3152

B.Tech. (CSE-AI&ML) 3rd Semester G-Scheme

Examination, December–2024

DIGITAL LOGIC AND COMPUTER ARCHITECTURE

Paper-PCC-CSE-251-G

Time allowed : 3 hours] *[Maximum marks : 75*

Note : ***Question No. 1 is compulsory.*** *Attempt any five questions selecting at least one questions from each unit. All questions carry equal marks.*

1. (a) What is Universal Gate? Realize NOR with the basic gates.

   (b) What are Boolean Law?

   (c) What are Instruction Formats? Give its different types.

   (d) What is Cache Memory? What are cache hit and cache miss?

   (e) Describe Standard I/O Interfaces.

   (f) What is Virtual Memory? Why is it used?

Unit-I

2. Convert the following :

   (a) 145.125 decimal number into binary

StudentSuvidha.com downloaded from
Download all NOTES and PAPERS at StudentSuvidha.com

(b) 110100010.001 binary into octal

(c) 3AB5 hexadecimal into binary

(d) 4578 decimal into hexadecimal

(e) 457.125 octal into decimal

3. Minimize the following Boolean function using any two methods and verify the result

F=ABC'D' + ABC'D + ABC'D + AB'C'D + ABCD + AB'CD

Unit-II

4. What are Addressing Modes? Also, focus on its types in detail.

5. Explain the operation of addition, subtraction, multiplication and division operations by taking a suitable example.

Unit-III

6. What do you understand by Memory? And give its types. Show their connection with the CPU. Also, discuss memory hierarchy.

7. What are the differences between Hardwired and Micro Programmed Controlled approaches? Also, discuss their merits and demerits.

downloaded from StudentSuvidha.com

Download all NOTES and PAPERS at StudentSuvidha.com

Unit-IV

8. What are Interrupts? Write its types. Write the various methods involved in handling multiple devices.

9. What is DMA? Draw a block diagram and explain its working.

downloaded from StudentSuvidha.com

Download all NOTES and PAPERS at StudentSuvidha.com