Total No. of Questions—8]   [Total No. of Printed Pages—2

Seat
No.

[5152]-572

S.E. (Information Technology) (I Sem.) EXAMINATION, 2017

COMPUTER ORGANIZATION AND ARCHITECTURE

(2015 PATTERN)

Time : Two Hours   **Maximum Marks : 50**

N.B. :— (i) *All* questions are compulsory.

   (ii) Figures to the right indicate full marks.

   (iii) Neat diagrams must be drawn wherever necessary.

1. (a) Multiply 101011 by 110011 using Booth's algorithm   [6]

   (b) List different addressing modes and explain any *two* with suitable diagrams and example.   [6]

Or

2. (a) Draw diagram of instruction cycle states of a processor and explain.   [6]

   (b) Perform the division using non-restoring method 22/3.   [6]

3. (a) Draw diagram of single bus processor organization and explain.   [7]

   (b) Explain any *one* type of cache mapping technique with diagram.   [6]

Or

4. (a) Explain micro programmed control unit along with block diagram.   [7]

   (b) How virtual memory is managed using paging and TLB ?   [6]

P.T.O.

5. (*a*) What are the hazards in pipeline architecture ? Explain its types. [6]

    (*b*) Explain events of Execute cycle of MIPS pipeline. [6]

Or

6. (*a*) Explain events of Fetch cycle of MIPS pipeline. [6]

    (*b*) Which are the different stages in 5 stage pipeline ? [6]

7. (*a*) What is cluster computing ? What are the types of clustering ? [6]

    (*b*) Write a note on multicore architecture. [7]

Or

8. (*a*) Explain closely coupled and loosely coupled microprocessor system. [7]

    (*b*) What is Flynn's taxonomy for multiple processor organizations ? Explain with diagram. [6]