

G 1592

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Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2016**

**Fourth Semester**

Branch : Computer Science and Engineering

COMPUTER ORGANIZATION (R)

(Old Scheme—Prior to 2010 Admissions)

[Supplementary/Mercy Chance]

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.  
Each question carries 4 marks.*

1. Explain the organisation of a digital computer.
2. Explain the sequence of operations for fetching a word from memory.
3. Explain signed division operation, with the help of example.
4. What is the principle of parallel adder ?
5. What is microprogramming ? What are the advantages and disadvantages of microprogramming ?
6. Explain memory transfer operation using micro-instructions.
7. Explain prediction with reference to virtual memory.
8. Differentiate between compulsory miss and capacity miss in memory.
9. Explain the polling scheme used in bus arbitration.
10. Explain the importance of GPIB.



(10 × 4 = 40 marks)

**Part B**

*Answer all questions.  
Each full question carries 12 marks.*

11. (a) Explain the two-bus organisation of CPU. (6 marks)
- (b) Describe the execution steps of data movement instructions. (6 marks)

Or

Turn over

12. Explain the layered view of a computer system. Explain the duties of different layers in OSI system.
13. How a floating point division can be carried out in a computer? Draw the block diagram and explain with the help of examples.

Or

14. (a) Draw the structure of ALU and explain its working. (6 marks)  
(b) Explain a three level carry look ahead adder with relevant diagram. (6 marks)
15. Give the microprogram for : (i) Fetch operations ; and (ii) Load from memory. Explain both with necessary figures.

Or

16. Explain the operation of a hardwired control unit.
17. What are the placement policies and replacement policies in memory hierarchy? Explain some of the common placement and replacement policies present in memory allocation.

Or

18. (a) Explain paged virtual memory organisation scheme. (6 marks)  
(b) Explain memory hierarchy in a computer system. Give a relative grading of the memory at different levels of hierarchy with respect to size, speed and cost. (6 marks)
19. Give the behaviour structure of a simplified keyboard encoder. Connect its output to a BCD to seven segment decoder driver to display the number '3'.

Or

20. Explain clearly I/O performance measures and designing an I/O system with a simple example. (5 × 12 = 60 marks)

