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SAMPLE PAPER 09 : PERIODIC TEST – 1 (2019 – 20)
CLASS – X
MATHEMATICS

T.T. 1:30 **M.M. 40**

General Instructions:

1. All questions are compulsory.
2. Question paper is divided into four sections: Section A contains 10 Objective type questions each carry 1 mark, Section B contains 3 questions each carry 2 marks, Section C contains 4 questions each carry 3 marks and Section D contains 3 questions each carry 4 marks.

SECTION – A(1 marks each)

1. Which term of the AP 72, 63, 54, ……. is 0?
(a) 8th (b) 9th (c) 11^{th} (d) 12th

2. A man receives Rs. 60 for the first week and Rs. 3 more each week than the preceeding week. How much does he earns by the 20th week ?
(a) Rs. 1760 (b) Rs. 1770 (c) Rs. 1780 (d) Rs. 1790

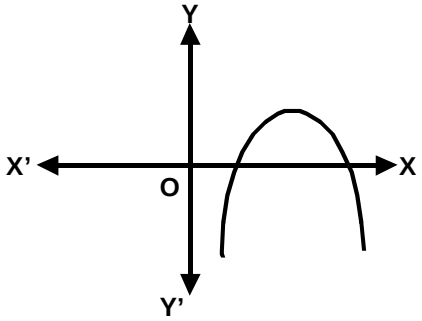
3. The value of $\sqrt{6+\sqrt{6+\sqrt{6+....}}}$ is
(a) 4 (b) 3 (c) –2 (d) $\frac{7}{2}$

4. Find the values of k for which the quadratic equation $(k-12)x^2 + 2(k-12)x + 2 = 0$ has real and equal roots.
(a) k = 0 or k = 14 (b) k = 12 or k = 24 (c) k = 14 or k = 12 (d) k = 1 or k = 12

5. If the pair of equations 2x + 3y = 7 and $kx + \frac{9}{2}y = 12$ have no solution, then the value of k is:
(a) $\frac{2}{3}$ (b) – 3 (c) 3 (d) $\frac{3}{2}$

6. The solution of the equations x + y = 14 and x – y =4 is
(a) x = 9 and y = 5 (b) x = 5 and y = 9 (c) x = 7 and y = 7 (d) x = 10 and y = 4

7. The number of zeroes of the polynomial from the graph is
(a) 0 (b) 1 (c) 2 (d) 3



8. A number when divided by 61 gives 27 quotient and 32 as remainder is
(a) 1679 (b) 1664 (c) 1449 (d) none of these

9. The relationship between the zeroes & coefficients of the quadratic polynomial $ax^2 + bx + c$ is (a) $\alpha + \beta = \frac{c}{a}$ (b) $\alpha + \beta = \frac{-b}{a}$ (c) $\alpha + \beta = \frac{-c}{a}$ (d) $\alpha + \beta = \frac{b}{a}$

10. The product of L.C.M and H.C.F. of two numbers is equal to
(a) Sum of numbers (b) Difference of numbers
(c) Product of numbers (d) Quotients of numbers

SECTION – B(2 marks each)

11. Determine the smallest 3-digit number which is exactly divisible by 6, 8 and 12.

12. If the sum of first n terms of an A.P. is given by $S_n = 3n^2 + 5n$, find the nth term of the A.P.

13. Find a quadratic polynomial whose zeroes are 2 and –3.

SECTION – C(3 marks each)

14. Show that any positive odd integer is of the form 6q + 1 or 6q + 3 or 6q + 5 where $q \in Z$.

15. A fraction becomes $\frac{9}{11}$, if 2 is added to both the numerator and the denominator. If 3 is added to both the numerator and the denominator it becomes $\frac{5}{6}$. Find the fraction.

16. Solve: $\frac{x-3}{x+3} - \frac{x+3}{x-3} = 6\frac{6}{7}, (x \neq -3, 3)$

17. If the sum of first 7 terms of an AP is 49 and that of 17 terms is 289 , find the sum of first n terms.

SECTION – D(4 marks each)

18. Obtain all the zeroes of $3x^4 + 6x^3 - 2x^2 - 10x - 5$, if two of its zeroes are $\sqrt{\frac{5}{3}}$ and $-\sqrt{\frac{5}{3}}$.

19. Solve the following system of linear equations graphically: $2x + y - 5 = 0; \quad x + y - 3 = 0$. Find the points where these lines meet the y-axis.

20. A pole has to be erected at a point on the boundary of a circular park of diameter 13 metres in such a way that the differences of its distances from two diametrically opposite fixed gates A and B on the boundary is 7 metres. Is it possible to do so? If yes, at what distances from the two gates should the pole be erected?