KENDRIYA VIDYALAYA SANGATHAN
KOLKATA REGION
SESSION ENDING EXAM 2022 (TERM-2)
SAMPLE PAPER
CLASS –IX SUBJECT- MATHEMATICS
TOTAL MARKS-40 TIME-90 MINUTES

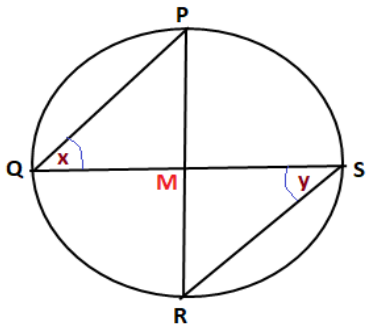
General Instructions:

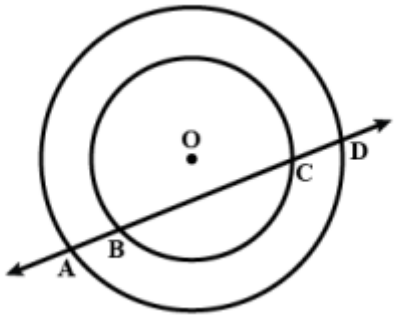
1.The question paper consists of 14 questions divided into 3 sections A, B& C.

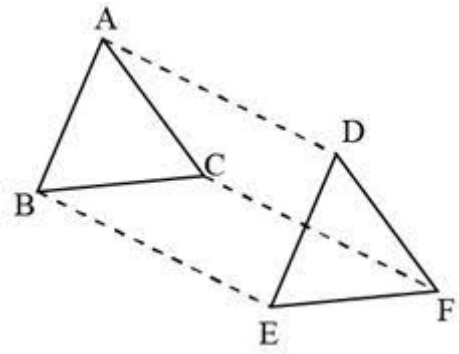
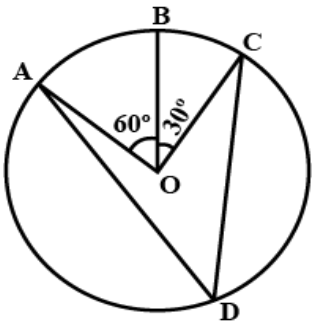
2. Section A comprises of 6 questions of 2 marks each. Internal choice has been provided in two questions.

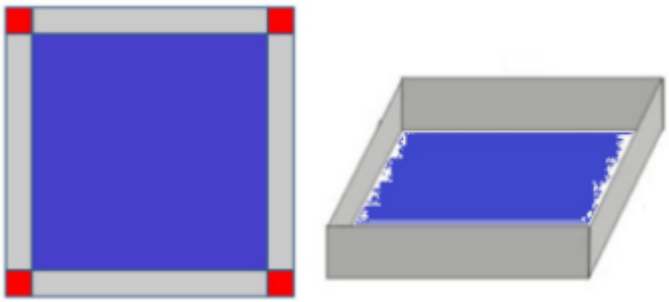
3. Section B comprises of 4questions of 3 marks each. Internal choice has been provided in one question.

4. 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

Question No.	Section -A	Marks allocated
1	Check whether -2 and 2 are zeroes of the polynomial p(x)= x+2 OR Find the value of p(x) = 5x- $4x^2$ +3 at x= -1	2
2	In the given fig. find the value of ∠x+∠y 	2
3	If a line intersects two concentric circles (circles with the same centre) with centre O at A, B, C and D, prove that AB = CD (see the below figure).	2

		
4	The curved surface area of a right circular cylinder of height 14 cm is 88 cm^2. Find the diameter of the base of the cylinder. OR. **OR** Determine the total surface area of a cube if the volume of cube is 1000 cm^3.	2
5	The record of a weather station shows that out of the past 250consecutive days, its weather forecasts were correct 175 times. What is the probability that on a given day it was correct?	2
6	A coin is tossed 1000 times with the following frequencies: Head: 455, Tail: 545. Compute the probability for each event.	2
	Section -B	
7	if x+y=12 and xy= 27, find the value of x^3+y^3 OR Factorize the given expression: $9x^2 + 49y^2 + 25z^2 - 42xy - 30xz + 70yz$	3
8	Evaluate 105x108 without multiplying directly. OR Evaluate $(998)^3$ using suitable identities.	3
9	Construct a ΔABC with BC = 8 cm, $\angle B = 45°$ and AB – AC = 3.1 cm	3
10	Find the capacity in litres of a conical vessel having height 8 cm and slant height 10 cm. Use $\pi = 3.14$	3
	Section - C	
11	In Δ ABC and Δ DEF, AB = DE, AB || DE, BC = EF and BC || EF. Vertices A, B and C are joined to vertices D, E and F respectively (see Fig). Show that	4

	 i) quadrilateral ABED is a parallelogram (ii) quadrilateral BEFC is a parallelogram (iii) AD || CF and AD = CF (iv) quadrilateral ACFD is a parallelogram	
12	In figure A,B and C are three points on a circle with centre 0 such that ∠BOC = 30° and ∠ AOB = 60°. If D is a point on the circle other than the arc ABC, find ∠ ADC.:  OR Prove that Equal chords of a circle subtend equal angles at the Centre	4
	Case study based questions	
13	Once four friends Rahul, Arun, Ajay and Vijay went for a picnic at a hill station. Due to peak season, they did not get a proper hotel in the city. The weather was fine, so they decided to make a conical tent at a park. They were carrying 300m^2 cloth with them. As shown in the figure they made the tent with height 10 m and diameter 14 m. The remaining cloth was used for the floor.	4

	 (A) How much cloth was used for the floor? (i) 31.6 m^2 (ii) 36 m^2 (iii) 40 m^2 (iv) 30 m^2 (B) What was the volume of the tent? (i) 300 m^3 (ii) 160 m^3 (iii) 513.3m3 (iv) 500 m^3 (C) What was the area of floor? (i) 50 m^2 (ii) 100 m^2 (iii) 150 m^2 (iv) 154 m^2 (D) What was the curved surface of the tent? (i) 250 m^2 (ii) 268.4 m^2 (iii) 200 m^2 (iv) 261.4 m^2	
14	Rekha wants to make a pencil box using a cardboard. When searching she got a cardboard with sides 12inch by 12 inch. She cuts out four squares of equal size at corners and folding up the sides to make an open box. She paints it beautifully and puts all her pencils in that.  A) Suppose the side of the square cut-out is x inch. Give the polynomial to find the volume of the cuboid formed. And identify the degree of the polynomial. B) If the side of the square is 1 inch then what is the volume of the box?	4

	C) Can she make a box if the size of the square cut off is 6 inch? Why? D) She closed the box and cover it with a cloth, find the area covered by the cloth if the side of the square is 2 inches.	