C14–CM–303/IT–**303**

4233

BOARD DIPLOMA EXAMINATION, (C–14)
OCT/NOV—2018
DCME—THIRD SEMESTER EXAMINATION

DIGITAL ELECTRONICS

Time : 3 hours]   [*Total Marks* : 80

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. State De Morgan's Laws.

2. What is the importance of K-Map?

3. Differentiate between serial adder with parallel adder.

4. Define positive and negative logic levels.

5. Differentiate Synchronous and Asynchronous inputs of a flip flop.

6. What is meant by racing in JK flip flop? How it can be eliminated?

7. List the any three applications of counters.

8. State the need for a Register.

9. Write the differences between ROM and RAM.

10. List any three applications of Demultiplexers.

PART—B

10×5=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 Realization of AND, OR, NOT, EX-OR gates using NAND gate only and NOR gate only.

12. Explain the working of 4-Bit parallel adder with neat diagram.

13. Draw and explain the working of Clocked RS Flip Flop.

14. Explain the operation of T Flip Flop with diagram, truth table and waveforms.

15. Explain the working of Decade counter with neat diagram.

16. *(a)* Draw and explain the operation of a 4-bit ring counter.

  (b) Explain the operation of a 4×1 Multiplexer with neat diagram.

17. Draw and explain the working of 4-bit Shift Left and Shift Right Registers.

18. What is meant by data transfer in registers? Explain any two types of data transfer?

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