MCA DEGREE I SEMESTER EXAMINATION DECEMBER 2015

CAS 2102/2103 COMPUTER ORGANIZATION
(2012 Revision-Regular and Supplementary)

Time: 3 Hours   Maximum Marks: 50

PART A
(Answer *ALL* questions)

$(15 \times 2 = 30)$

I.   (a) Define pipelining. Examine how pipelining affects the performance of program execution.
      (b) Comment on subroutine execution.
      (c) Differentiate between stack and queue.

II.   (a) Explain the concept of interrupt nesting.
      (b) With reference to cache memory, explain the term locality of reference.
      (c) Classify different types of ROM based on programmability.

III. (a) Comment on execution of a complete instruction.
      (b) Differentiate between hardwired control and microprogrammed control.
      (c) Illustrate with example addition of signed numbers.

IV.   (a) Describe instruction queue.
      (b) Explain briefly the concept of branch prediction.
      (c) Comment on superscalar operation.

V.   (a) List and explain three types of communication links.
      (b) Write short note on flat-panel displays.
      (c) Demonstrate three possible ways of implementing multiprocessor systems.

PART B

$(5 \times 4 = 20)$

VI.   Exemplify the addressing modes of a digital computer.
                                    OR

VII.   Describe the types of bus structure of a digital computer.

VIII. Examine the process of address translation in virtual memory.
                                    OR

IX.   Explain the process of bus arbitration in DMA

X.   Give Booth's algorithm to multiply 2 binary numbers.
                                    OR

XI.   Illustrate with example the process of integer division.

XII.   Explain pipelining.
                                    OR

XIII. Explain embedded systems.

XIV.   Differentiate between synchronous and asynchronous transmission.
                                    OR

XV.   Illustrate with necessary example, the memory organization in multiprocessor.

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