

28500

Paper-II**Part—I (GENERAL MATHEMATICS)****(Descriptive Type)****Full Marks : 50****Time : 1 hour***The questions are of equal value*

1. A is 25 years older than B. If the product of their ages is 1250, then find the ages of A and B.
2. Ram deposits ₹ 50,000 in a bank. If the rate of interest per annum is 10 percent, then find the amount of compound interest he will receive after 5 years.
3. Simplify :

$$\frac{10^{-3} - 10^{-2} - 10^{-1}}{0.109} \times \{(0.001)^2 + (0.1)^4\}$$

4. The denominator of a fraction is 3 more than the numerator. If the numerator as well as the denominator is increased by 4, the fraction becomes $\frac{100}{101}$. Find the original fraction.

T25/201

(Turn Over)

5. Rupam is travelling on his cycle and has calculated to reach point A at 2 pm if he travels at 10 km per hour, he will reach there at 12 noon if he travels at 15 km per hour. At what speed must he travel to reach A at 1 pm?
6. The minute hand of a watch is 1.2 cm long. How far does its tip move in 20 minutes? (Use $\pi = 3.14$)

7. If

$$\frac{xy}{x+y} = a, \frac{zx}{z+x} = b \text{ and } \frac{yz}{y+z} = c$$

where a, b, c are other than zero, then prove that

$$x = \frac{2abc}{ac+bc-ab}$$

8. If r and s are the roots of the equation $ax^2 + bx + c = 0$, then find the value of

$$\frac{1}{r^2} + \frac{1}{s^2}$$

9. Tea worth of ₹ 135 per kg and ₹ 126 per kg are mixed with a third variety in the ratio 1:1:2. If the mixture is worth ₹ 153 per kg, then find the price of the third variety in per kg.

10. 150 persons were engaged to finish a job in a certain number of days. 4 persons dropped out on second day, 4 more persons dropped out on third day and so on. It took 8 more days to finish the work. Find the number of days in which the work was completed.

10-1. The above were engaged in this job for a
 certain number of days. A person dropped out
 of the job. I wrote persons about a job on
 the job. I took the job. I took the job. I took the job.
 I took the job. I took the job. I took the job.
 I took the job. I took the job. I took the job.
 I took the job. I took the job. I took the job.

10-2

10-3

10-4