

ST. JOSEPH'S COLLEGE (AUTONOMOUS), BANGALORE-27
B.Sc. – III SEMESTER
MID-SEMESTER TEST- AUGUST 2019
EL 318- DIGITAL ELECTRONICS

Time: 1 Hour

Maximum marks: 30

This question paper has one printed page and three parts.

PART – A

Answer any three of the following

3x5 = 15 marks

1. a) With the help of example explain how signed numbers are represented.
b) With the help of example explain self complementing property.
2. State and prove De-Morgan's theorem.
3. With the help of circuit explain TTL NOT gate.
4. Explain the following.
i) Noise immunity ii) Sourcing and Sinking

PART – B

Answer any three of the following

3x4 = 12 marks

5. Convert the following.
i) $(2479)_{10} = (?)_{16}$ ii) .85 of decimal fraction to Binary fraction
6. a) Subtract $(11100)_2$ from $(10011)_2$ using 2's complement method.
b) Add 7 and 15 using BCD addition method.
7. Simplify the given expression using Boolean laws
$$X = (\bar{A}+B)C+ABC$$
8. Simplify the expression using K-map
$$F = \Sigma m(0,1,4,7,13,14) + d(5,8,15)$$

PART – C

Answer any three of the following

3x1 = 03 marks

9. Give any two characteristics of Gray code.
10. Draw the circuit diagram of X-NOR gate.
11. Mention power dissipation and propagation delay time of 74SXX.
12. What happens if input is floating in TTL circuits?
