



C16-CM-302/C16-IT-302

**6228**

**BOARD DIPLOMA EXAMINATION, (C-16)  
OCT/NOV—2018  
DCME—THIRD SEMESTER EXAMINATION**

DIGITAL ELECTRONICS AND  
COMPUTER ARCHITECTURE

Time : 3 hours ]

[ Total Marks : 80

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**PART—A**

3×10=30

**Instructions** : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Reduce the following expression and realize the reduced expression  
 $\frac{ABC}{ABC} \frac{ABC}{ABC} \frac{ABC}{ABC}$ .
2. Explain EX-OR and EX-NOR gates with truth table.
3. Distinguish between Edge Triggering and Level Triggering.
4. What are the drawbacks of ripple counter?
5. List the applications of multiplexer.
6. Draw the functional block diagram of digital computer.
7. Define operand, opcode and address.

- \* 8. List various addressing modes.
- 9. Compare main and auxiliary memory.
- 10. List various addressing modes.

**PART—B**

5×10=50

**Instructions** : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) The answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11. Explain the operation of a digital comparator circuit for two 4-bit words.
- 12. Explain the operation of master-slave flip-flop with neat sketch.
- 13. Draw and explain module-8 ripple counter.
- 14. (a) Explain the working of serial in-parallel out register.  
(b) Explain the operation of 4 to 10 line decoder.
- 15. Explain the sequential execution of a program stored in memory by the CPU.
- 16. Explain zero, one, two and three address instructions with simple example.
- \* 17. (a) Draw the flow chart for fixed point division operation.  
(b) Explain about associate memory.
- 18. Explain DMA controlled data transfer.

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