

## S.E. (IT) (Sem-IV) (CBCGS) (R-2012)

Paper / Subject Code: 39404 / COMPUTER ORGANIZATION AND ARCHITECTURE

(3 Hours)

[Total Marks: 80]

- N.B.
1. Question No 1 is compulsory.
  2. Solve any **three** questions out of remaining five questions.
  3. Assume suitable data if necessary.
  4. Figures to right indicate marks.

Q. 1. Solve any **four** out of five. (4\*5=20)

- a. Draw and explain instruction execution cycle.
- b. Explain memory hierarchy with the help of diagram.
- c. What are the various means of I/O communication?
- d. With the help of diagram, explain Von-Neumann's architecture.
- e. Explain the IEEE 754 double precision standard of floating point representation.

Q. 2. a) Multiply (-3) and (3) using Booth's Algorithm. (10)

b) Explain 6 stage instruction pipeline with suitable diagram. (10)

Q. 3. a) Compare RISC & CISC. (10)

b) Consider the string 8,3,9,4,9,8,5,8,3,9,6,7,5,4,3 (10)

Find the page faults for 3 frames using FIFO, Optimal, & LRU page replacement policies.

Q. 4. a) Divide 7 by 2 using non restoring division algorithm. (10)

b) Explain Flynn's classification in detail. (10)

Q. 5. a) Discuss the various characteristics of Memory. (10)

b) Explain design of control unit w.r.t. microprogrammed and hardwired approach. (10)

Q. 6. a) Explain different addressing modes with example. (10)

b) What is the need of DMA? Explain its various techniques of data transfer. (10)

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