

178230007

EG-210

B.Sc. III Semester (CGPA) CSE
Examination May 2018

DIGITALELECTRONICS

Paper - CS-302

Time Allowed : Three Hours] [Maximum Marks : 60

Note : Attempt all questions.

Unit - I

- Q.1. a) Convert the following : 6
- i) $(2DB)_{16} = ()_{10}$
 - ii) $(498)_{10} = ()_8$
- b) Convert the following : 6
- i) $(895.23)_{10} = ()_2$
 - ii) $(110101.011)_2 = ()_8$

OR

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- c) Convert the following : 6
- i) $(1011010111)_{\text{gray}} = ()_2$
 - ii) $(11010111)_2 = ()_{\text{gray}}$
- d) Convert the following : 6
- i) $(185)_{10} = ()_8$
 - ii) $(64.25)_{10} = ()_8$

Unit - II

Note : Solve any two questions.

- Q.2. a) Solve the Logical Expression with the help of k-map. 6

$$ABCD + \overline{ABCD} + A\overline{B}C + AB$$

- b) Prove the following : 6
- i) $\eta + \eta = \eta$
 - ii) $\eta \cdot \eta = \eta$
 - iii) $\eta + 1 = 1$
 - iv) $\eta \cdot 0 = 0$

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- c) Solve the Boolean function with the help of Tabulation method. 6

$$F = \Sigma(0,1,2,8,10,11,14,15)$$

Unit - III

Note : Solve any two questions.

- Q.3. a) Explain JK flip-flop. And state the truth table and characteristics. 6
b) Explain Encoders and decoder. Write their uses. 6
c) What is Multiplexer? Find out the following function with the help of 8×1 Multiplexer. 6

$$F = (A, B, C, D) = \Sigma(0,1,3,4,8,9,15)$$

Unit - IV

- Q.4. a) Explain in detail Johnson Counter. 6
b) What is Shift Register? Explain. 6

OR

- c) Draw the 3-bit Binary UP/DOWN Counter with the help of JK flip-flop. 6
d) What is BCD Counter? Explain. 6

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Unit - V

- Q.5. Explain the following: 12

- i) KIL
- ii) TTL
- iii) NMOS

OR

- Explain the following: 12

- i) DTL
- ii) CMOS
- iii) ECL



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