

Number System-Exercise Questions updated on Dec 2024

Exercise Questions

1. The binary equivalent of the decimal number 125 is
a.1100100 b.1111101 c.1101100 d.1111111

2. The hexa decimal equivalent of the decimal number 128 is
a.128 b.175 c.80 d.81

3. The decimal number 1356 expressed in octal system equals
a.2514 b.125 c.353 d.235

4. The decimal conversion of the binary number $(1111)_2$ is
a.31 b.15 c.13 d.14

5. The sum of $(101101)_2$ and $(111011)_2$ is
a.1010110 b.1101000 c.1000110 d.1110010

6. The square root of $(2011)_5$ is
a. $(21)_5$ b. $(31)_5$ c. $(121)_5$ d. $(41)_5$

7. The sum of $(6E)_{16}$ and $(3B)_{12}$ is
a. $(157)_{10}$ b. $(137)_{11}$ c. $(166)_8$ d. $(192)_7$

8. The decimal equivalent of hexa-decimal number $(ABC)_{16}$
a.2847 b.2748 c.7428 d.1478

9. The decimal fraction 0.75 in the binary system equals
a.0.11 b.0.00 c.0.10 d.0.111

10. The octal equivalent to the binary $(11010)_2$ is
a.26 b.32 c.28 d.30

Answer & Explanations

1. Ans: (b).

2. Ans: (c).

3. Ans: (a).

4. Ans: (b)

$$(1111)_2 = 1 \cdot 2^3 + 1 \cdot 2^2 + 1 \cdot 2^1 + 1 \cdot 2^0 = 8 + 4 + 2 + 1 = 15$$

5. Ans: (b).

6. Ans: (b).

$$(2011)_5 = 2 \cdot 5^3 + 0 \cdot 5^2 + 1 \cdot 5^1 + 1 \cdot 5^0 = 250 + 5 + 1 = (256)_{10}$$

$$\text{The square root of } (256)_{10} = (16)_{10} = (31)_5$$

7. Ans: (a)

$$(6E)_{16} = 6 \cdot 16^1 + 14 \cdot 16^0 = 96 + 14 = (110)_{10}$$

$$(3B)_{12} = 3 \cdot 12^1 + 11 \cdot 12^0 = 36 + 11 = (47)_{10}$$

$$(110)_{10} + (47)_{10} = (157)_{10}$$

8. Ans: (b)

$$(ABC)_{16} = 10 \cdot 16^2 + 11 \cdot 16^1 + 12 \cdot 16^0 = 2560 + 176 + 12 = 2748.$$

9. Ans: (a)

$$10. (11010)_2 = 1 \cdot 2^4 + 1 \cdot 2^3 + 0 \cdot 2^2 + 1 \cdot 2^1 + 0 \cdot 2^0 = 16 + 8 + 2 = (26)_{10}$$