

### ONGC Jr. Technical Assistant Placement Question Paper

1. A certain type of mixture is prepared by mixing brand A at Rs.9 a kg. with brand B at Rs.4 a kg. If the mixture is worth Rs.7 a kg., how many kgs. of brand A are needed to make 40kgs. of the mixture?

Ans. Brand A needed is 24kgs.

2. A wizard named Nepo says "I am only three times my son's age. My father is 40 years more than twice my age. Together the three of us are a mere 1240 years old." How old is Nepo?

Ans. 360 years old.

3. One dog tells the other that there are two dogs in front of me. The other one also shouts that he too had two behind him. How many are they?

Ans. Three.

4. A man ate 100 bananas in five days, each day eating 6 more than the previous day. How many bananas did he eat on the first day?

Ans. Eight.

5. If it takes five minutes to boil one egg, how long will it take to boil four eggs?

Ans. Five minutes.

6. Three containers A, B and C have volumes a, b, and c respectively; and container A is full of water while the other two are empty. If from container A water is poured into container B which becomes 1/3 full, and into container C which becomes 1/2 full, how much water is left in container A?

7. ABCE is an isosceles trapezoid and ACDE is a rectangle. AB = 10 and EC = 20. What is the length of AE?

Ans. AE = 10.

8. In the given figure, PA and PB are tangents to the circle at A and B respectively and the chord BC is parallel to tangent PA. If AC = 6 cm, and length of the tangent AP is 9 cm, then what is the length of the chord BC?

Ans. BC = 4 cm.

9 Three cards are drawn at random from an ordinary pack of cards. Find the probability that they will consist of a king, a queen and an ace.

Ans. 64/2210.

10. A number of cats got together and decided to kill between them 999919 mice. Every cat killed an equal number of mice. Each cat killed more mice than there were cats. How many cats do you think there were ?

Ans. 991.

11. If  $\log_2 x - 5 \log x + 6 = 0$ , then what would the value / values of x be?

Ans.  $x = e^2$  or  $e^3$ .

12. The square of a two digit number is divided by half the number. After 36 is added to the quotient, this sum is then divided by 2. The digits of the resulting number are the same as those in the original number, but they are in reverse order. The ten's place of the original number is equal to twice the difference between its digits. What is the number?

Ans. 46

13. Can you tender a one rupee note in such a manner that there shall be total 50 coins but none of them would be 2 paise coins.?

Ans. 45 one paise coins, 2 five paise coins, 2 ten paise coins, and 1 twenty-five paise coins.

14. A monkey starts climbing up a tree 20ft. tall. Each hour, it hops 3ft. and slips back 2ft. How much time would it take the monkey to reach the top?

Ans. 18 hours.

15. What is the missing number in this series? 8 2 14 6 11 ? 14 6 18 12

Ans. 9

16. The minute hand of a clock overtakes the hour hand at intervals of 64 minutes of correct time. How much a day does the clock gain or lose?

Ans.  $32 \frac{8}{11}$  minutes.

17. Solve for x and y:  $\frac{1}{x} - \frac{1}{y} = \frac{1}{3}$ ,  $\frac{1}{x^2} + \frac{1}{y^2} = \frac{5}{9}$ .

Ans.  $x = \frac{3}{2}$  or  $-3$  and  $y = 3$  or  $-\frac{3}{2}$ .

18. Daal is now being sold at Rs. 20 a kg. During last month its rate was Rs. 16 per kg. By how much percent should a family reduce its consumption so as to keep the expenditure fixed?

Ans. 20 %.

19. Find the least value of  $3x + 4y$  if  $x^2y^3 = 6$ .

Ans. 10.

20. Can you find out what day of the week was January 12, 1979?

Ans. Friday.

21. A garrison of 3300 men has provisions for 32 days, when given at a rate of 850 grams per head. At the end of 7 days a reinforcement arrives and it was found that now the provisions will last 8 days less, when given at the rate of 825 grams per head. How, many more men can it feed?

Ans. 1700 men.

22. From 5 different green balls, four different blue balls and three different red balls, how many combinations of balls can be chosen taking at least one green and one blue ball?

Ans. 3720.

23. Three pipes, A, B, & C are attached to a tank. A & B can fill it in 20 & 30 minutes respectively while C can empty it in 15 minutes. If A, B & C are kept open successively for 1 minute each, how soon will the tank be filled?

Ans. 167 minutes.

24. A person walking  $\frac{5}{6}$  of his usual rate is 40 minutes late. What is his usual time?

Ans. 3 hours 20 minutes.

25. Mr. Shah decided to walk down the escalator of a tube station. He found that if he walks down 26 steps, he requires 30 seconds to reach the bottom. However, if he steps down 34 stairs he would only require 18 seconds to get to the bottom. If the time is measured from the moment the top step begins to descend to the time he steps off the last step at the bottom, find out the height of the stair way in steps?

Ans. 46 steps.