Roll No. | | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 18

B.Tech. (CSE/IT) (2018 Batch) (Sem.–3)

DIGITAL ELECTRONICS

Subject Code : BTES-301-18

M.Code : 76435

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

Write briefly :

1. State flip flop and its function.
2. Draw the full adder circuit using half adder.
3. Write the function of magnitude comparators.
4. Draw the NOR gate latch write its truth table.
5. What are the types of programmable logic devices?
6. Give the difference between Moore and Melay's model.
7. State the De Morgan's law and write any one application.
8. Convert the decimal number 39.75 to hexadecimal.
9. Differentiate between combinational circuit and sequential circuits.
10. What will be memory capacity of RAM if it has 10 bit address lines?

SECTION-B

11. Compare various number system in detail.

12. Illustrate the design procedure with algorithmic state machine with neat flow chart.

13. Discuss the features and functional blocks of FPGA.

14. Simplify the Boolean expression using K map :

    $F(A,B,C,D) = \Sigma(0,3,6,7,9,13,14,15)$

15. How an op-Amp will act as differentiator and integrator? Explain.

SECTION-C

16. Design AND-OR logic for the expression (A + B)(C + D)(E + F). Also convert the same circuit in NOR logic gate circuit.

17. a) What are the different logic gates? Give their truth tables.

    b) Describe the classification of semiconductor memories.

18. What is JK flip flop? Discuss its working. What is race around condition?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.