KENDRIYA VIDYALAYA SANGATHAN (AHMEDABAD REGION)

SAMPLE PAPER 1

Periodic Test-1 SESSION: 2019-20

Class X Mathematics

Max. Marks: 40 Time Allowed: 2 Hours

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Section A** | | | | | | | | | | |
| 1 |  | The decimal expansion of the rational number will terminate after: | | | | | | | | 1 |
|  |  | (a) One decimal Place | | (b) Two decimal places | | (c) Three decimal places | | | (d) Four decimal places |  |
| 2 |  | n*2*– 1 is divisible by 8, if *n* is | | | | | | | | 1 |
|  |  | (a) an integer | | | (b) a natural number | | (c) an odd integer | (d) an even integer | |  |
| 3 |  | If two positive integers *a* and *b* are written as  *a* = *x*3*y*2 and *b* = *xy*3; *x*, *y* are prime numbers, then HCF (*a*, *b*) is | | | | | | | | 1 |
|  |  | (a) *xy* | | | (b) *xy*2 | | (c) *x*3*y*3 | (d) *x*2*y*2 | |  |
| **Section B** | | | | | | | | | | |
| 4 |  | | Solve the pair of linear equations in x and y:  3*x* + 4*y* = 10 and 2*x* – 2*y* = 2 | | | | | | | 2 |
| 5 |  | | Find the roots of the quadratic equation 6*x*2 – *x* – 2 = 0. | | | | | | | 2 |
| 6 |  | | Which term of the AP : 21, 18, 15, . . . is – 81? | | | | | | | 2 |
| **Section C** | | | | | | | | | | |
| 7 |  | | Use Euclid’s division lemma to show that the square of any positive integer is either of the form 3*m* or 3*m* + 1 for some integer *m*. | | | | | | | 3 |
| 8 |  | | Find the zeroes of the quadratic polynomial *x*2 + 7*x* + 10, and verify the relationship between the zeroes and the coefficients. | | | | | | | 3 |
| 9 |  | | Form a quadratic polynomial, whose zeroes are –3 and 2. | | | | | | | 3 |
| **Section D** | | | | | | | | | | |
| 10 |  | | The sum of the digits of a two-digit number is 9. Also, nine times this number is twice the number obtained by reversing the order of the digits. Find the number. | | | | | | | 4 |
|  |  | | **OR** | | | | | | |  |
|  |  | | Ritu can row downstream 20 km in 2 hours, and upstream 4 km in 2 hours. Find her speed of rowing in still water and the speed of the current. | | | | | | |  |
| 11 |  | | Find the discriminant of the equation 3*x*2 – 2*x* + = 0 and hence find the nature of its roots. Find them, if they are real. | | | | | | | 4 |
| 12 |  | | Find the sum of the first 15 multiples of 8. | | | | | | | 4 |
| **Section E** | | | | | | | | | | |
| 13 |  | |  | | | | | | |  |
|  | (a) | | Which points lie on the graph of equation: x+2y=5? | | | | | | | 1.5 |
|  | (b) | | Which points lie on the graph of equation: 2x- y=5? | | | | | | | 1.5 |
|  | (c) | | Which points lie on the graph of both equations? | | | | | | | 1 |
|  | (d) | | Find solution of the pair of linear equations: x+2y=5, 2x- y=5. | | | | | | | 1 |
| 14 |  | | Jaspal Singh repays his total loan of C:\Users\Intel\Desktop\download.png1,18,000 by paying every month starting with the first instalment of C:\Users\Intel\Desktop\download.png1000. If he increases the instalment by C:\Users\Intel\Desktop\download.png 100 every month. | | | | | | |  |
|  |  | | What amount will be paid by him in the 5th instalment? | | | | | | | 1 |
|  |  | | What amount will be paid by him in the 30th instalment? | | | | | | | 2 |
|  |  | | What amount of loan does he still have to pay after the 30th instalment? | | | | | | | 2 |

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SAMPLE PAPER 2

Periodic Test-1 SESSION: 2019-20

Class X Mathematics

Max. Marks: 40 Time Allowed: 2 Hours

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Section A** | | | | | | | | | | |
| 1 |  | Number 4n (where n is a natural number) end with | | | | | | | | 1 |
|  |  | (a) 0 | | (b) 2 | | (c) 4 | | | (d) 8 |  |
| 2 |  | For some integer *m*, every even integer is of the form | | | | | | | | 1 |
|  |  | (a) m | | | (b) 2m | | (c) m+1 | (d) 2m+1 | |  |
| 3 |  | If two positive integers *p* and *q* can be expressed as  *p* = *ab*2 and *q* = *a*3*b*; *a*, *b* being prime numbers, then LCM (*p*, *q*) is | | | | | | | | 1 |
|  |  | (a) ab | | | (b) a2b2 | | (c) a3b2 | (d) a3b3 | |  |
| **Section B** | | | | | | | | | | |
| 4 |  | | Solve the pair of linear equations in x and y:  5*x* – 4*y* + 8 = 0, 7*x* + 6*y* – 9 = 0 | | | | | | | 2 |
| 5 |  | | Find the roots of the quadratic equation 3*x*2 – 5*x* + 2 = 0 | | | | | | | 2 |
| 6 |  | | Find the 20th term from the last term of the AP : 3, 8, 13, . . ., 253. | | | | | | | 2 |
| **Section C** | | | | | | | | | | |
| 7 |  | | Use Euclid’s division lemma to Show that any positive odd integer is of the form 6*q* + 1, or 6*q* + 3, or 6*q* + 5, where *q* is some integer. | | | | | | | 3 |
| 8 |  | | Find the zeroes of the quadratic polynomial 6*x*2 – 3 – 7*x* and verify the relationship between the zeroes and the coefficients. | | | | | | | 3 |
| 9 |  | | Form a quadratic polynomial, whose zeroes are 3 and -4. | | | | | | | 3 |
| **Section D** | | | | | | | | | | |
| 10 |  | | A motor boat whose speed is 18 km/h in still water takes 1 hour more to go 24 km upstream than to return downstream to the same spot. Find the speed of the stream. | | | | | | | 4 |
|  |  | | **OR** | | | | | | |  |
|  |  | | The diagonal of a rectangular field is 60 metres more than the shorter side. If the longer side is 30 metres more than the shorter side, find the sides of the field. | | | | | | |  |
| 11 |  | | Find the discriminant of the equation 2*x*2 – 6*x* + 3 = 0 and hence find the nature of its roots. Find them, if they are real. | | | | | | | 4 |
| 12 |  | | The area of a rectangle gets reduced by 9 square units, if its length is reduced by 5 units and breadth is increased by 3 units. If we increase the length by 3 units and the breadth by 2 units, the area increases by 67 square units. Find the dimensions of the rectangle. | | | | | | | 4 |
| **Section E** | | | | | | | | | | |
| 13 |  | |  | | | | | | |  |
|  |  | | In the above Cartesian Plane  the x axis represents the values of variable x of the quadratic polynomial p(x) =x2-6x+8  the y axis represents the corresponding values of p(x)=x2-6x+8 | | | | | | |  |
|  | (a) | | Complete the following table   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | x | 0 | 1 | 2 | 3 | 4 | 5 | 6 | | p(x) |  |  |  |  |  |  |  | | Name of the point on the graph |  |  |  |  |  |  |  | | | | | | | | 3 |
|  | (b) | | Find the zeroes of the quadratic polynomial p(x) =x2-6x+8 | | | | | | | 2 |
| 14 |  | |  | | | | Find area of the square and the rectangle in terms of x | | | 1 |
|  |  | |  | | | | Find combined Area of both Square and Rectangle | | | 1 |
|  |  | |  | | | | Rectangle is divided into two equal parts as shown in the figure | | |  |
|  |  | |  | | | | Each of these equal parts is attached along two adjacent sides of the square as shown in the figure. | | |  |
|  |  | |  | | | | To make the figure in the complete square one square of side length 2 units is added and then subtracted.  Therefore,  Combined area of square and rectangle = x2+4x=(x+2)2-22 | | |  |
|  |  | | Using above observation  Quadratic Equation: x2+4x-5 =0 can be expressed as (x+2)2-22-5=0  i.e (x+2)2-9=0 | | | | | | |  |
|  |  | | Find roots of the quadratic equation. | | | | | | | 3 |

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SAMPLE PAPER 3

Periodic Test-1 SESSION: 2019-20

Class X Mathematics

Max. Marks: 40 Time Allowed: 2 Hours

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Section A** | | | | | | | | | | | | | | | |
| 1 |  | | | For some integer *q*, every odd integer is of the form | | | | | | | | | | | 1 |
|  |  | | | (a) q | | (b) 2q | | | | (c) q+1 | | | | (d) 2q+1 |  |
| 2 |  | | | The largest number which divides 70 and 125, leaving remainders 5 and 8 respectively is | | | | | | | | | | | 1 |
|  |  | | | (a) 13 | | | (b) 65 | | | | | (c) 875 | (d) 1750 | |  |
| 3 |  | | | The decimal expansion of the rational number . Will terminate after | | | | | | | | | | | 1 |
|  |  | | | (a) One decimal Place | | | (b) Two decimal places | | | | | (c) Three decimal places | (d) Four decimal places | |  |
| **Section B** | | | | | | | | | | | | | | | |
| 4 |  | | | | Solve the pair of linear equations in x and y:  2*x* + 3*y* = 11 and 2*x* – 4*y* = – 24 | | | | | | | | | | 2 |
| 5 |  | | | | Find the roots of the quadratic equation  *x*2 – 3*x* – 10 = 0 | | | | | | | | | | 2 |
| 6 |  | | | | Which term of the AP : 3, 15, 27, 39, . . . will be 132 more than its 54th term? | | | | | | | | | | 2 |
| **Section C** | | | | | | | | | | | | | | | |
| 7 | | |  | | Use Euclid’s division lemma to Show that any positive odd integer is of the form 4*q* + 1 or 4*q* + 3, where *q* is some integer. | | | | | | | | | | 3 |
| 8 | | |  | | Find the zeroes of the quadratic polynomial 3*x*2 – 5*x* + 2 = 0, and verify the relationship between the zeroes and the coefficients. | | | | | | | | | | 3 |
| 9 | | |  | | Form a quadratic polynomial, whose zeroes are 5 and -4. | | | | | | | | | | 3 |
| **Section D** | | | | | | | | | | | | | | | |
| 10 | |  | | | Five years ago, Nuri was thrice as old as Sonu. Ten years later, Nuri will be twice as old as Sonu. How old are Nuri and Sonu? | | | | | | | | | | 4 |
|  | |  | | | **OR** | | | | | | | | | |  |
|  | |  | | | A fraction becomes when 1 is subtracted from the numerator and it becomes when 8 is added to its denominator. Find the fraction. | | | | | | | | | |  |
| 11 | |  | | | Find the discriminant of the equation *x*2 + 7*x* – 60 = 0 and hence find the nature of its roots. Find them, if they are real. | | | | | | | | | | 4 |
| 12 | |  | | | Find the sum –5 + (–8) + (–11) + . . . + (–230) | | | | | | | | | | 4 |
| **Section E** | | | | | | | | | | | | | | | |
| 13 | |  | | | Find ratios of coefficients of linear equations of two variables whose graphs are given below (i.e ) and match with conditions given in the second colomn. | | | | | | | | | | 5 |
|  | | a | | |  | | | | | |  | | | |  |
|  | | b | | |  | | | | | |  | | | |  |
|  | | c | | |  | | | | | |  | | | |  |
| 14 | |  | | | Sweets in the shape of sphere (Ladoos) are arranged in the square service tray as shown in the figure. There are 16 sweets in the bottom layer. 19 sweets in the next layer and so on. | | | | | | | | | |  |
|  | |  | | | Top View | | | | Side View | | | | | |  |
|  | |  | | |  | | |  | | | | | | |  |
|  | |  | | |  | | |  | | | | | | |  |
|  | |  | | | In how many layers sweets can be arranged? | | | | | | | | | | 1 |
|  | |  | | | Find the number of sweets in each layer. Are they in the Arithmetic progression? | | | | | | | | | | 2 |
|  | |  | | | Find the total number of sweets can be arranged? | | | | | | | | | | 2 |