



SECTION – C

- III. Answer **any three** of the following questions. (3×15=45)
- 21) a) Simplify the following using K-map.

$$F(A, B, C, D) = \sum (0, 2, 4, 7, 8, 10, 12) + \sum d(5, 6, 15).$$
 8
 b) Explain different binary codes. 7
- 22) a) What is shift register ? Explain the classification of shift register. 8
 b) Explain IC's and its types. 7
- 23) a) Explain BSA and BUN instruction with suitable example. 8
 b) Explain various modes of data transfer. 7
- 24) a) Write a short note on CISC and RISC. 7
 b) Explain the common bus system. 8
- 25) a) Explain the input-output instructions. 7
 b) Write a short note on memory hierarchy. 8

SECTION – D

- IV. Answer **any one** of the following questions. (1×10=10)
- 26) Design and discuss 3-bit parity checker with neat diagram. 10
- 27) a) Explain the working of JK Flip Flop. 5
 b) Write a note on direct mapping. 5

