

**1132****Code : 15EC32T**

Register Number 

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**III Semester Diploma Examination, April/May-2017****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 Multiplexer. Explain the working of 4 : 1 Multiplexer with suitable diagram. **5**
2. Compare combinational and sequential circuits. **5**
3. Construct 4-bit Johnson counter with suitable logic diagram and truth Table. **5**
4. Explain how to configure the IC7490 as a Decade counter. **5**
5. Define :
  - (a) Resolution
  - (b) Accuracy
  - (c) Monotonocitywith respect to DAC **5**
6. Describe the working principle of SRAM. **5**
7. List five differences between the SRAM and DRAM. **5**
8. Realize the full adder using PROM. **5**
9. List the five comparisons between TTL logic devices with CMOS logic devices. **5**

**PART – B**

10. Construct and explain the working operation of 1 to 8 De-multiplexer. **10**
11. With the help of circuit and Truth Table, explain the working of Decimal to BCD Encoder. **10**
12. (a) Construct and explain JK flip flop using gate level circuit. **5**  
(b) What is Race-around problem. Mention its remedies. **5**
13. Explain the working operation of Monostable Multivibrator using 555 TIMER. **10**
14. Construct and explain the operation of 3 bit SIPO and PISO shift Register. **10**
15. Design and explain the MOD-6 Asynchronous counter with the help of circuit diagram and Truth Table. **10**
16. (a) Describe the Binary Ladder type DAC with suitable diagram and expression. **5**  
(b) List the applications of DAC and ADC. **5**
17. Explain the working of Dual slope type ADC and list its advantages. **10**
18. Explain the expanding of word size and Capacity of Memories with an example. **10**
19. (a) Explain the operation of TTL NAND gate with circuit and Truth Table. **5**  
(b) Define the following with respect to logic gates : **5**  
(i) Fan in  
(ii) Fan out  
(iii) Propagation Delay  
(iv) Power dissipation  
(v) Noise Margin