CBCS SCHEME

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

17CS34

Third Semester B.E. Degree Examination, June/July 2023
Computer Organization

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. With a neat diagram, explain basic operational concepts of a computer. **(08 Marks)**

b. What is performance measurement? Explain overall SPEC rating for the computer in a program suite. **(04 Marks)**

c. Draw single bus structure. Discuss about memory mapped I/O? Write a note on processor clock and clock rate. **(08 Marks)**

OR

2 a. Explain with a neat diagram, Big Endian and Little Endian. **(04 Marks)**

b. Define addressing mode. Explain any 4 addressign modes with an example for each. **(08 Marks)**

c. Write a program that can evaluate the expression A × B + C × D in a single accumulator processor. Assume that the processor has load, store, multiply and add instruction and that all values fit in the accumulator and with a neat block diagram, explain basic Input, Output operation. **(08 Marks)**

Module-2

3 a. With a neat sketch explain (DMA) Direct Memory Access. **(12 Marks)**

b. Explain the following with respect to USB
i) USB Addressing
ii) USB Protocols. **(08 Marks)**

OR

4 a. What is an interrupt with an example explain concept of interrupts. **(08 Marks)**

b. With a neat diagram, explain general 8-bit parallel interface circuit. **(06 Marks)**

c. Explain with a neat diagram, PCI bus in a computer S/M. **(06 Marks)**

Module-3

5 a. With a neat diagram, explain design of 2M × 32 memory module using 1M × 8 memory chips. **(08 Marks)**

b. Describe the organization of 2M × 32 memory using 512M × 8 memory chip. **(08 Marks)**

c. Explain synchronous DRAMS with block diagram. **(04 Marks)**

OR

6 a. Write a note on flash memory. (04 Marks)
b. Explain various types of ROMs. (06 Marks)
c. Explain associative mapping and set associative mapping. (10 Marks)

Module-4

7 a. Explain 4-bit Corry look ahead adder. (06 Marks)
b. Solve the following explain by Booth's algorithm (1 0 0 1 1) multiplied by (0 1 0 1 1). (08 Marks)
c. Write the steps of Booth's algorithm. (06 Marks)

OR

8 a. With a neat diagram, explain the logic circuit of restoring division. (10 Marks)
b. Explain the algorithm steps of non restoring method and solve the problem by non restoring method. 1000 by 11. (10 Marks)

Module-5

9 a. With a neat diagram explain three bus organization of the datapath. (06 Marks)
b. With a neat diagram, explain block diagram of a complete processor. (08 Marks)
c. Explain with a neat diagram, organization of the datapath inside a processor. (06 Marks)

OR

10 a. With a neat diagram, explain a simple micro controller. (08 Marks)
b. Explain microwave oven with a neat diagram. (08 Marks)
c. Explain with a neat diagram, processor chips of an embedded processor. (04 Marks)

* * * * *