WORKSHEET

01. Reciprocal of Zero is -----

(a) 0

(b) 1

(c) -1

(d) None of the above

02. The multiplicative inverse of 10^{-100} is

(a) 10^{100}

(b) 10^{-100}

(c) 10

(d) 100

03. Zero (0) is

(a) the identity for addition of rational numbers

(b) the identity for subtraction of rational numbers

(c) the identity for multiplication of rational numbers

(d) the identity for division of rational numbers

04. One (1) is

(a) the identity for addition of rational numbers

(b) the identity for subtraction of rational numbers

(c) the identity for multiplication of rational numbers

(d) the identity for division of rational numbers

05. Find the least number by which 1323 must be multiplied so that the product is a perfect cube.

(a) 5   (b) 6   (c) 7   (d) 8

06. 2.7 is what percent of 18?

(a) 10%

(b) 15%

(c) 1.5%

(d) 20%

07.   1. If A & B are two sets such that n(A)= 15, n(B)= 21, & n(A∪B) = 36 then n(A∩B) equal to

(a) 2

(b) 0

(c) 4

(d) 15

08.   If 5A x A = 399, then the value of A is

(a) 3

(b) 7

(c) 6

(d) 9

09.   If 30 men can do a work in 24 days. How many men will do the same work in 12 days?

(a) 30   (b) a whole number

(c) 60   (d) a rational number.

10.   a + b = b + a is called

(a) commutative law of addition   (b) associative law of addition

(c) distributive law of addition   (d) none of these.

11.   Insert three rational numbers between 2/3 and 3/4.

12.   Simplify: $(12)^{-2} \times 4^{3}$.

13. $5\frac{1}{2}$ m long rope is cut into 12 equal pieces. What is the length of each piece?

14.   Write the following rational numbers in the descending order.

8/7, -9/8, -3/2, 0, 2/5

15.   Find the sum of additive inverse and multiplicative inverse of 7.

16. The perimeter of a triangle is $8y^2 - 9y + 4$ and its two sides are $3y^2 - 5y$ and $4y^2 + 12$. Find its third side.

17. A can do a piece of work in 20 days and B in 15 days. They worked together on it for 6 days and then A left. How long will B take to finish the remaining work?

18. (i) At what rate per cent per annum will Rs. 630 produce an interest of Rs. 126 in 4 years ?
(ii) At what rate per cent per year will a sum double itself in 6 years ?

19. Calculate the difference between the compound interest and the simple interest on ₹ 7,500 in two years and at 8% per annum.

20. If the price of sugar is increased by 25% today; by what percent should it be decreased tomorrow to bring the price back to the original?

21. In a Group of 500 people , 250 can speak French & 300 can speak German. How many can speak both French & German. Represent it in Venn diagram

22. John sold an article to Peter at 20% profit and Peter sold it to Mohan at 5% loss. If Mohan paid Rs.912 for the article; find how much did John pay for it ?

23. Rajesh sold his scooter to Rahim at 8% loss and Rahim, in turn, sold the same scooter to Prem at 5% gain. If Prem paid Rs. 14,490 for the scooter ; find :
(i) the S.P. and the C.P. of the scooter for Rahim
(ii) the S.P. and the C.P. of the scooter for Rajesh

24. Insert six rational numbers between 5/6 and 8/9

25. If $\sqrt{784} = 28$, find the value of:
(i) $\sqrt{7.84} + \sqrt{78400}$
(ii) $\sqrt{0.0784} + \sqrt{0.000784}$

26. Find, which of the following sets are singleton sets :
(i) The set of points of intersection of two non-parallel st. lines in the same plane
(ii) A = {x : 7x − 3 = 11}
(iii) B = {y : 2y + 1 < 3 and y ∈ W}
Note : A set, which has only one element in it, is called a SINGLETON or unit set.

27. If John sells his bicycle for Rs. 637, he will suffer a loss of 9%. For how much should it be sold, if he desires a profit of 5%?

28. If 3 men or 6 boys can finish a work in 20 days, how long will 4 men and 12 boys take to finish the same work ?

29.   A family of 5 persons can be maintained for 20 days with Rs.2,480. Find, for how long Rs.6944 will maintain a family of 8 persons.

30.   Find the proper subsets of $\{x : x^2 - 9x - 10 = 0\}$

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