CHAPTER 3 DATA REPRESENTATION

One mark questions:

- 1. Define the **base** of the number system. (U)
- 2. What is the expansion of **BIT**? (K)
- 3. Define MSB (U)
- 4. Define LSB. (U)
- 5. What is the weight of the LSB of an 8-bit number? (S)
- 6. What is the weight of the MSB of a 16-bit number? (S)
- 7. What does BCD stand for? (K)
- 8. What is the expansion of ASCII? (A)
- 9. What is the expansion of EBCDIC? (A)
- 10. What is binary system? (U)
- 11. What is octal system? (U)
- 12. What is hexadecimal system? (U)
- 13. How are negative numbers represented? (S)
- 14. Write 1's complement of 11010111(2) (S)
- 15. Write 2's complement of 11011011(2) (S)

Two marks questions:

- 1. Specify the general rule for representing number using positional notation in any number system. (K)
- 2. Mention different types of positional number system. (U)
- 3. Explain the need of binary number system in computers. (U)
- 4. What is the importance of hexadecimal system? (U)
- 5. What is 1's complement? Give an example. (A)
- 6. What is 2's complement? Give an example. (A)
- 7. What are computer codes? Give example. (K)
- 8. Mention the different types of number systems. (U)
- 9. What is the use of binary number system over decimal number system? (U)
- 10. Convert 97.188 (10) to binary. (S)
- 11. Convert 728.45(10) to binary. (S)
- 12. Convert 1101111.101(2) to decimal (S)
- 13. Convert 2835(16) to decimal. (S)
- 14. Convert 789.625(10) to octal. (S)
- 15. Convert 4563 in octal to binary. (S)
- 16. Convert BED₍₁₆₎ to binary. (S)
- 17. Convert 1101.01101in binary to octal. (S)
- 18. Convert A492.B in hexadecimal to decimal. (S)
- 19. Convert 512.45(10) to hexadecimal. (S)
- 20. Convert 11011110(2) to hexadecimal. (S)

- 21. Convert 6A9.ABC (16) to binary. (S)
- 22. Add 1010101 and 1010111 (S)
- 23. Explain ASCII code. (U)

Three marks questions:

1. Define MSB and LSB. What is the weight of the LSB of an 8-bit number and MSB of a 16-bit number? (S)

2. Write 1's complement of $11010011_{(2)}$ and 2's complement of $1111011_{(2)}$ (S)

3.Convert 193.102 (10) to binary. (S)

4. Convert 287.27(10) to binary. (S)

5.Convert 1100011.011(2) to decimal (S)

6.Convert 2546(16) to decimal. (S)

7.Convert 897.526(10) to octal. (S)

8. Convert 4352 in octal to binary. (S)

9. Convert CEBA(16) to binary. (S)

- 10. Convert 1100.1100 in binary to octal. (S)
- 11. Convert DF43.AB in hexadecimal to decimal. (S)
- 12. Convert 734.67(10) to hexadecimal. (S)
- 13. Convert 1100101011(2) to hexadecimal. (S)
- 14. Convert 36B.DEF (16) to binary. (S)
- 15. Add 1101101 and 1011101 (S)

Five marks questions: 1. Give the Radix of: (A) (a) Decimal system (b) Binary system (c) Octal system (d) Hexadecimal system 2. Subtract 36 from 83 using 2's complement. (S) 3. Using 1's complement method, solve $54_{(10)} - 87_{(10)}$ (S) 4. Using 2's complement method, solve $73_{(10)} - 25_{(10)}$ (S) 5. Add: 64(10) + 35(10) using binary addition. (S) 6. Find $(11001001.1011)_2 = (?)_8 = (?)_{16}$ (S) 7. Find (FADE) $_{16}$ = (?) $_8$ = (?) $_{10}$ (S) 8. Explain different types of computer codes. (K) 9. Evaluate: BEAD $(16) = (1)_{10} = (1)_{2} = (1)_{8}$ (S) 10. Find (572) $_8 = (?)_{16} = (?)_{10}$ (S) 11. Find (986) $_{10}$ = (?) $_8$ = (?) $_{16}$ (S) 12. Add: 89(10) + 66(10) using binary addition. (S) 13. Find $1101110_{(2)} + 1010111_{(2)} - 11110_{(2)}$ (S) 14. Find $1101110_{(2)} + 1010111_{(2)} - 11110_{(2)} + 110011_{(2)}$ (S) 19