

24U164

(Pages: 2)

Name : .....

Reg. No : .....

**FIRST SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2024**

(FYUGP)

**CC24U CSC1 CJ101 - FUNDAMENTALS OF COMPUTERS AND COMPUTATIONAL THINKING**

(B.Sc. Computer Science - Major Course)

(2024 Admission - Regular)

Time: 2.0 Hours

Maximum: 70 Marks

Credit: 4

**Part A** (Short answer questions)

Answer *all* questions. Each question carries 3 marks.

1. Discuss the Gray code, and why is it used in digital systems. [Level:2] [CO1]
2. Explain the significance of early computing machines like the Analytical Engine in the evolution of modern computing systems. [Level:2] [CO1]
3. Explain the role of chipset as a motherboard component. [Level:2] [CO2]
4. Explain the importance of motherboard. [Level:2] [CO2]
5. Explain the importance of network interface. [Level:2] [CO2]
6. Make a note on device driver. [Level:3] [CO3]
7. Demonstrate different categories of software. [Level:3] [CO3]
8. In what ways can a lack of problem definition lead to inefficiencies in computational problem-solving. [Level:4] [CO4]
9. Analyze the characteristics of an algorithm. [Level:4] [CO4]
10. Analyze the difference between inductive and deductive reasoning in logical problem-solving. [Level:4] [CO4]

**(Ceiling: 24 Marks)**

**Part B** (Paragraph questions/Problem)

Answer *all* questions. Each question carries 6 marks.

11. Explain how the stored-program concept in the Von Neumann model changed the design of computers. [Level:2] [CO1]
12. Explain the role of a Graphics Processing Unit (GPU) in computing and how it differs from a Central Processing Unit (CPU). [Level:2] [CO1]

13. Explain the difference between RAM and ROM and its types. [Level:2] [CO2]
14. Discuss the importance of the electronic component inductor in detail? [Level:2] [CO2]
15. Make a note on the different types of file systems (FAT, NTFS, ext4). [Level:3] [CO3]
16. Make a note on Proprietary and Open Source operating system. [Level:3] [CO3]
17. Examine how computer science has transformed various industries such as healthcare, education, and finance. Provide specific examples of its impact. [Level:4] [CO4]
18. Analyse generalization in problem-solving? How does generalizing solutions help in applying them to different situations? Provide an example. [Level:4] [CO4]

**(Ceiling: 36 Marks)**

**Part C (Essay questions)**

Answer any *one* question. The question carries 10 marks.

19. Explain the development of ENIAC by John Mauchly and J. Presper Eckert, and describe its significance in the history of computing. [Level:2] [CO1]
20. Describe diode, transistor and integrated circuits in detail. [Level:2] [CO2]

**(1 × 10 = 10 Marks)**

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