RISE OF NATION ACADEMY

"We Create the Impeccable Creature"

Test Paper

Standard – IX (Set-A)

Subject –Mathematics

Topic – Full Course

Date – 27/01/2019   **Time – 03:00 hrs.**

Max. Marks - 80   **Min. Marks – 40**

General Instructions:

1. All questions are compulsory.
2. The question paper consists of 30 questions divided into four sections A, B, C and D.
3. Section A contains 6 questions of 1 mark each. Section B contains 6 questions of 2 marks each. Section C contains 10 questions of 3 marks each. Section D contains 8 questions of 4 marks each.
4. Use of calculators is not permitted.

Section-A

(Question numbers 1 to 6 carry 1 mark each)

Q 1. The statement "Decimal expression of a rational number can be non-terminating and non-recurring." Is it true or false?

Q 2. If the sides of a triangle are in the ration 12 : 14 : 25 and its perimeter is 255 m, then find the greatest side of the triangle.

Q 3. Does Euclid's fifth postulate imply the existence of parallel lines? Explain.

Q 4. Plot the points (2, 2) (4, -2) and (-2, -2) and check whether they are collinear or not.

Q 5. For what value of $(BC + AC)$, the construction of a ΔABC is possible, if $AB = 6\ cm$ and $\angle A = 45°$?

Q 6. The frequency distribution has been represented graphically as follows

Marks	0-20	20-40	40-60	60-100
Number of Students	10	15	20	25
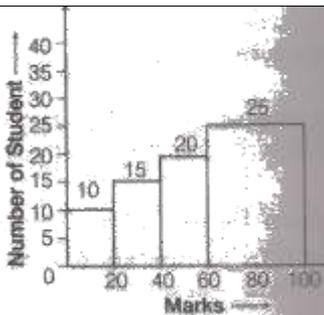
Do you think this representation is correct?

Section-B
(Question numbers 7 to 12 carry 2 marks each)

Q 7. The diameter of two right circular cones are equal. If their slant heights are in the ratio 3 : 2, then what is the ratio of their curved surface areas?

Q 8. In the given figure, $AB = CB$ and O is the centre of the circle. Prove that BO bisects $\angle ABC$.
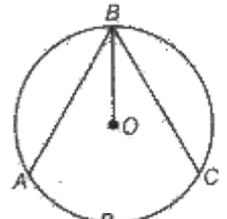
Q 9. In a cricket match, a batsman hits the boundary 5 times out of 40 balls played by him. Find the probability that the boundary is not hit by the batsman. Also, determine the probability of hitting the sixes.

Q 10. In the given figure, $\angle 1 = \angle 3$ and $\angle 2 = \angle 4$. Using Euclid's axiom, show that $\angle A = \angle C$.
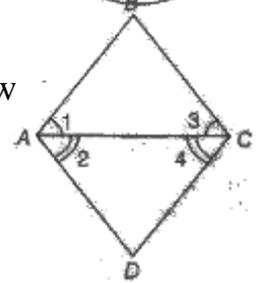
Q 11. If $(x - a)$ is a factor of $x^8 - ax^7 + x^6 - ax^5 + x^4 - ax^3 + 3x - a + 2 = 0$, then find the value of a.

Q 12. Find the volume and surface area of a sphere of radius 28 m.

Section-C
(Question numbers 13 to 22 carry 3 marks each)

Q 13. In a quadrilateral $ABCD$, there is a point O inside it such that $OB = OD$. Also, $AB = AD$ and $BC = DC$. Prove that O lies on AC.

Q 14. In the given figure, AB is a diameter of a circle with centre O and $DO \parallel CB$. If $\angle BCD = 120°$, then calculate (i) $\angle DAB$ (ii) $\angle DBA$ (iii) $\angle CBD$ Also, show that ΔAOD is an equilateral triangle.
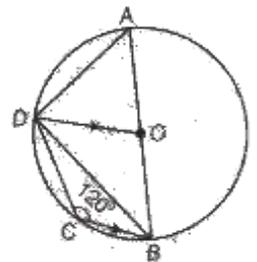
Q 15. In the given figure, $PR \perp RM$ and $\angle P : \angle Q : \angle R = 6 : 4 : 2$. Find the value of $\angle MRN$.
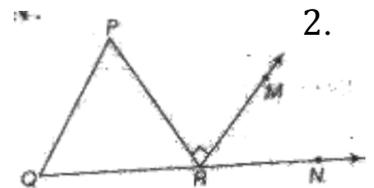
Q 16. The side AB of a parallelogram ABCD is produced to any point P. A line through A and Parallel to CP meets CB produced at Q and then parallelogram PBQR is completed. Show that
$$ar\ (parallelogram\ ABCD) = ar\ (parallelogram\ PBQR)$$

Q 17. Find three irrational number between $\frac{5}{7}$ and $\frac{9}{11}$.

CBSE Sample Papers | CBSE Guess Papers | CBSE Practice Papers | Important Questions | CBSE PSA | CBSE OTBA |
Proficiency Test | 10 Years Question Bank | **CBSE Guide** | CBSE Syllabus | Indian Tutors | **Teacher' Jobs** | CBSE eBooks | Schools
| Alumni | CBSE Results | CBSE Datesheet | **CBSE News**

Q 18. Write the coordinates of the vertices of a rectangle, whose length and breadth are 6 units and 3 units respectively, one vertex at the origin, the longer side lies in the Y-axis and one of the vertices lies in the II quadrant. Also, find the area of the rectangle.

Q 19. The mean monthly salary of 10 members of a group is 1445 Rs. One more member whose monthly salary is 1500 Rs. has joined the group. Find the mean monthly salary of 11 members of the group.

Q 20. A student wrote the equations of the lines a and b drawn in the following graph as $y = 1$ and $2x + 3y = 6$, respectively. Is he right? If yes, then write the coordinates of point of intersection of lines a and b.
Also find the area enclosed between these lines and Y-axis.
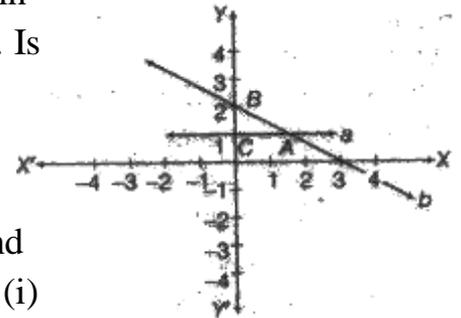
Q 21. Line l is the bisector of $\angle A$ and B is any point on l. BP and BQ are perpendiculars from B to the arms of $\angle A$. Show that (i) $\Delta APB \cong \Delta AQB$ (ii) BP = BQ or B is equidistant from the arms of $\angle A$.

Q 22. AB and CD are respectively, the smallest and the longest sides of a quadrilateral $ABCD$. Show that $\angle A > \angle C$ and $\angle B > \angle D$.
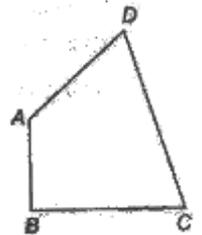
Section-D
(Question numbers 23 to 30 carry 4 marks each)

Q 23. Mukesh asked the teacher whether the two lines which are perpendicular to the same line, are perpendicular to each other or not. His teacher replied that yes, they will be perpendicular to each other giving the reason that two lines parallel to the same line are parallel to each other. His classmate Seema told him that he is wrong and explain him the correct statement . Mukesh thanked Seema for this.
  I.   Write the solution given by Seema.
  II.   Identify the value depicted from this action.

Q 24. The parking charges of a car in a parking lot is 30 Rs. for the first two hours and 10 Rs. per hour for subsequent hours. Taking total parking time to be x hour and total charges as y Rs. write a linear equation in two variable to express the above statement. Draw a graph for the linear equation and read the charges for five hours.

Q 25. The following observed values of x and y are thought to satisfy a linear equation. Write the linear equation.

----

x	6	-6
y	-2	6

Draw the graph, using the value of x and y as given in the above table. At what points, the graph of the linear equation   (i) Cuts the X-axis   (ii) cuts the Y-axis

Q 26. Find the missing frequencies in the following frequency distribution. If it is known that the mean of the distribution is 1.46.

Number of accidents (x)	0	1	2	3	4	5	Total
Frequency (f)	46	?	?	25	10	5	200

Q 27. The external and internal diameters of a hollow hemispherical vessel are 25 cm and 24 cm, respectively. The cost of painting 1 cm² of the surface is 0.05 Rs. Find the total cost to paint the vessel all over.

Q 28. A kite in the shape of a square with each diagonal 36 cm and having a tail in the shape of an isosceles triangle of base 10 cm and equal side 6 cm, is made of three different shades as shown in the figure. How much paper of each shade has been used in it? (Given : $\sqrt{11} = 3.31$).
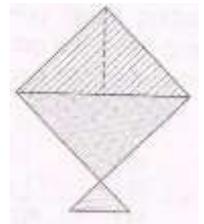
Q 29. There are two friend Swati and Sapna who live in a village. Their common friend Monika fell ill. She was admitted in a hospital. Swati and Sapna decided to help Monika. Swati contributed as much money as the fifth root of the cube of amount contributed by Sapna.

If the product of amount distributed by two friends is 390625 Rs. then find contribution of each friend.

Q 30. Factorise : $x^3 - 3x^2 - 9x - 5$.

CBSE Sample Papers | CBSE Guess Papers | CBSE Practice Papers | Important Questions | CBSE PSA | CBSE OTBA | Proficiency Test | 10 Years Question Bank | **CBSE Guide** | CBSE Syllabus | Indian Tutors | **Teacher' Jobs** CBSE eBooks | Schools | Alumni | CBSE Results | CBSE Datesheet | **CBSE News**