

SE. SEM = IV (COMP) (CBSSGS) 25/5/14

## Computer Organization & Architecture.

Q.P. Code : 541501

(3 Hours)

[ Total Marks : 80

- N.B. :** (1) Q. 1 is compulsory.  
(2) Attempt any **THREE** out of the remaining questions.  
(3) Assume suitable **data** if necessary.

1. Attempt any 4 sub questions.
  - (a) Explain various pipeline hazards. 5
  - (b) Express  $(35.25)_{10}$  in the IEEE single precision standard of floating point representation. 5
  - (c) Explain in brief the function of 8089 I/O processor. 5
  - (d) Compare RISC and CISC processors. 5
  - (e) Differentiate between Computer Architecture and Computer organization. 5
2. (a) Explain Flynn's classification in detail. 10  
(b) Explain the Interleaved memory. 10
3. (a) Calculate number of page faults and page hits for the page replacement policies FIFO, Optimal & LRU for given reference string 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1 (assuming three frame size). 10  
(b) What is the need of DMA? Explain its various techniques of data transfer. 10
4. (a) What is Bus arbitration? Explain its techniques. 10  
(b) Describe the register organization within the CPU. 10
5. (a) What are the features of cache memory design? 10  
(b) Multiply (-10) and (-4) using Booth's algorithm. 10
6. Write notes on
  - (a) Joysticks 6
  - (b) The characteristics of memory 8
  - (c) Microinstructions to execute an instruction MOV [R1], R2. 6