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Practical-3

Q1 Decimal equivalent of $(3A)_{16}$

$$\begin{array}{cc} 3 & A \\ \downarrow & \downarrow \\ 3 & 10 \end{array}$$

$= 10 \times 16^0 + 3 \times 16^1 = 58$

$= (58)_{10}$

Q2 8 bit unsigned binary of $(56)_{10} - (31)_{10}$

$(56)_{10} - (21)_{10} = (25)_{10}$

$\downarrow$

$(25)_{10} = (00011001)_2$

Q3 Result of adding $(7)_{10}$ & $(-4)_{10}$

$(7)_{10} + (-4)_{10} = 7 - 4 = (3)_{10}$

$= \cancel{(011)}_2$

$\boxed{(00000011)_2}$ Ans

Q4 Which of the following 4 bit excess 3 number is equivalent to $(5)_{10}$

Ans $5+3 = (8)_{10} = (1000)_2$

Q5 Consider the equation $(125)_5 = (x8)_y$ with x and y as unknown. The number of solution is ____

Ans $(125)_5 \rightarrow (?)_{10}$

$= (40)_{10}$

$= (40)_{10} = (x8)_y$

$= (28)_{16} \rightarrow ①$

$= (18)_{32} — ②$

$= (28)_{16}$ and $(18)_{32}$

Q6 Convert binary 111111110010 to hexadecimal

1111 1111 0010

15 15 2

F F 2

$\boxed{=(FF2)_{16}}$

Q7 Octal to decimal

$(532.2)_8 \rightarrow (?)_{10}$

$\cancel{5}\times$ $2\times8^0 + 3\times8^1 + 5\times8^2 + 2\times8^{-1}$

$320 + 24 + 2 + .25$

$\boxed{=(346.25)_{10}}$

Q8 The decimal equivalent of octal no. $(645)_8$ is $\underline{(421)_{10}}$.

Q9 The quantity of double word is 4/8 bit

Q10 Octal to binary

$(24)_8$

$\begin{array}{cc} 2 & 4 \\ | & | \\ 010 & 100 \end{array}$

$\boxed{= (010100)_2}$ Ans

Q11 Convert binary to octal

$(110110001010)_2 \rightarrow (?)_8$

$\underline{110}\ \underline{110}\ \underline{001}\ \underline{010}$

$\downarrow\ \downarrow\ \downarrow\ \downarrow$

$6\ 6\ 1\ 2$

$\boxed{= (6612)_8}$ Ans

Q12 The octal no. $(651.124)_8$ is equivalent to $\underline{(425.1640625)_{10}}$

Q13 $(1E2)_{16} \rightarrow (?)_{10}$

$2 \times 16^0 + 14 \times 16^1 + 1 \times 16^2$

$2 + 224 + 256 = (482)_{10}$

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Q14 Let r denote number system radix. The only values of r that satisfy the equation

~~Ans~~ $\sqrt{121_6} = 11_r$

Ans The equation is true for any value of r>2.