

Practice Questions Set 1

The test covers the following the topics:

- 1. Numbers**
- 2. GCD/LCM**
- 3. Surds and Indices**
- 4. Ratio and Proportion**
- 5. Mixture**

1. $(\sqrt{5} - \frac{1}{\sqrt{5}})^4$ equals:

A. $\frac{21}{5}$

B. 1

C. $\frac{21}{\sqrt{5}}$

D. None of these

A.

2. How many two-digit numbers satisfy this property: The last digit (unit's digit) of the square of the two-digit number is 8?

A. 1

B. 2

C. 3

D. None of these

3. It is desired to extract the maximum power of three from $24!$, where $n! = n(n-1)\dots 1$. What will be the exponent of 3?

A. 8

B. 9

C. 10

D. 11

4. If $\frac{x}{y}$ is a fraction greater than 1, then which of the following must be less than 1?

A. $\frac{x}{3y}$

B. $\frac{3y}{x}$

C. $\sqrt{\frac{x}{y}}$

D. $\frac{y}{x}$

E. y

5. In dividing a number by 585, a student employed the method of short division. He divided the number successively by 5, 9 and 13 (factors of 585) and got the remainders 4, 8 and 12. If he had divided the number by 585, the remainder would have been:

A. 24

B. 144

C. 292

D. 584

6. A, B and C start at the same time in the different directions to run around a circular stadium. A completes a round in 252 seconds, B in 308 seconds and C in 198 seconds, all starting at the same point. After what time will they meet again at the starting point?

A. 46 minutes and 12 seconds

B. 45 minutes

C. 42 minutes and 36 seconds

D. 26 minutes and 18 seconds

7. If x is a positive number and $2x + 12$ is divisible by x , then number of possible values of x is :

A. 2

B. 5

C. 6

D. 12

8. The salaries A, B, C are in the ratio 2 : 3 : 5. If the increments of 15%, 10% and 20% are allowed respectively in their salaries, then what will be new ratio of their salaries?

A. 3 : 3 : 10

B. 10 : 11 : 20

C. 23 : 33 : 60

D. Cannot be determined

9. There are two alloys of gold, silver and platinum. The first alloy is known to contain 40% of platinum and second alloy 26 % of silver. The percentage of gold is the same in both alloys. Having alloyed 150 kg of the first alloy and 250 kg of second alloy that contains 30% of gold. How many kg of platinum is there in new alloy ?

A. 170 kg

B. 175 kg

C. 160 kg

D. 165 kg

E. None of these

F. Cannot be determined

10. Sonu gets a jewellery made of an alloy of copper and silver. The alloy with a weight of 8 kg contains p % of copper. What piece of a copper-silver alloy containing 40 % silver must be alloyed with the first piece in order to obtain a new alloy with the minimum percentage of copper if the weight of second piece is 2 kg?

A. 2 kg for $p > 60$, a kg, where $a \in [0, 2]$, for $p = 60$, 0 kg for $0 < p < 60$

B. 0 kg for $p > 60$, a kg, where $a \in [0, 2]$, for $p = 60$, 0 kg for $0 < p < 60$

C. 0 kg for $p > 60$, a kg, where $a \in [0, 3]$, for $p = 70$, 0 kg for $0 < p < 60$

D. None of these

E. Cannot be determined