

INFORMATION TECHNOLOGY

Data Manipulation Quiz

NOTE:

Show all workings for your answers, without it I will not mark your answer.

Questions

- Convert the following to binary:
a. 63 b. 25 c. 54 d. 81 e. 12
- Convert the following to decimal:
a. 10110111 b. 10101010 c. 10001111
- Add the following numbers:
a. 0101 and 0011 b. 0111 and 0010 c. 0100 and 0011
- Name the three methods by which positive and negative numbers maybe represented.
- Convert the following decimal numbers to BCD:
a. -456 b. 512 c. 987 d. 600
- Convert the following decimal numbers to 8-bit sign and magnitude:
a. -21 b. -55 c. 81 d. 32
- Represent in 8-bit two's complement the following decimal numbers:
a. -21 b. -55 c. 81 d. 32
- If the ASCII code for the letter 'd' is 1000100, find the ASCII code for the letter 'a'
- Use **binary subtraction** and **two's complement addition** to calculate the result of the following.
a. 1011 - 1011 b. 11111 - 10 c. 1111 - 100
- Convert the following 8-bit two's complement numbers to decimal values:
a. 10001001 b. 10110100

11. What is the value of **X** in the following equation? $60_{10} - X_2 = 1111_2$

12. What is the decimal value of the following 5-bit sign and magnitude representations?

a. 01101

b. 10111

13. Convert the following decimal numbers to hexadecimal and octal numbers:

a. 23

b. 1

c. 101

d. 168

14. Convert the following hexadecimal numbers to decimal and octal

a. FA_{16}

b. 123_{16}

c. AA_{16}

d. $1F_{16}$

15. Add the following hexadecimal numbers:

a. $15_{16} + 13_{16}$

c. $42_{16} + A_{16}$

b. $30_{16} + F_{16}$

d. $AB_{16} + CD_{16}$

16. Add the following octal numbers:

a. $15_8 + 13_8$

c. $71_8 + 7_8$

d. $22_8 + 6_8$

b. $30_8 + 10_8$

17. Decode the mystery words using the ASCII 8-bit character codes in the Table on page 8 of UNIT - 1D.

a. 11000010 11000001 1100 0111

b. 11000111 11000101 11000100

c. 11001000 11000101 11000001 11000100

18. State which of the following can represent discrete data or continuous data

a. a light switched on

b. a channel on cable television

c. the temperature in a room

d. the size of a finger nail