**Class – IX**

**Session -2021-22**

**TERM 1 ( Set-2)**

**Subject- Mathematics (Standard) 041**

**Time Allowed: 90 minutes Maximum Marks: 40**

**General Instructions:**

 1. The question paper contains three parts A, B and C

2. Section A consists of 20 questions of 1 mark each. Any 16 questions are to be attempted

3. Section B consists of 20 questions of 1 mark each. Any 16 questions are to be attempted

 4 Section C consists of 10 questions based on two Case Studies. Attempt any 4 questions from each Case Studies.

 5. There is no negative marking.

**SECTION A**

( Section A consists of 20 questions of 1 mark each. Any 16 questions are to be attempted)

|  |  |  |
| --- | --- | --- |
|  | The name of horizontal and the vertical lines drawn to determine the position of any point in the Cartesian plane?1. ordinate and abscissa
2. abscissa and ordinate
3. X axis and Abscissa
4. Y-axis and ordinate
 | [1] |
|  | A linear equation in two variables has 1. infinitely many solutions.
2. Only two solution
3. It depends upon the coefficients of the variables
4. None of these
 | [1] |
|  | OQ is a line. Ray OR is perpendicular to line PQ. OS is another ray lying between rays OP and OR. If ∠ QOS = 1250 and ∠ POS = 630  then the value of ∠ ROS is1. 620
2. 260
3. 310
4. 130
 | [1] |
|  | The area of a regular hexagon is 600http://server/tlm/imgRep/105/3725/1.gifcm2. Determine its perimeter.1. 100 cm
2. 110 cm
3. 120 cm
4. 125 cm
 | [1] |
|  | AB is a line segment and line l is its perpendicular bisector. If a point P lies on l, then1. AP=BP
2. AB=AP=BP
3. Can’t say
4. Insufficient of data
 | [1] |
|  | If 2x=3y=6z then $\frac{1}{x}+\frac{1}{y}=$1. 2
2. 3
3. 6
4. $\frac{1}{z}$
 | [1] |
|  | In the figure, BC = CE and http://server/tlm/imgRep/105/3035/1.gif1 = http://server/tlm/imgRep/105/3035/2.gif2. then                              http://server/tlm/imgRep/105/3035/9.gifCD is equal to1. GC
2. DE
3. GB
4. BC
 | [1] |
|  | The number representing A on the number line is1. 1.6
2. 1$\frac{2}{3}$
3. 1$\frac{1}{3}$
4. None of the above
 | [1] |
|  | The value of k, if x = 5, y = -2 is a solution of the equation 2x + 3y = k.1. -4
2. 4
3. 0
4. None of above
 | [1] |
|  | Find the value of http://server/tlm/imgRep/105/2521/1.gif given x=http://server/tlm/imgRep/105/2521/2.gif1. 2-$\sqrt{3}$
2. 2$\sqrt{3}$
3. 4
4. None of the above
 | [1] |
|  | E and F are respectively the mid-points of equal sides AB and AC of ∆ ABC then AEC angle is equal to 1. $∠$ABF
2. $∠$ACE
3. $∠$AFB
4. None of the above
 | [1] |
|  | Find the  sides of an isosceles right triangle whose area is 50 cm2.1. 5 cm
2. 10 cm
3. 15 cm
4. 20 cm
 | [1] |
|  | If DE is parallel to BC , BP and CP are the angle bisectors of B and C respectively and BD=a cm and CE= b cm, then DE=1. a-b
2. ab
3. a+b
4. none of these
 | [1] |
|  | Express $4.2\overbar{34}$ in the form of $\frac{p}{q}$ .1. $\frac{2097}{495}$
2. $\frac{4192}{999}$
3. $\frac{4294}{990}$
4. $\frac{2096}{495}$
 | [1] |
|  | A plane is divided by a horizontal and a vertical line segment into four parts then these are 1. equal to one an other
2. unequal to one an other
3. both (a) and (b)
4. None of the above
 | [1] |
|  | The decimal form of $\frac{327}{500}$ is1. 0.654
2. 0.645
3. 0.665
4. 0.655
 | [1] |
|  | If PQ || ST, ∠ PQR = 120° and ∠ RST = 110°, the magnitude of ∠ QRS is1. 200
2. 100
3. 50
4. None of these
 | [1] |
|  | ∆ABC is an isosceles triangle in which AB = AC. Side BA is produced to D such that AD = AB . The measure of ∠ BCD is 1. 600
2. 900
3. 1200
4. Can’t say
 | [1] |
|  | In the above figure, if AB is parallel to ED and BC is parallel EF, and $∠$BGD=1350. Find the value of $∠$DEF.1. 1350
2. 650
3. 450
4. None of the above
 | [1] |
|  | http://server/tlm/imgRep/105/2975/4.gifABCD is a trapezium, AB // CD, if AO and DO are the angle bisectors of A and D respectively, then $∠$AOD is1. 450
2. 900
3. 1350
4. None of the above
 | [1] |
|  | **SECTION-B**Section B consists of 20 questions of 1 mark each. Any 16 questions are to be attempted | [1] |
|  | The scale that is taken to plot (70, 90)on the graph paper is 1. 1 cm = 7 units
2. 1 cm = 9 units
3. 1cm = 10 units
4. None of the above
 | [1] |
|  | There is a triangular rose garden of dimensions 65 m, 70 m and 75 m. Find the cost of planting rose in it at the rate of Rs 75 per m2.1. Rs.157500
2. Rs.150500
3. Rs.157000
4. Rs.175500
 | [1] |
|  | In the given figure, both BM and DN are equal perpendiculars on the segment AC. Then1. AC trisect BD
2. AC bisects BD
3. AC is equal to BD
4. None of these
 | [1] |
|  | In the above fig. m and n are two mirrors placed perpendicular to each other. If the $∠$CAO is 550, then the measure of $∠$ 4 is 1. 550
2. 450
3. 350
4. None of these
 | [1] |
|  | An ant travels 5 cm in west direction and then 3 cm in north direction. Taking its starting point as the origin and east direction as positive x-axis, write its position as a co-ordinate on the graph.1. (5,3)
2. (-5,3)
3. (-5,-3)
4. (5,-3)
 | [1] |
|  | http://server/tlm/imgRep/105/2974/4.gifIn the figure, PS is the bisector of http://server/tlm/imgRep/105/2974/1.gifP and PT http://server/tlm/imgRep/105/2974/2.gifQR, the value of TPS is Q= 860 and R=630  then http://server/tlm/imgRep/105/2974/1.gifTPS is 1. 230
2. 460
3. 11.50
4. None of the above
 | [1] |
|  | Find two integers between 3 and 41. 3.1 and 4.1
2. 3.2 and 3.9
3. 2.9 and 4.1
4. None of the above
 | [1] |
|  | If both *a* and *b* are rational number, then *a* and *b* have http://server/tlm/imgRep/105/2471/1.gif1. exactly one pair of values
2. infinitely many pair of values
3. can’t say
4. None of the above
 | [1] |
|  | E is the mid point on the side BC of a **http://server/tlm/imgRep/105/3068/1.gif**ABC, such that the perpendiculars from E on the sides AB and AC are equal. Then LAE is equal to1. LEB
2. MEC
3. MAE
4. All of these http://server/tlm/imgRep/105/3068/3.gif
 | [1] |
|  | On dividing http://server/tlm/imgRep/105/2482/7.gif the quotient is1. 5+$\sqrt{6}$
2. 5-$\sqrt{6}$
3. 5$\sqrt{6}$
4. $\frac{5}{\sqrt{6}}$
 | [1] |
|  | Drawing room of Mr. Kapur has a triangular floor of dimensions 7 m, 8 m, 9 m respectively. He wants to cover it with marble tiles of size 20 cm http://server/tlm/imgRep/105/3715/1.gif 25 cm. How many tiles does he need to purchase?1. 587
2. 557
3. 337
4. 537
 | [1] |
|  | In the given figure, AB > AC and AD is the angle bisector of http://server/tlm/imgRep/105/3137/1.gifA. then *x*o  *http://server/tlm/imgRep/105/3137/2.gif*1. *greater than y0*
2. less than y0
3. equal to y0
4. None of these
 | [1] |
|  | The true class limits of 16-20, if 21-25, 26-30, 31-35 are the class intervals in the distribution is1. 16.5-20.5
2. 15.5 – 20.5
3. 16.5 – 21.5
4. None of the above
 | [1] |
|  | Out of the followings, which one is the example of an inclusive class interval1. 0 -10, 10-20 and so on
2. 1 -10, 11-20 and so on
3. 0.5 – 10.5, 10.5 – 20.5 so on
4. None of the above
 | [1] |
|  | If four isosceles right angled triangles of side 5 m are removed from the corners of a rectangular plot 20 m http://server/tlm/imgRep/105/3724/1.gif10 m, then find the area of the remaining portion.1. 160 m2http://server/tlm/imgRep/105/3724/12.gif
2. 1750 m2
3. 140 m2
4. 150 m2
 | [1] |
|  | The class-marks of a continuous and uniform frequency distribution are6, 10, 14, 18, 22, 26, 30. the class size of each class interval is1. 4
2. 8
3. 5
4. None of the above
 | [1] |
|  | http://server/tlm/imgRep/105/3988/22.gifIn the above figure the class marks of 20-25 is1. 13
2. 12.5
3. 9
4. 7
 | [1] |
|  | On simplifying http://server/tlm/imgRep/105/2488/1.gif, the simplest form is1. $\frac{6+\sqrt{15}}{21}$
2. $\frac{15+\sqrt{6}}{21}$
3. $\frac{6-\sqrt{15}}{21}$
4. None of the above
 | [1] |
|  | The coordinates of two points which lie on the opposite sides of the y-axis and equidistant from the Y- axis are1. (-3,4) and (-4,3)
2. (-3,4) and (3,4)
3. (-3,4) and (4,3)
4. (-3,4) and (4,-3)
 | [1] |
|  | if one acute angle is double the other, then the length of the hypotenuse is 1. twice the length of the smallest side
2. thrice the length of the smallest side
3. greater than the other two sides
4. All of these
 | [1] |
|  | **SECTION- C**Section C consists of 10 questions based on two Case Studies. Attempt any 4 questions from each Case Studies.**CASE STUDY - I** | [1] |
|  | 100 plants each were planted in 100 schools during Van Mahotsava. After one month, the number of plants that survived were recorded as : 95, 67,28, 32, 65, 65, 69, 33, 98, 96, 76, 42, 32, 38, 42, 40 ,40 ,69 ,95 ,92 ,75 ,83 ,76 ,83, 85, 62, 37 65, 63, 42, 89, 65, 73, 81, 49, 52, 64, 76, 83, 92, 93, 68, 52, 79, 81, 83, 59, 82, 75, 82, 86, 90, 44, 62, 31, 36, 38, 42, 39, 83, 87, 56, 58, 23, 35, 76, 83, 85, 30, 68, 69, 83, 86, 43, 45, 39, 83, 75, 66, 83, 92, 75, 89, 66, 91, 27, 88, 89, 93, 42, 53, 69, 90, 55, 66, 49, 52, 83, 34, 36. To present such a large amount of data so that a reader can make sense of it easily, we condense it into groups like 20-29, 30-39, . . . , 90-99.

|  |  |  |
| --- | --- | --- |
| Class Interval | Tally marks | Frequency |
| 20 -29 |  | 3 |
| 30-39 |  | 11 |
| 40-49 |  | 12 |
| 50-59 |  | 8 |
| 60-69 |  | 18 |
| 70-79 |  | 10 |
| 80-89 |  | 23 |
| 90-99 |  | 12 |

 | [1] |
|  | The number of school in which maximum number of plants survive is1. 99
2. 23
3. 80
4. None of the above
 | [1] |
|  | The number of school in which minimum number of plants survive is1. 29
2. 20
3. 3

 d) None of the above | [1] |
|  |  Group of trees that are survived in equal number of schools are1. 90-99 and 40-49
2. 50-59 and 60-69
3. 90-99 and 80-89
4. None of the above
 | [1] |
|  | Number of schools in which 75 trees survived is1. 18
2. 10
3. 23
4. None of the above
 | [1] |
|  | Number of schools in which no trees survived is1. 3
2. 0
3. 12
4. None of the above

**CASE STUDY - II** | [1] |
|  |  |  |
|  | In the above figure which two pair of angles are equal1. $<1=<8$
2. $<1=<5$
3. $<1=<3$
4. $<1=<6$
 | [1] |
|  | Sum of which pair of angles is 18001. <2 and <6
2. <2 and <3
3. <2 and <8
4. <2 and <4
 | [1] |
|  | Which of following pair of angles form a pair of corresponding angles1. <1 and <5
2. <1 and <6
3. <3 and <5
4. <3 and <4
 | [1] |
|  | Which of following pair of angles form a pair of alternate exterior angles1. <4 and <5
2. <4 and <6
3. <4 and <8
4. None of the above
 | [1] |
|  | Under which of the following condition(s) the two lines AB and CD are parallel is1. <2 =<6
2. <1 = <7
3. Both (a) and (b)
4. None of the above
 | [1] |