

KENDRIYA VIDYALAYA SANGATHAN, AGRA REGION

SAMPLE PAPER-Term-II Session Ending Exams- 2021-22

Class – IX

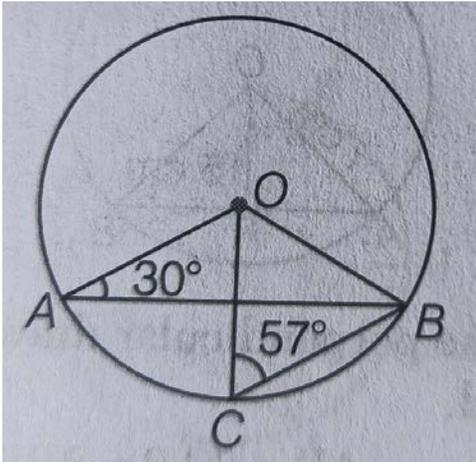
Subject- Mathematics

Time Allowed: 02 Hours

Maximum Marks: 40

General Instructions:

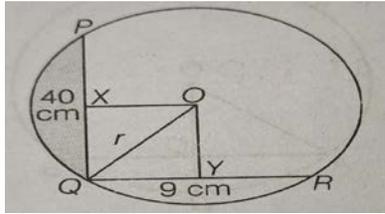
1. The question paper consists of 14 questions divided into 3 sections A, B and C.
2. All questions are compulsory.
3. Section A comprises of 6 questions of 2 marks each. Internal choice has been provided in two questions.
4. Section B comprises of 4 questions of 3 marks each. Internal choice has been provided in one question.
5. Section C comprises of 4 questions of 4 marks each. An internal choice has been provided in one question. It contains two case study based questions.

SECTION-A		
Q. NO		MARKS
1	Find the value of the polynomial $x^2-9$ for $x=97$ . <b>OR</b> Factorize $27x^3+125y^3$ .	2
2	Three angles of a quadrilateral are respectively equal to $110^\circ$ , $60^\circ$ and $80^\circ$ . Find it's fourth angle.	2
3	In the given figure $\angle OAB= 30^\circ$ and $\angle OCB= 57^\circ$ find $\angle BOC$ and $\angle AOC$ . 	2
4	In a hot water heating system, there is a cylindrical pipe of length 28m and diameter 5cm. Find the total radiating surface in the system.	2

5	<p>In 50 throws of a die, the outcomes were noted as under</p> <table border="1" data-bbox="256 138 1289 260"> <tr> <td>Outcomes :</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td>No. of times :</td> <td>8</td> <td>9</td> <td>6</td> <td>7</td> <td>12</td> <td>8</td> </tr> </table> <p>what is the probability of getting</p> <p>(a) Even number</p> <p>(b) Odd number</p> <p style="text-align: center;"><b>OR</b></p> <p>Out of the past 250 consecutive days, it's weather forecast were correct 175 times.</p> <p>(a) What is the probability that on a given day it was correct</p> <p>(b) What is the probability that it was not correct on the given day</p>	Outcomes :	1	2	3	4	5	6	No. of times :	8	9	6	7	12	8	2
Outcomes :	1	2	3	4	5	6										
No. of times :	8	9	6	7	12	8										
6	<p>Cards with number 1, 2, 3...100 are placed in a box and mixed thoroughly. One card is drawn what is the probability that the card drawn is</p> <p>(a) multiple of 5</p> <p>(b) Prime number less than 30</p>	2														
<b>SECTION-B</b>																
7	If $x+1/x=7$ , Then find the value of $x^3+1/x^3$	3														
8	What are the possible expressions for the dimensions of the cuboid whose volume are given as $\text{Volume}=12ky^2+8ky-20k$	3														
9	Construct a Triangle ABC, in which $BC=7\text{cm}$ , $AB+AC=13\text{cm}$ and angle $B=60^\circ$	3														
10	<p>A conical tent is 10m high and the radius of it's base is 24m. Find</p> <p>(a) Slant height</p> <p>(b) Curved surface area of the tent</p> <p>(c) Cost of the canvas required to make the tent, if the cost of <math>1\text{m}^2</math> canvas is Rs. 70</p> <p style="text-align: center;"><b>OR</b></p> <p>Find the volume of the sphere, whose surface area is <math>154\text{cm}^2</math>.</p>	3														
<b>SECTION-C</b>																
11	Find $y^2+1/y^2$ and $y^4+1/y^4$ if $y - 1/y =9$ .	4														
12	<p>ABCD is a parallelogram and a line segment AX, CY bisect the angle A and angle C respectively show that <math>AX\parallel CY</math>.</p> <p style="text-align: center;"><b>OR</b></p> <p>Given triangle ABC, lines are drawn through A, B and C parallel respectively to the sides BC, CA and AB forming triangle PQR, show that</p> <p style="text-align: center;"><math>BC= \frac{1}{2} QR</math>.</p>	4														

CASE STUDY

13 Mr. Satish told students draw two lines PQ and QR. So that  $PQ=40\text{cm}$  and  $QR=9\text{cm}$ . He told all students to make this shape in their note book and draw a circle passing through the three points P, Q and R. Mukul drew PQ and QR as per fig.



He draw a perpendicular bisector OX and OY of the line PQ and QR.

OX and OY intersect at O.

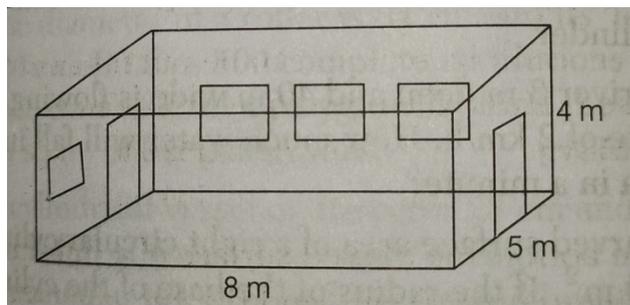
Now, taking O as a centre and OQ as radius, he draw the circle which passes through P, Q and R.

He noticed that P, O and R are collinear.

- (a) Find the measure of radius and diameter of the circle.
- (b) Find the measure of  $\angle PQR$  and what will you call the shaded region.

4

14 A draughtsman planned design for a room with dimensions of 8m, 5m and 4m respectively. He also planned to make 4 windows with brown colour and 2 doors with grey colour. The room needs to be painted with Nerolac paint of red colour except for the floor and square tiles were used for flooring, as shown in figure.



- (a) Find the total area of the four walls and also find the area of the wall to be painted excluding the area of windows and door which is  $30\text{ m}^2$ .
- (b) What is the volume of the air in the room?

1+1

2

\*\*\*\*\*END OF PAPER \*\*\*\*\*