JHARKHAND Rai University
RANCHI

PRACTICE SET
End Semester Examination, December, 2025

Course: Computer Fundamentals

Program: BCA

Semester: I

Course Code: 3CCC101

Course Outcome

CO1	Understand and apply the basics of computer systems, number systems, Boolean logic, and programming planning tools like flowcharts and algorithms.
CO2	Analyze the structure and components of computer systems, including CPU, memory, and microcontrollers.
CO3	Demonstrate the role and types of operating systems and execute basic UNIX commands
CO4	Apply basic DBMS concepts and use SQL commands for data manipulation and management.
CO5	Understand the fundamentals of internet architecture and create simple web pages using HTML5 and CSS.

Section-A

Short Answer Type Questions (5 Marks Each)

1. Define the term computer system and explain its major components with examples. [UNIT-1] [CO1] [Remember][LOT]
2. Convert the following numbers as indicated:
   (a) $(101101)_2$ to Decimal
   (b) $(45)_{10}$ to Binary
   (c) [UNIT-1] [CO1] [Apply][LOT]
3. Differentiate between combinational logic and sequential logic with suitable examples. [UNIT-1] [CO1] [Understand][LOT]
4. List and explain the basic logic gates with their truth tables. [UNIT-1] [CO1] [Remember][LOT]
5. Illustrate the use of flowcharts in programming with an example to add two numbers. [UNIT-1] [CO1] [Apply][LOT]
6. Define the main functions of the Central Processing Unit (CPU) in a computer system. [UNIT-2] [CO2] [Remember][LOT]
7. Differentiate between primary memory and secondary memory with suitable examples. [UNIT-2] [CO2] [Understand][LOT]
8. Explain the purpose of system buses in computer architecture. [UNIT-2] [CO2] [Understand][LOT]
9. Describe the role of microcontrollers in embedded systems. [UNIT-2] [CO2] [Apply][HOT]
10. Write a short note on the relationship between CPU, memory, and input/output devices. [UNIT-2] [CO2] [Understand][LOT]
11. Define an operating system and list its main functions.[UNIT-3] [CO3] [Remember][LOT]
12. Differentiate between multitasking, multiprocessing, and multithreading operating systems. [UNIT-3] [CO3] [Understand][LOT]
13. Explain the concept of system calls with suitable examples. [UNIT-3] [CO3] [Understand][LOT]
14. Write any five basic UNIX commands with their purpose. [UNIT-3] [CO3] [Remember][LOT]
15. Describe the role of the kernel in an operating system. [UNIT-3] [CO3] [Understand][LOT]
16. Define Data Manipulation Language (DML) and list any four DML commands with examples.[UNIT-4] [CO4] [Remember][LOT]
17. Explain the difference between primary key and foreign key with suitable examples. [UNIT-4] [CO4] [Understand][LOT]
18. Explain the need for databases over file systems. What are the major problems with traditional file systems?[UNIT-4] [CO4] [Apply][LOT]
19. Differentiate between DELETE, DROP, and TRUNCATE commands in SQL. [UNIT-4] [CO4] [Understand][LOT]
20. Explain the role of data types in SQL. Give examples of numeric, character, and date types. [UNIT-4] [CO4] [Apply][LOT]
21. Define Internet architecture. Explain its main components. [UNIT-5] [CO5] [Remember][LOT]

22. Differentiate between client-side and server-side scripting with examples. [UNIT-5] [CO5] [Understand][LOT]
23. List and explain any five commonly used HTML5 tags with their purpose. [UNIT-5] [CO5] [Remember][LOT]
24. What are CSS selectors? Explain different types with suitable examples. [UNIT-5] [CO5] [Understand][LOT]
25. Explain the concept of responsive web design and its importance. [UNIT-5] [CO5] [Understand][LOT]

Section-B

Descriptive Type Questions (10 Marks Each)

26. Explain different types of number systems and demonstrate conversions among binary, octal, decimal, and hexadecimal systems with examples.[UNIT-1] [CO1] [Apply][LOT]
27. Discuss the steps involved in algorithm design, and develop an algorithm to find the largest number among three inputs.[UNIT-1] [CO1] [Analyze][HOT]
28. Analyze the internal architecture of a CPU and explain the function of each unit (ALU, CU, and Registers). [UNIT-2] [CO2] [Analyze][HOT]
29. Difference between RAM and ROM in terms of structure, speed, and usage in computer systems. [UNIT-2] [CO2] [Analyze][HOT]
30. Discuss various types of operating systems. Give suitable examples for each. [UNIT-3] [CO3] [Understand][LOT]
31. Explain the file management system in UNIX. Include file types and file permissions with suitable commands. [UNIT-3] [CO3] [Apply][LOT]
32. Discuss in detail the need for databases over file systems. What are the major problems with traditional file systems?[UNIT-4] [CO4] [Apply][LOT]
33. Explain the importance of data independence and how DBMS achieves it compared to the file system approach.[UNIT-4] [CO4] [Analyze][HOT]
34. Describe the evolution of the World Wide Web and its importance in modern communication. [UNIT-5] [CO5] [Understand][LOT]
35. Explain the Domain Name System (DNS) architecture. Describe how DNS translates domain names into IP addresses with an example. [UNIT-5] [CO5] [Apply][LOT]

Section-C

Long Answer Type Questions (20 Marks Each)

1. Design a complete flowchart and algorithm to check whether a given number is prime or not. Explain each step in detail and discuss how this algorithm can be optimized.[UNIT-1] [CO1] [Evaluate][HOT]
2. Design and explain a block diagram showing the interaction between CPU, memory, and peripheral devices. Discuss how data flows among them during execution of a program.[UNIT-2] [CO2] [Analyze][HOT]
3. Design a scenario to illustrate how process management works in an operating system. Explain with diagrams showing process states and transitions.[UNIT-3] [CO3] [Analyze][HOT]
4. Analyze the advantages and limitations of DBMS over traditional file systems. Justify with real-world examples where DBMS provides efficiency and reliability. [UNIT-4] [CO4] [Analyze][HOT]
5. Evaluate the impact of Internet services (email, e-commerce, online education, cloud computing) on modern society. Discuss both benefits and challenges. [UNIT-5] [CO5] [Evaluate][HOT]

Summary Sheet

Course Outcomes (CO) Wise

CO	Question Numbers								Marks
CO1	1	2	3	4	5	26	27	36	65
CO2	6	7	8	9	10	28	29	37	65
CO3	11	12	13	14	15	30	31	38	65
CO4	16	17	18	19	20	32	33	39	65
CO5	21	22	23	24	25	34	35	40	65
Total									**325**

Unit Wise

Unit	Question Numbers								Marks
Unit-1	1	2	3	4	5	26	27	36	65
Unit-2	6	7	8	9	10	28	29	37	65
Unit-3	11	12	13	14	15	30	31	38	65
Unit-4	16	17	18	19	20	32	33	39	65
Unit-5	21	22	23	24	25	34	35	40	65
Total									**325**

Blooms Taxonomy Level (BTL) Wise

BTL	Question Numbers								Marks
LOT	1	2	3	4	5	6	7	8	**185**
	9	10	11	12	13	14	15	16	
	17	18	19	20	21	22	23	24	
	25	26	30	31	32	34	35		
HOT	27	28	29	33	36	37	38	39	**140**
	40								
Total									**325**

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Disclaimer: - This is a Practice Set. The Question in End term examination will differ from the Practice set. This Practice set is meant for practice only.