



C09-EC-305

3237

**BOARD DIPLOMA EXAMINATION, (C-09)
OCTOBER/NOVEMBER-2018
DECE – THIRD SEMESTER EXAMINATION**

DIGITAL ELECTRONICS

Time : 3 Hours]

[Total Marks: 80

PART-A

3X10=30

- Instructions :**
1. Answer **All** questions.
 2. Each question carries **three** marks.
 3. Answer should be brief and straight to the point and shall not exceed five simple sentences.

1. What are Universal Gates?
2. List different numbers systems.
3. Write the 2's compliment of each of these (a) 00001111 (b) 01011010
4. State the need for a tri-state buffer.
5. Draw block diagram of a serial adder.
6. What is necessity of clock in flip flop and list the types of triggering.
7. List the types of registers.
8. Draw a level clocked D-flip flop.
9. Draw the circuit of A/D converter using counter method.
10. Classify various types of memories.

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PART-B

10X5=50

- Instructions* : *
1. Answer any **Five** questions.
2. Each question carries **ten** marks.

11. (a) Draw the circuit of TTL NAND gat with totem pole output
(b) Compare TTL, CMOS and ECL logic families.
12. (a) Draw the sum of products circuit for the equation
 $Y = \overline{A} \overline{B} \overline{C} + \overline{A} B \overline{C} + A \overline{B} \overline{C} + A B \overline{C}$
(b) Write Boolean expressions of sum of minterms from the following truth table and simplify

Inputs			Output
A	B	C	X
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	0

13. Draw and explain the logic circuit of a full-adder. Derive the expressions for both carry and sum.
14. Draw and explain the logic circuit of 4 to 1 multiplexer.
- * 15. Draw and explain the working of four bit synchronous counter.
16. Draw and explain Master Slave JK Flip Flop with the help of neat diagram
17. (a) Explain the terms resolution, accuracy and monotonicity of converter.
(b) Draw weighted resistors method of D/A converter.
18. (a) Explain the working of dynamic MOS RAM cell
(b) Compare static RAM and dynamic RAM in any five aspects.

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