Data Representation in Computers

A. Choose the correct option:

1. Which coding system uses only 6 bits to represent a character?
    (a) Binary Coded Decimal Code (BCDC)
    (b) Extended Binary Coded Decimal Code (EBCDC)
    (c) American Standard Code for Information Interchange (ASCII)
2. Which number system uses 16 unique digits 0-9 and A-F?
    (a) Decimal
    (b) Octal
    (c) Hexadecimal
3. Convert decimal 15 to Binary number system.
    (a) 1101
    (b) 1110
    (c) 1111
4. _____ is the smallest form of measuring unit of data in a computer.
    (a) Bit
    (b) Byte
    (c) Megabyte
5. Base of octal number system is-
    (a) 2
    (b) 8
    (c) 16

B. Fill in the blanks:

1. The _____ of a number system is the number of digits that can be used in it.
2. _____ coding system uses 8 bits to represent a character.
3. Decimal equivalent of octal 17 is _____.
4. Base of the binary number system is _____.
5. In the hexadecimal number system, letter D represents decimal number _____.

C. State true or false:

1. Binary equivalent of decimal numbers 6 is 0111.
2. To convert a number from hexadecimal to decimal number system, it will follow multiplication by 16.
3. The leftmost bit is called Least Significant Bit (LSB).
4. In Binary Multiplication, 1 ✖ 0 = 1.
5. BCDC stands for Binary Coded Decimal Code.

D. Answer the following questions:

1. Define different coding systems in computers.
2. Write a short note on the Binary number system.
3. Mention any two differences between hexadecimal and octal number systems.
4. Write steps to convert decimal numbers to Binary.
5. Write Binary equivalent of following Decimal numbers: 6, 7, 8, 9, 10, 11, 12