CBCS SCHEME

USN | | | | | | | | | | |

17CS/IS34

Third Semester B.E. Degree Examination, Dec.2019/Jan.2020
Computer Organization

Time: 3 hrs. Max. Marks: 100

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

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-1

1 a. With a neat block diagram discuss the basic operational concept of a computer. **(08 Marks)**

b. What is performance measurement? Explain overall SPEC rating for computer. **(06 Marks)**

c. Explain Big-Endian, Little-Endian and assignment byte addressability. **(06 Marks)**

OR

2 a. What is an addressing mode? Explain any three addressing modes with example. **(08 Marks)**

b. Draw single bus structure, discuss about memory mapped I/O. **(06 Marks)**

c. What is stack and queue? Write the line of code to implement the same. **(06 Marks)**

Module-2

3 a. Define bus arbitration. Briefly explain the two approaches of bus arbitration. **(10 Marks)**

b. Explain the following with respect to USB: i) USB Architecture ii) USB Protocols. **(10 Marks)**

OR

4 a. With a neat block diagram, explain the general 8 bit parallel processing. **(08 Marks)**

b. With a block diagram, explain how the keyboard interfaced to processor. **(06 Marks)**

c. Explain PCI bus. **(06 Marks)**

Module-3

5 a. What is 'Locality of Reference'? Explain Direct mapping technique and set-associative mapping technique. **(10 Marks)**

b. What is asynchronous DRAM? With a neat diagram explain the internal organization of a 2M × 8 dynamic memory chip. **(10 Marks)**

OR

6 a. What is virtual memory? With a diagram explain how virtual memory address translation take place. **(10 Marks)**

b. Write a note on:
i) Magnetic disk principles
ii) Magnetic tape system. **(10 Marks)**

Module-4

7 a. Explain with a neat block diagram, 4-bit carry look ahead adder. **(08 Marks)**

b. Perform following operations on the 5-bit signed numbers using 2's complement representation system. Also indicate whether overflow has occurred.
i) (-9) + (-7) ii) (+7) – (-8). **(04 Marks)**

c. Explain the concept of carry save addition for the multiplication operations, M × Q = P for 4-bit operands with diagram and suitable example. **(08 Marks)**

11 JAN 2020

OR

8 a. With a neat diagram, explain IEEE standard for floating point numbers. **(06 Marks)**

b. Perform multiplication for -13 and +09 using Booth's Algorithm. **(06 Marks)**

c. With a neat block diagram, explain circuit arrangement for binary division. **(08 Marks)**

Module-5

9 a. What is pipelining? Explain the basic concept of pipeline performance with neat sketch. **(08 Marks)**

b. Explain with neat diagram, micro-programmed control method for design of control unit and write the micro-routine for the instruction branch < 0. **(08 Marks)**

c. Differentiate between hardwired and micro programmed control unit. **(04 Marks)**

OR

10 a. Briefly explain the block diagram of camera. **(10 Marks)**

b. With a neat diagram, explain the structure of general purpose multiprocessors. **(10 Marks)**

* * * * *