

1468

Code : 15EC-32T

Register
Number

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III Semester Diploma Examination, Nov./Dec. 2016

DIGITAL ELECTRONICS

Time : 3 Hours]

[Max. Marks : 100

- Note :** (i) Answer any **six** questions from Part-A.
(ii) Answer any **seven** questions from Part-B.

PART – A

1. Define combinational logic circuit. List any three combinational logic circuits. **5**
2. Define flip-flop. List types of flip-flops. **5**
3. Define Shift Registers and mention the different types of shift registers based on data movement. **5**
4. Compare the difference between Asynchronous and Synchronous counter. **5**
5. Distinguish between ADC and DAC. **5**
6. List the types of Programmable Logic Devices (PLD). **5**
7. List comparison between SRAM and DRAM. **5**
8. Implement two input EX-OR gate function using PAL. **5**
9. Define Fan in, Fan out and Propagation of Delay. Power dissipation and Noise margin with respect to logic gates. **5**

PART – B

10. (a) Explain the working of 2:1 MUX with Logic circuit. 5
(b) Explain the operation of 1:2 Demultiplexer using gates. 5
11. (a) Write a logic diagram, T.T. and Logic symbol for BCD to Decimal decoder. 5
(b) Illustrate the concept of 4-bit priority encoder with truth table and logic symbol. 5
12. (a) Demonstrate conversion of JK-flip-flop into T-flip-flop. 5
(b) List the features of 555 timer I.C. 5
13. (a) Write a circuit diagram and waveform of Monostable multivibrator by using 555 timer I.C. 5
(b) Write a gate level circuit of JK-flip-flop and its truth table. 5
14. (a) Explain 4-bit SISO Shift Register. 5
(b) List the application of counter. 5
15. Explain the construction of 3-bit. Asynchronous counter with help of logic diagram, Truth table and waveform. 10
16. (a) List the features of DAC-0808 I.C. 5
(b) Calculate % resolution and voltage resolution of 12 bit ADC having full scale analog I/p of 5V. 5
17. Construct Dual slope ADC and explain function with help of logic diagram and waveform. 10
18. (a) A semi-conductor memory chip is specified $2K \times 8$. 5
(i) How many bit can this chip store ?
(ii) How many addresslines are required to access this chip ?
(b) Write a note on Flash memory. 5
19. (a) Give the classification of logic families. 5
(b) Explain the CMOS inverter gate with circuit diagram. 5