Practical - 3 ✓.

Q1   Decimal equivalent of $3A_{16}$?

→ $3A_{16}$

3   10

↓

0011_2 1010_2

00111010_2

↓

$?_{10}$
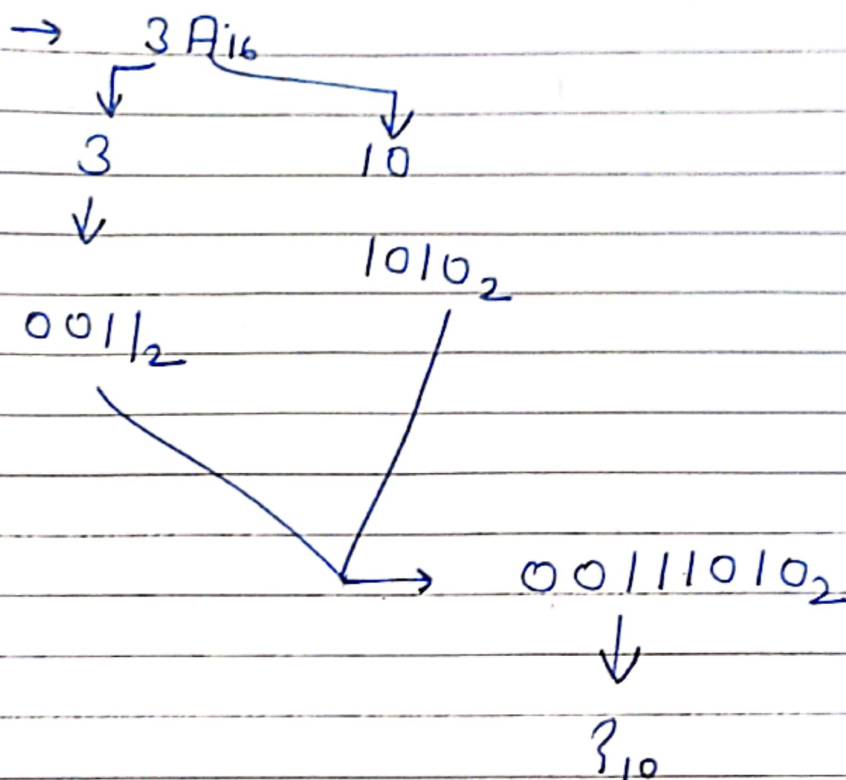
$1 \times 2^5 + 1 \times 2^4 + 1 \times 2^3 + 1 \times 2^1$

$32 + 16 + 8 + 2$

$= 58_{10}$ ✓

Q2.   8 bit unsigned binary of $56_{10} - 31_{10}$?

So. $56_{10} - 21_{10} = 25_{10}$

↓

00011001_2 ✓.

Q3. Result of adding 7_{10} & -4_{10} ?
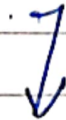
$$7_{10} - 4_{10} = 3_{10}$$

$$\rightarrow \quad 00000011_2$$

Q4. Which of the following 4 bit excess 3 number is equivalent to 5_{10} ?

Sol $5 + 3 = 8_{10}$

$?_2$

$1000_2 \checkmark$

Q5. Consider the equation $(125)_5 = (x8)_y$ with x & y as unknown. The number of solutions is _____.

Q6. Convert binary 111111110010 to hexadecimal.

(3)

Sol.

$$\underline{1111} \qquad \underline{11\,11} \qquad \underline{00\,10}$$
$$\downarrow \qquad\qquad \downarrow \qquad\qquad \downarrow$$
$$15 \qquad\qquad 15 \qquad\qquad 2$$
$$\downarrow \qquad\qquad \downarrow \qquad\qquad \downarrow$$
$$F \qquad\qquad F \qquad\qquad 2$$

~~FFF2~~

$$\rightarrow FF2_{16}$$

Q7. Octal to decimal $\rightarrow (532.2)_8$

$$\rightarrow \quad 532.2_8 \rightarrow$$

$$5 \times 8^2 + 3 \times 8^1 + 2 \times 8^0 + 2 \times 8^{-1}$$

$$5 \times 64 + 3 \times 8 + 2 \times 7 + \frac{2 \times 1}{84}$$

$$320 + 24 + 2 + .25$$
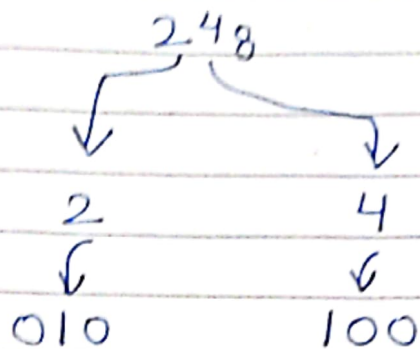
$$= 346.25_{10} \checkmark$$

Q8. The decimal equivalent of octal
No. $(645)_8$ is __421.__ .
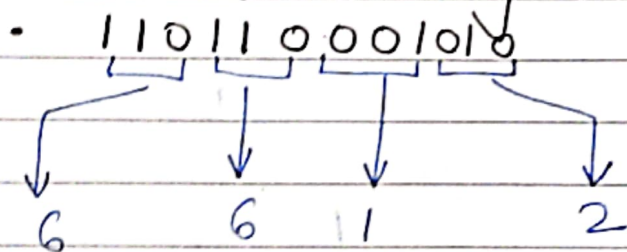
Q9. The quantity of double word is.
__4/8 bits__ .

(1.)

Q10.　　　Octal to binary → $(24)_8$

sol.

24_8

2　　　　　4

010　　　100

010100_2 ✓

Q11.　Convert binary to ~~decimal~~ Octal :—

$\cdot\ 11011000101\overset{?}{0}$

6　　6　　1　　　2

6612_8 ✓
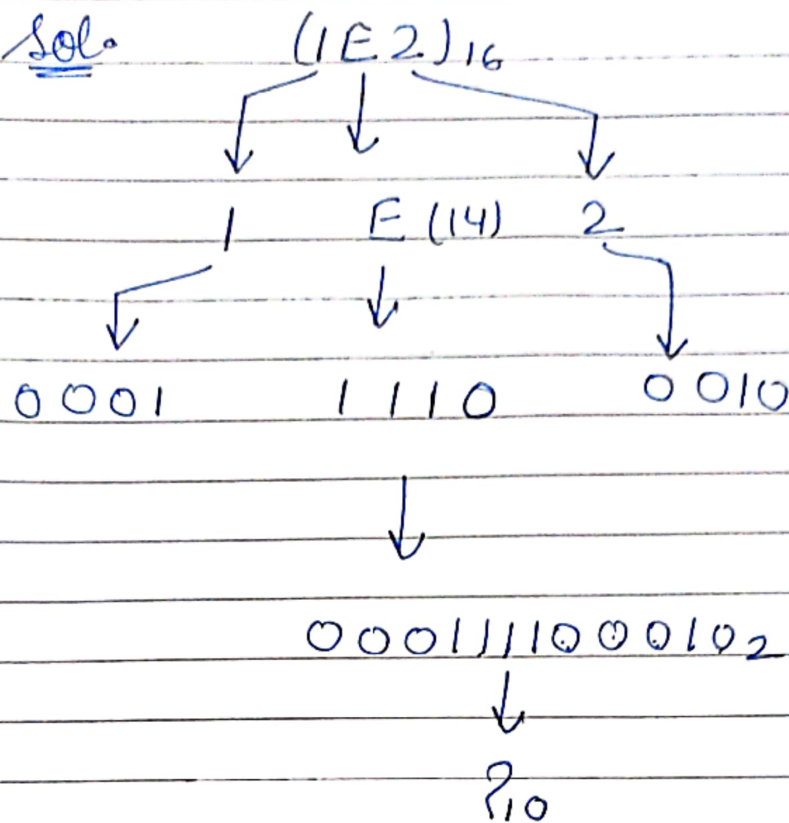
Q12.　The Octal No. $(6651.124)_8$ is equivalent to ~~(425.1840)~~ $_{10}$ ~~f4~~

→ $(425.16406\,25.\quad)_{10}$

Q13.　Convert hex. to decimal $(1E2)_{16}$:—

(5)

Sol. $(1E2)_{16}$

1	E (14)	2
0001	1110	0010

000111100010_2

$?_{10}$

$2^8 \times 1 + 2^7 \times 1 + 2^6 \times 1 + 2^5 \times 1 \neq 2^1 \times 1$

$256 + 128 + 64 + 32 + 2$

$= 482_{10}$ ✓

Q14 Let r denote number system radix. The only value(s) of r that satisfy the equation.

$\sqrt{121}_6 = 11_r$ is/are :—.

Sol. The equation is ~~tura~~ true for any value of r. ✓