

(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.

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1. Solve any **four** out of **five**. 20
- (a) Differentiate between RISC and CISC
  - (b) What are the functions of following registers?  
(i) PC (ii) SP (iii) MAR (iv) MDR (v) IR
  - (c) Write a note on interrupt execution.
  - (d) Define Stored Program Concept and draw Von-Neumann's architecture.
  - (e) What is meant by nanoprogramming?
2. (a) Multiply (-3) and (4) using Booth's Algorithm. 10  
(b) Explain 6 stage instruction pipeline with suitable diagram. 10
3. (a) Compare SRAM & DRAM.  
(b) Consider the string 1,3,2,4,2,1,5,1,3,2,6,7,5,4,3,2,4,2,3,1,4  
Find the page faults for 3 frames using FIFO and LRU page replacement algorithms. 10
4. (a) Divide 11 by 2 using restoring division algorithm. 10  
(b) What is meant by Fetch cycle, Instruction cycle, Machine cycle and interrupt cycle? Explain in brief. 10
5. (a) Explain different mapping techniques of Cache memory. 10  
(b) What is virtual memory? Explain the role of paging and segmentation in virtual memory. 10
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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