

**Code: 9A05406**

**R09**

B.Tech II Year II Semester (R09) Supplementary Examinations December 2016

**COMPUTER ORGANIZATION**

(Common to ECC & CSE)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- 1 Give the single and double precision format for 32.75.
- 2 Design a circuit to calculate 1's complement, 2's complement and to clear and increment a signed number of 4-bits.
- 3 (a) What are horizontal and vertical micro instruction formats?  
(b) With the help of a block diagram explain the computer configuration.
- 4 With the help of a flow chart, explain the term "Hardware Algorithm" for addition and subtraction.
- 5 (a) Explain the concept of Cache updating and the need for its updating. Discuss the different updating Systems.  
(b) Explain the necessity of replacement algorithms for cache memory.
- 6 (a) Describe how direct memory access is used to transfer data from peripherals.  
(b) Discuss about DMA idle cycle and DMA active cycle.
- 7 (a) Explain how prediction techniques can be used to check whether a branch will be valid or not.  
(b) How are shortcomings in a simple pipeline overcome?
- 8 (a) Draw and explain the functional design of a typical multiprocessor system.  
(b) What are closely coupled multiprocessors?

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