1.
2. Essay Question from Unit-1.
3. Essay Question from Unit-1.
4. Essay Question from Unit-2.
5. Essay Question from Unit-2.

SECTION-B

6. Essay Question from Unit-3.
7. Essay Question from Unit-3.
8. Essay Question from Unit-4
9. Essay Question from Unit-4.
10. Essay Question from Unit-5.

SECTION-C

Note: 1. Answer any FIVE questions from the following.
2. Each one Carries 5 Marks.

5X5=25

11. Short Answer Question from Unit-2.
12. Short Answer Question from Unit-2
13. Short Answer Question from Unit-3.
14. Short Answer Question from Unit-3.
15. Short Answer Question from Unit-4.
16. Short Answer Question from Unit-4.
17. Short Answer Question from Unit-5.
18. Short Answer Question from Unit-5.

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Web Applications Development using PHP & MYSQL
THEORY PAPER – VII (A)
SEMESTER-V

PRACTICAL SYLLABUS

I. Practical (Laboratory) Syllabus: *(30 hrs.)*

1. Write a PHP program to Display "Hello"
2. Write a PHP Program to display the today's date.
3. Write a PHP program to display Fibonacci series.
4. Write a PHP Program to read the employee details.
5. Write a PHP program to prepare the student marks list.
6. Write a PHP program to generate the multiplication of two matrices.
7. Create student registration form using text box, check box, radio button, select, submit button. And display user inserted value in new PHP page.
8. Create Website Registration Form using text box, check box, radio button, select, submit button. And display user inserted value in new PHP page.
9. Write PHP script to demonstrate passing variables with cookies.
10. Write a program to keep track of how many times a visitor has loaded the page.
11. Write a PHP application to add new Rows in a Table.
12. Write a PHP application to modify the Rows in a Table.
13. Write a PHP application to delete the Rows from a Table.
14. Write a PHP application to fetch the Rows in a Table.
15. Develop an PHP application to implement the following Operations
    i. Registration of Users.
    ii. Insert the details of the Users.
    iii. Modify the Details.
    iv. Transaction Maintenance.
        a) No of times Logged in
        b) Time Spent on each login.
        c) Restrict the user for three trials only.
        d) Delete the user if he spent more than 100 Hrs of transaction.
16. Write a PHP script to connect MySQL server from your website.
17. Write a program to read customer information like cust-no, cust-name, item- purchased, and mob-no, from customer table and display all these information in table format on output screen.
18. Write a program to edit name of customer to "Kiran" with cust-no =1, and to delete record with cust-no=3.
19. Write a program to read employee information like emp-no, emp-name, designation and salary from EMP table and display all this information using table format in your website.
20. Create a dynamic web site using PHP and MySQL

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I B.Sc., B.A., B.Com., B.B.A.,B.C.A., II Semester under CBCS w.e.f 2020-2021
LIFE SKILL COURSE
INFORMATION AND COMMUNICATION TECHNOLOGY
SEMESTER-II

UNIT-I: (08 hrs)

Fundamentals of Internet: What is Internet?, Types of Networks, Network topologies, Internet applications, Internet Addressing – Entering a Web Site Address, URL–Components of URL, Searching the Internet, Browser–Types of Browsers, Introduction to Social Networking: Twitter, Tumblr, LinkedIn, Facebook, flickr, Skype, yahoo, YouTube, WhatsApp.

UNIT-II: (08 hrs)

E-mail: Definition of E-mail -Advantages and Disadvantages –User Ids, Passwords, Email Addresses, Domain Names, Mailers, Message Components, Message Composition, Mail Management; Searching WWW- Search Engines and examples; G-Suite: Google drive, Google documents, Google spread sheets, Google Slides and Google forms.

UNIT-III: (10 hrs)

Overview of Internet security: Overview of Internet Security, E-mail threats and secure E-mail, Viruses and antivirus software, Firewalls, Cryptography, Digital signatures, Copyright issues. What are GOI digital initiatives in higher education? (SWAYAM, Swayam Prabha, National Academic Depository, National Digital Library of India, E-Sodh-Sindhu, Virtual labs, e- acharya, e-Yantra and NPTEL).

Reference Books:

1. In-line/On-line : Fundamentals of the Internet and the World Wide Web, 2/e – by Raymond Greenlaw and Ellen Hepp, Publishers : TMH
2. Internet technology and Web design, ISRD group, TMH.
3. Information Technology – The breaking wave, Dennis P.Curtin, Kim Foley, Kunai Sen and Cathleen Morin, TMH.

Guidelines to the Paper Setter
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Unit No	Essay Questions	Short Answer Questions
I	2 (Section-A)	3 (Section-B)
II	2 (Section-A)	2 (Section-B)
III	1 (Section-A)	3 (Section-B)

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NARSAPUR - 534 275, W.G.Dt.,

Batch 2022-2025
SRI Y.N.COLLEGE (AUTONOMOUS): NARSAPUR
I B.Sc., B.A., B.Com., B.B.A.,B.C.A., II Semester under CBCS w.e.f 2020-2021
LIFE SKILL COURSE
INFORMATION AND COMMUNICATION TECHNOLOGY
SEMESTER-II

ADDITIONAL INPUTS

S.No	Topics Reviewed	Topics Added	Justification
1.	Unit-1:	Types of Networks, Network topologies	Add to impart in depth knowledge on the specific topics

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INFORMATION AND COMMUNICATION TECHNOLOGY
II Semester under CBCS w.e.f 2020-2021
(Common for all II SEMESTER B.A./B.Com./B.Sc./B.B.A., COURSES)

NOTE: **1. Answer any Three of the following**
2. Each one carries 10 marks **3X10=30M**

SECTION – A

1. Essay Question from **Unit-1**
2. Essay Question from **Unit-1**
3. Essay Question from **Unit-2**
4. Essay Question from **Unit-2**
5. Essay Question from **Unit-3**

SECTION – B

NOTE: **1. Answer any Four of the following**
2. Each one carries 5 Marks. **4X5=20M**

6. Short Answer Question from **Unit-1**
7. Short Answer Question from **Unit-1**
8. Short Answer Question from **Unit-1**
9. Short Answer Question from **Unit-2**
10. Short Answer Question from **Unit-2**
11. Short Answer Question from **Unit-3**
12. Short Answer Question from **Unit-3**
13. Short Answer Question from **Unit-3**

Note: Please prepare the question Paper in both English medium and Telugu medium.

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Batch 2022-2025
SRI Y.N.COLLEGE (AUTONOMOUS): NARSAPUR
CERTIFICATE COURSE
BASIC COMPUTER APPLICATIONS
I Semester under CBCS w.e.f 2021-2022
(Common for all II SEMESTER B.A./B.Com./B.Sc./B.B.A., COURSES)

Objectives: This course aims at providing exposure to students in skill development towards basic office applications.

Course Learning Outcomes:

After successful completion of the course, student will be able to:

1. Demonstrate basic understanding of computer hardware and software.
2. Apply skills and concepts for basic use of a computer.
3. Identify appropriate tool of MS office to prepare basic documents, charts, spreadsheets and presentations.
4. Create personal, academic and business documents using MS office.
5. Create spreadsheets, charts and presentations.
6. Analyze data using charts and spread sheets.

UNIT-I: (08 hrs)

Basics of Computers: Definition of a Computer - Characteristics of computers, Applications of Computers – Block Diagram of a Digital Computer – I/O Devices, hardware, software human ware, application software, system software, Memories - Primary, Auxiliary and Cache Memory. MS Windows – Desktop, Recycle bin, My Computer, Documents, Pictures, Music, Videos, Task Bar, Control Panel.

UNIT-II: (08 hrs)

MS-Word: Features of MS-Word - MS-Word Window Components - Creating, Editing, Formatting and Printing of Documents – Headers and Footers – Insert/Draw Tables, Table Auto format – Page Borders and Shading – Inserting Symbols, Shapes, Word Art, Page Numbers, Mail Merge.

UNIT-III: (10 hrs)

MS-Excel : Overview of Excel features – Creating a new worksheet, Selecting cells, Entering and editing Text, Numbers, Inserting Rows/Columns –Changing column widths and row heights, Formulae, Referencing cells , Changing font sizes and colors, Insertion of Charts, Auto fill, Sort. MS-PowerPoint: Features of PowerPoint – Creating a Presentation - Inserting and Deleting Slides in a Presentation – Adding Clip Art/Pictures -Inserting Other Objects, Audio, Video - Resizing and scaling of an Object – Slide Transition – Custom Animation.

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RECOMMENDED CO-CURRICULAR ACTIVITIES: (04 hrs)

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside a. the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz, Group Discussion
4. Solving MCQ's available online.
5. Suggested student hands on activities:

- Create two folders, Rename the folder, create two files each using notepad and paint, move the files from one folder to another folder, delete a file you have created, copy and paste text within notepad.
- Create a letter head for your college with watermark, your resume, visiting card, brochure for your college activity, organization chart for your college, any advertisement, Prepare your Class time table.
- Prepare your mark sheet, Prepare your class time table, Prepare a salary bill for an organization, Sort the bill as per the alphabetical order of the names, Get online weather data and analyze it with various charts.
- Create a PowerPoint presentation for a student seminar.

REFERENCE BOOKS:

1. Working in Microsoft Office – Ron Mansfield - TMH.
2. MS Office 2007 in a Nutshell –Sanjay Saxena – Vikas Publishing House.
3. Excel 2020 in easy steps-Michael Price – TMH publications

Guidelines to the Paper Setter

Blue Print

Unit No	Essay Questions	Short Answer Questions
I	2 (Section-A)	3 (Section-B)
II	2 (Section-A)	2 (Section-B)
III	1 (Section-A)	3 (Section-B)

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Note: 1. Answer any three of the following.

2. Each one carries 10 Marks. **3 x 10 = 30**

SECTION – A

1. Essay Question from **Unit-1**
2. Essay Question from **Unit-1**
3. Essay Question from **Unit-2**
4. Essay Question from **Unit-2**
5. Essay Question from **Unit-3**

SECTION – B

NOTE: 1. Answer any Four of the following

2. Each one carries 5 Marks. **4X5=20M**

6. Short Answer Question from **Unit-1**
7. Short Answer Question from **Unit-1**
8. Short Answer Question from **Unit-1**
9. Short Answer Question from **Unit-2**
10. Short Answer Question from **Unit-2**
11. Short Answer Question from **Unit-3**
12. Short Answer Question from **Unit-3**
13. Short Answer Question from **Unit-3**

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BRIDGE COURSE SYLLABUS
FUNDAMENTALS OF COMPUTERS
SEMESTER-I

UNIT-I

EXPLORING COMPUTERS AND THEIR USES:

Computer definition-The Parts of a Computer system- Types of Computers-Block diagram of Computer-Memory-Main Memory: RAM, ROM and Cache-Secondary memory-Magnetic tape, Floppy disk, Hard disk, Compact disk-Computers in our world, Computer for individual users, Computers for organizations, and Computers in Society.

UNIT-II

LOOKING INSIDE THE COMPUTER SYSTEM

Detecting the Ultimate machine, Essential Computer hardware-Processing devices, Memory devices, Input devices-Keyboard, Mouse, Trackball, Joystick, Light pen, Touch screen, Optical Character Recognition, Optical mark Recognition, Magnetic Ink Character recognition-Output devices, Printers, Plotters.

UNIT-III

OPERATING SYSTEMS

Operating System: Definition, Functions of an Operating system, Types of Operating System-Single User ,Multi User, Multi Programming, Multi tasking, Time Sharing, Real time Operating systems.

UNIT-IV

PRINTING

Putting Digital Content in your hands; Commonly used Printers, Dot matrix Printers, Ink Jet Printers, Laser Printers, Plotters.

Software-System Software, Application Software, Computer Data, Computer Users.

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