Topic – RATIONAL NUMBERS AND EXPONENTS

Objective

1) Identify the property $\frac{1}{2} \times \left[\frac{5}{6} - \frac{3}{4}\right] = \frac{1}{2} \times \frac{5}{6} - \frac{1}{2} \times \frac{3}{4}$

2) If $(-24)^{-1} \div y = 3^{-1}$, the y is--------------------
3) $9.573 \times 10^{-4} =$ ---------
4) Additive inverse of $\frac{3}{5} =$ is ----------------
5) Multiplicative inverse of $(-2)^{-5}$ is
   [a]1   [b] -2   [c] $(-2)^5$ [d] 2^{-5}

6) How many reciprocals does zero have?
   [a]1   [b] 2   [c]0   [d] none of the above

7) Additive inverse exists in whole numbers.. [True /False]
8) Diameters of Sun and Earth are $1.49 \times 10^9 \ metres \ and \ 1.275 \ \times 10^7$. Then diameter of Sun is 1000 times the diameter of earth. [True /False]
9) If p and q are non-zero rational numbers and n is a positive integer then, $\left(\frac{a}{b}\right)^{-n} = \left(\frac{b}{a}\right)^n$. [True /False]
10) Commutative property does not hold good for rational numbers. [True /False]

Do as directed

11) Write.
    (i)   Quotient law of exponents
    (ii) The rational numbers those are equal to their reciprocals.
    (iii) Power law of exponents.
    (iv) Give a rational number which when added to it gives the same number.

12) By what rational number should $\frac{22}{7}$ be divided, to get the number $\frac{-11}{24}$?

13) Simplify and mention the laws applied
    [a]$27^{\frac{4}{3}} + (32)^{0.8}$ [b] $\left(\frac{16}{81}\right)^2 \times \frac{3}{2}$ [c] $[1 - \{1 - (1 - n)^{-1}\}^{-1}]^{-1}$

14) Insert six rational numbers between $[a] -\frac{1}{4} \ and \ -\frac{2}{5}$ [b] 9 and 10

15) Given $1176 = 2^p \ \times \ 3^q \ \times 7^r$ find the numerical value of p,q and r