

THE INDIAN SCHOOL
PERIODIC TEST - 1 (2017-18)
SUBJECT-MATHEMATICS

MAXIMUM MARKS: 40

CLASS-10

TIME: 1.5 Hr

1. Write the H.C.F of the smallest composite number and the smallest prime number. 1
2. A bag contains cards numbered from 1 to 49. One card is drawn at random from the bag, after mixing the cards thoroughly. Find the probability that the number on the drawn card is a multiple of 5. 1
3. For what value of n , the n^{th} terms of two AP's $59, 61, 63, \dots$, and $-11, -4, 3, 10, \dots$ are equal? 1
4. State true or false :
 - 1) 2.717117111711117 is a rational number. 2
 - 2) State whether $7125 / 3 \times 5^2 \times 2^2$ is a terminating decimal or non-terminating recurring decimal expression. 2
5. A class of 20 boys and 15 girls is divided into n groups so that each group has x boys and y girls. Find the number of girls and boys. 2
6. Find the sum of all the multiples of 7 lying between 500 and 900. 2
7. If the zeroes of the polynomial $x^2 + px + q$ are double of the zeroes of $2x^2 - 5x - 3$, respectively. Find the values of p and q . 2
8. If the polynomial $x^4 + x^3 + 8x^2 + ax + b$ is divisible by $(x^2 + 1)$, then find the value of a and b . 2
9. Determine the sum of the first 35 terms of an A.P if its second term is 2 and the seventh term is 22. 2
10. The sum of the fifth term and the seventh term of an A.P. is 52 and the tenth term is 46. Find the A.P. 3
11. A bag contains 12 green balls and x black balls. If one ball is drawn at random from the bag what is the probability of getting a black ball? If two red balls are put in the bag and two black balls are taken out of the bag, the probability of drawing a black ball is now two third of what it was before. Find x . 3
12. If the zeroes of $ax^2 + bx + c$ be in the ratio $4 : 5$, then show that $20b^2 = 81ac$. 3
13. Prove that the square of any positive integer is of the form $5q$, $5q + 1$ and $5q + 4$ for some integers q . 4
14. All the black cards are removed from a pack of 52 cards. The remaining cards are well shuffled and then a card is drawn at random. Find the probability of getting : 4
 - a. a Face card
 - b. a Red card
 - c. a Black card
 - d. Honour card
15. If the first term of an A.P is 2 and sum of its first five terms is equal to $\frac{1}{4}$ of the sum of next five terms, Find the sum of first 30 terms. 4
16. Prove that if x and y are both odd positive integers, then $x^2 + y^2$ is even but not divisible by 4.