

MAT 2008 (07/12/08)**Quantitative Ability**

1. In an exam, a student scored 30% in the first paper out of total of 180. How much should he score in the second paper (out of 150) if he is to get at least 50% marks overall?

Ans. 74%

2. The length of a rectangular field is double its width. Inside the field there is a square-shaped pond 8 m long. If the area of the pond is $\frac{1}{8}$ of the area of the field, what is the length of the field?

Ans. 16 m

3. Two wheels having 16 and 27 cogs, work into each other. If the latter turns 80 times in three-quarters of a minute, how often does the other turn in 8 seconds?

Ans. 24

4. A boy buys milk contained in 10 vessels of equal size. If he sells his milk at Rs. 5 a litre, he loses Rs. 200; if he sells it at Rs. 6 a litre, he would gain Rs. 150 on the whole. Find the number of litres contained in each vessel.

Ans. 35 litres

5. A boy buys pens at a certain price per dozen and sells them at eight times per hundred. What is his gain or loss per cent?

Ans. 4% loss

6. A plane travels distances 2500 km, 1200 km and 500 km at the rate of 500 km/hr, 400 km/hr, and 250 km/hr, respectively. The average speed is

Ans. 420 km/hr

7. 7% of the total quantity of wheat is lost in grinding when a country has to import 6 million tonnes, but when only $5\frac{1}{5}\%$ is lost, it can import 3 million tonnes. Find the quantity of wheat grown in the country.

Ans. 500 million tones

8. A box with dimensions 8 m \times 7 m \times 6 m is to carry small boxes of dimensions 8 cm \times 7 cm \times 6 cm. The maximum number of boxes that can be carried in the wooden box is

Ans. 10,00,000

9. The horizontal distance between two towers is 60 m. The angular elevation of the top of the taller tower as seen from the top of the shorter one is 30° . If the height of the taller tower is 150 m, the height of the shorter one is

Ans. 116 m

10. The mean daily profit made by a shopkeeper in a month of 30 days was Rs. 350. If the mean profit for the first fifteen days was Rs. 275, then the mean profit for the last fifteen days would be

Ans. Rs. 425

11. There were 35 students in a hostel. If the number of students increases by 7, the expenses of the mess increase by Rs. 42 per day while the average expenditure per head diminishes by Re 1. Find the original expenditure of the mess.

Ans. Rs. 420

12. The ratio between the number of passengers traveling by I and II class between the two railway stations is 1 : 50, whereas the ratio of I and II class fares between the same stations is 3 : 1. If on a particular day, Rs. 1,325 were collected from the passengers traveling between these stations, then what was the amount collected from the II class passengers?

Ans. Rs. 1,250

13. A boat travels upstream from B to A and downstream from A to B in 3 hours. If the speed of the boat in still water is 9 km/hour and the speed of the current is 3 km/hour, the distance between A and B is

Ans. 12 km

14. A man travels $\frac{2}{3}$ of the distance by bus and $\frac{3}{4}$ of the rest, partly by car, and partly by foot. If he travels 2 km on foot, find the distance covered by him.

Ans. 24 km

15. The fuel indicator in a car shows $\frac{1}{5}$ th of the fuel tank as full. When 22 more litres of fuel are poured into the tank, the indicator rests at the three-fourth of the full mark. Find the capacity of the fuel tank.

Ans. 40 litres

16. The capacity of the tank is 2400 m^3 . The emptying capacity of the pump is 10 m^3 per minute higher than its filling capacity. Consequently, the pump needs 8 minutes less to empty the tank than to fill it. Find the filling capacity of the pump.

Ans. $50 \text{ m}^3/\text{min}$

17. A sum of money is accumulating at compound interest at a certain rate of interest. If simple interest instead of compound were reckoned, the interest for the first two years would be diminished by Rs. 20 and that for the first three years, by Rs. 61. Find the sum.

Ans. Rs. 8,000

18. If the train moved 4 km/h faster, it would take 30 minutes less. If it moved 2 km/h slower, it would have taken 20 minutes more. Find the distance.

Ans. 60 km

19. A train passes a station platform in 36 seconds and a man standing on the platform in 20 seconds. If the speed of the train is 54 km/h find the length of the platform.

Ans. 240 m

20. Two trains, 130 and 110 metres long, are going in the same direction. The faster train takes one minute to pass the other completely. If they are moving in opposite directions, they pass each other completely in 3 seconds. Find the speed of the faster train.

Ans. 42 m/sec

21. A motor boat can travel at 10 km/h in still water. It traveled 91 km downstream in a river and then returned, taking altogether 20 hours. Find the rate of flow of the river.

Ans. 3 km/hr

22. A, B, C are three participants in a kilometre race. If A can give B a start of 40 metres and B can give C a start of 25 metres, how many metres of a start can A give to C?

Ans. 64 m

23. In a 400 metres race, A gives B a start of 5 seconds and beats him by 15 metres. In another race of 400 metres, A beats B by $7\frac{1}{7}$ seconds. Find their speeds.

Ans. 8 m/sec, 7 m/sec

24. The average age of all the students of a class is 18.0 years. The average age of boys of the class is 20 years and that of the girls is 15 years. If the number of girls in the class is 20, then find the number of boys in the class.

Ans. 30

25. The total tractor population in a state is 2,94,000, out of which 1,50,000 are made by Mahindra & Mahindra. Out of every 1,000 Mahindra tractors, 98 are red in colour, but only 5.3% of the total tractor population is red. Find the percentage of non-Mahindra tractor that are red.

Ans. 6.125%

27. A candidate is selected for interview for three posts. For the first post there are 5 candidates, for the second there are 8 and for the third there are 7. What are the chances for his getting at least one post?

Ans. $\frac{2}{5}$

28. If 15 men or 24 women or 36 boys can do a piece of work in 12 days, working 8 hours a day, how many men must be associated with 12 women and 6 boys to do another piece of work $2\frac{1}{4}$ times as great in 30 days working 6 hours a day?

Ans. 8

29. Out of a group of swans, $\frac{7}{2}$ times the square root of the number are playing on the shore of the pond. The two remaining are inside the pond. What is the total number of swans?

Ans. 16