

1222**Code : 15CS-21T**

Register
Number

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II Semester Diploma Examination, April/May-2017**DIGITAL AND COMPUTER FUNDAMENTALS****Time : 3 Hours |****| Max. Marks : 100**

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

PART – A

1. Illustrate 1's complement and 2's complement of a binary number with examples. **5**
2. Write the Truth Table of a 2-input NOR gate with its logic symbol. **5**
3. State De-Morgan's theorem and illustrate the same with Truth tables. **5**
4. Define : (i) Encoder (ii) Decoder. **5**
5. List the applications of flip-flop. **5**
6. Describe the characteristics of computer. **5**
7. Differentiate impact and non-impact printers. **5**
8. List any five Boolean algebra functions. **5**
9. Define BCD and explain. **5**

PART – B

10. Convert : 10
- (i) $585_{(10)}$ to Binary.
 - (ii) $110110011_{(2)}$ to Hexadecimal
 - (iii) $FDH_{(16)}$ to Decimal
 - (iv) $751_{(8)}$ to Binary
11. Explain the following : 10
- (a) Excess-3 Code
 - (b) Gray Code
12. Simplify the expressions : 10
- (i) $AB + A(B + C) + B(B + C)$
 - (ii) $C + \overline{BC}$
13. Explain full adder with logic diagram and truth table. 10
14. Illustrate Master-Slave J-K flip-flop with its truth table and logic diagram. 10
15. Explain the working of 4-bit Serial-In-Parallel-Out (SIPO) shift register. 10
16. Classify different generations of computers. 10
17. (a) List any four input and output devices each. 5
- (b) Write a note on Scanner. 5
18. Write a brief note on different types of ROM. 10
19. (a) Compare Primary and Secondary Memory. 5
- (b) Explain the hierarchy of memories. 5

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