ROY'S INSTITUTE OF COMPETITIVE EXAMINATION

RRB NTPC GRADUATE & UNDER GRADUATE CBT-1

/ MATHEMATICS /

HANDOUT - 2

1. The larger of two supplementary angles is 28^o more than smaller one. The smaller angle (in degree) is –

   a) 76^o b) 79^o c) 80^o d) 84^o

2. If 260 is the mean proportion between x and 338, what is the value of x?

   a) 200 b) 198 c) 199 d) 201

3. The average of first 14 whole number is –

   a) 6.5 b) 7.5 c) 3.7 d) 5.5

4. 12 men finished $\frac{1}{4}$ part of whole work in 6 days. Find the number of additional men required to complete the job in next 6 days.

   a) 36 b) 12 c) 18 d) 24

5. If $\cos x - 3\sin x = \sqrt{3}\sin x$, then the value of $\tan x$ is –

   a) $\frac{3-\sqrt{3}}{6}$ b) $3 - \sqrt{3}$ c) $\sqrt{3}$ d) $3 + \sqrt{3}$

6. A square field of 2 square km area is to be divided into two equal parts by a fence that coincides with a diagonal. Find the length of the fence.

   a) $\sqrt{2}$ km b) 2 km c) 3 km d) 1 km

7. If α and β are the roots of $x^2 - 5x + 3 = 0$, find the quadratic equation whose roots are α^2 and β^2.

   a) $x^2 + 19x - 9 = 0$ b) $x^2 - 19x - 9 = 0$ c) $x^2 - 19x + 9 = 0$ d) $x^2 + 19x + 9 = 0$

8. A box contains 6 white, 2 black and 3 red balls. If a ball is drawn at random, what is the probability that it will not be white?

   a) $\frac{5}{6}$ b) $\frac{6}{5}$ c) $\frac{5}{11}$ d) $\frac{6}{11}$

9. If the ratio of mean and median of a certain data is 4 : 5, find the ratio of its mean and mode?

   a) 5 : 4 b) 5 : 7 c) 3 : 7 d) 4 : 7

10.

Village	Population	Literate : Illiterate
A	1500	2 : 3
B	4000	11 : 9
C	3000	13 : 2
D	5500	4 : 1

What is the percentage of literate people in all the four villages together?

a) 67% b) 65% c) 72% d) 70%

11. Which of the following two successive discounts are equivalent to a single discount of 84% –

a) 30% and 70% b) 20% and 80% c) 40% and 60% d) 10% and 90%

12. Speed of a man in still water is $\frac{28}{3}$ km/hr. It takes him thrice as much time to row upstream as it takes to row downstream. What is the speed of stream?

a) $\frac{16}{3}$ km/hr b) $\frac{14}{3}$ km/hr c) $\frac{20}{3}$ km/hr d) 6 km/hr

13. In ΔABC, $BD \perp AC$ at D and $\angle DBC = 44^o$, E is a point on BC such that $\angle CAE = 34^o$. What is the measure of $\angle AEB$?

a) 78^o b) 80^o c) 56^o d) 46^o

14. Find the value of –

$$\left[\frac{2\cos A}{(1-\sin A)} + \frac{2\cos A}{(1+\sin A)}\right] \times 3\sqrt{\sec^2 A - 1}$$

a) 12 secA.tanA b) 4secA c) 18 secA.tanA d) 12 tanA

15. The speed of a car increases by 2 kms after every one hour. If the distance travelled in the first one hour was 35 kms, what was the total distance travelled in 12 hours?

a) 456 kms b) 482 kms c) 552 kms d) 556 kms

16. A copper wire having length of 243 mt and diameter 4 m.m. was melted to form a sphere. Find the diameter of the sphere.

a) 17 cm b) 18 cm c) 15 cm d) 20 cm