

Computer Organization Assignment

Solutions

1. Write briefly about the Computer System Components?

→ *Hardware*

- Input/output devices
- Storage Devices
- CPU – Central Processing Unit
 - ALU: arithmetic/logic unit
 - CU: control unit
 - Interface unit

→ *Memory*

- Short-term storage for CPU calculations

→ *Software*

- Applications and system software
- Instructions tell hardware exactly what tasks to perform and in what order

→ *Data*

- Fundamental representation of facts and observations

→ *Communications*

- Sharing data and processing among different systems
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Q2 : Convert $(B125)_{16}$ to a binary number.

$$(B125)_{16} = (1011\ 0001\ 0010\ 0101)_2$$

$$(B) = 1011, (1) = 0001, (2) = 0010, (5) = 0101$$

3. a) What is the decimal equivalent of the hexadecimal number DEF?

$$\begin{aligned} D \times 16^2 &= 13 \times 256 = 3328 \\ + E \times 16^1 &= 14 \times 16 = 224 \\ + F \times 16^0 &= 15 \times 1 = 15 \\ &= 3567 \text{ in base 10} \end{aligned}$$

The digits in base 16 are 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F

3. b) Binary addition

$$\begin{array}{r} 111111 \\ 1010111 \\ \underline{+1001011} \\ 10100010 \end{array}$$

Q4 : What does ASCII stand for?

ASCII is stand for: American Standard Code for Information Interchange

Q5: What character string does the binary ASCII code

1010100 1101000 1101001 1110011 0100000 1101001 1110011
0100000 1000101 1000001 1010011 1011001 0100001

represent?

The equivalent characters is

This is EASY!

1010100 - ASCII character is 'T' (84)

101000 - ASCII character is 'h' (104)

1101001 - ASCII character is 'i'(105)

1110011 - ASCII character is 's'(115)

0100000 - ASCII character is 'space'(32)

1101001 - ASCII character is 'i'(105)

1110011 - ASCII character is 's'(115)

0100000 - ASCII character is 'space'(32)

1000101 - ASCII character is 'E'(69)

1000001 - ASCII character is 'A'(65)

1010011 - ASCII character is 'S' (83)

1011001 - ASCII character is 'Y'(89)

0100001 - ASCII character is '!'(33)