B.E. (Computer Engineering) Fifth Semester (C.B.S.)

Computer Architecture & Organization

P. Pages : 2 **TKN/KS/16/7449**

Time : Three Hours * 0 9 1 5 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No.2.
3. Solve Question 3 OR Questions No.4.
4. Solve Question 5 OR Questions No.6.
5. Solve Question 7 OR Questions No.8.
6. Solve Question 9 OR Questions No.10.
7. Solve Question 11 OR Questions No.12.
8. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.
10. Use of non programmable calculator is permitted.

1. a) Explain in detail the generation of computers. **6**

b) Perform the division of following numbers. Using Restoring method. 11101 ÷0111 **7**

OR

2. a) Explain Booth's algorithm in brief perform the following multiplication using Booth's algorithm. **8**
i) (-16) X (-8)
ii) (7) X (-15)

b) Explain the structure of the IAS computer in brief. **5**

3. a) Explain different addressing modes with an example. **8**

b) Explain Arithmetic and Instruction pipelining. **6**

OR

4. a) Differentiate between RISC and CISC architecture. **3**

b) Explain with one address, two address & three address instruction the following expression. X = A x B + C x C **6**

c) Explain sequential ALUs. **5**

5. a) Differentiate between hardwired and microprogrammed control unit. **5**

b) Explain microinstruction with next address field. **8**

OR

6. a) Explain Basic structure of microprogrammed control unit. **6**

b) Explain the connection between data path units using single bus organization. **7**

7. a) Explain memory device characteristics. **6**

b) Explain how address translation is done in virtual memory. **5**

c) Explain Locality of reference. **3**

OR

8. a) Explain different types of memories in detail. **5**

b) Explain the need of cache memory. **3**

c) Explain memory allocation techniques in detail. **6**

9. a) Explain how data transfer takes place using DMA technique. **7**

b) Explain: **6**
i) PCI
ii) SCSI
iii) Dot matrix printers

OR

10. a) Explain different interrupts handling techniques. **7**

b) Explain: **6**
i) Programmed I/o system
ii) Vectored interrupt.
iii) Buses

11. a) Explain various Bus allocation schemes. **7**

b) Differentiate between uniform & non. Uniform memory access. **6**

OR

12. Write short notes on: **13**
i) Multiprocessors.
ii) Super scalar processors.
iii) Clusters.

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