CBCS SCHEME

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15CS34

Third Semester B.E. Degree Examination, July/August 2022
Computer Organization

Time: 3 hrs. Max. Marks: 80

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

Module-1

1 a. Explain the basic operational concepts of the computer with a neat diagram. **(08 Marks)**

b. What is performance measurement? Explain the overall SPEC rating for the computer in a program suite. **(08 Marks)**

OR

2 a. Explain the concepts of stack frames when subroutines are nested with a neat diagram. **(08 Marks)**

b. Briefly explain with examples, any 3 addressing modes with assembler syntax. **(08 Marks)**

Module-2

3 a. Compare and contrast interrupt service routines and vectored interrupts. **(08 Marks)**

b. Briefly explain the implementation of DMA and show how the data is transferred between memory and input output devices using DMA controller. **(08 Marks)**

OR

4 a. With a neat diagram, explain the general 8-bit parallel interface circuit. **(08 Marks)**

b. Explain SCSI bus data transfer in a computer system. **(08 Marks)**

Module-3

5 a. With a neat diagram, explain the direct mapped cache in mapping functions. **(08 Marks)**

b. Explain virtual memory address translations. **(08 Marks)**

OR

6 a. What is memory interleaving explain With a neat diagram. **(08 Marks)**

b. Illustrate cache memory mapping function. **(08 Marks)**

Module-4

7 a. Perform addition and subtraction of signed numbers.
i) – 4 and – 6 ii) +5 and – 3 iii) – 7 and + 3 iv) +8 and + 1. **(08 Marks)**

b. Perform Booth's algorithm for singed numbers (–13) and (+11). **(08 Marks)**

OR

8 a. Show and perform restoring division for 8 and 3. **(08 Marks)**

b. Perform bit pair recoding for (+13) and (–6). **(08 Marks)**

Module-5

9 a. Compare and bring out the differences between Hand-wired control and micro programmed control With a neat diagram. **(08 Marks)**

b. Explain the three bus organization of data path with a neat diagram. **(08 Marks)**

OR

10 a. Illustrate the sequence of operations required to execute the following instructions.
Add (R_3), R_1. **(08 Marks)**

b. With a neat diagram, explain briefly an embedded processor chips used in embedded applications. **(08 Marks)**

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