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[5152]-564

S.E. (Computer) (I Sem.) EXAMINATION, 2017

COMPUTER ORGANIZATION AND ARCHITECTURE

(2015 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :- (i) Neat diagrams must be drawn wherever necessary.

(ii) Figures to the right indicate full marks.

(iii) Use of calculator is allowed.

(iv) Assume suitable data, if necessary.

1. (a) Multiply the following using Booth' algorithm [6]

Multiplicand = +11

Multiplier = -6.

(b) Explain in brief seven RAID levels. [6]

Or

2. (a) Show the general structure of IAS Computer and explain. [6]

(b) Draw and explain the flowchart of restoring division algorithm. [6]

P.T.O.

3. (a) What is the use of DMA ? Explain cycle stealing in DMA. [6]
(b) Explain the following addressing modes with one example each : [6]
(i) Immediate
(ii) Register Indirect
(iii) Direct Addressing

Or

4. (a) Differentiate between programmed I/O and interrupt driven I/O. [6]
(b) What is machine instruction ? Explain types of instructions. [6]
5. (a) What are various hazards in instruction pipelining ? Explain. [7]
(b) Write a short note on superscalar execution and superscalar implementation. [6]

Or

6. (a) Explain the instruction cycle in detail. [6]
(b) List and explain various ways in which an instruction pipeline can deal with conditional branch instructions. [7]

7. (a) Compare horizontal and vertical microinstruction format. [6]
(b) Explain in detail microinstruction sequencing organization. [7]

Or

8. (a) Compare Hardwired control over micro-programmed control. [6]
(b) Write a control sequence for the following instruction for single bus organization : ADD (R3), R1. [7]