

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.

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