

Time : 00:45:00 Hrs

Total Marks : 30

- 1) The denominator of a fraction is one more than twice the numerator.If the sum of the fraction and its reciprocal is $2\frac{16}{21}$ then find the fraction. 3
- 2) A girl is twice as old as her sister. Four years hence, the product of their ages will be 160. Find their present ages. 3
- 3) The sum of the squares of three consecutive natural numbers is 110. Determine the numbers. 3
- 4) The speed of a boat in still water is 15 km/h. It can go 30 km upstream and return downstream to the original point in 4h and 30 min. Find the speed of the stream. 3
- 5) A dealer sells a toy for Rs. 24 and gains as much per cent as the cost price of the toy. Find the cost price of the toy. 3
- 6) Solve for x: $\frac{x+1}{x-1} + \frac{x-2}{x+2} = 4 - \frac{2x+3}{x-2}; x \neq 1, -2, 2$ 3
- 7) Solve for x $\frac{1}{(x-1)(x-2)} + \frac{1}{(x-2)(x-3)} = \frac{2}{3}; x \neq 1, 2, 3$ 3
- 8) Find the value of k for which the quadratic equation $(k-2)x^2+2(2k-3)x+(5k-6)=0$ has equal roots 3
- 9) If the quadratic equation, $(1 + a^2)b^2x^2 + 2abcx + (c^2 = m^2(1 + a^2))$ 3
- 10) A journey of 192 km from a town A to town B takes 2 hours more by an ordinary passenger train than a super fast train. If the speed of the faster train is 16 km/h more, find the speed of the faster and the passenger train. 3
