89BVHJC

SUMMATIVE ASSESSMENT – II
MATHEMATICS
Class – IX

**Time allowed : 3hours**   **Maximum Marks : 90**

General Instructions :

(i)   All questions are **compulsory**.
(ii)   The question paper consists of **31** questions divided into five **sections A, B, C**, D and **E**. **Section-A** comprises of **4** questions of **1 mark** each, **Section-B** comprises of **6** questions of **2 marks** each, **Section-C** comprises of **8** questions of **3 marks** each and **Section-D** comprises of **10** questions of **4 marks** each. **Section E comprises of two questions of 3 marks each and 1 question of 4 marks from Open Text theme.**
(iii)   There is no overall choice.
(iv)   Use of calculator is not permitted.

SECTION-A	

Question numbers **1** to **4** carry **one** mark each.

1	Find whether line represented by $y = 3$ passes through origin or not.	1
2	How many graphs of linear equations in two variables can pass through point (0, 0) ?	1
3	In ∆ABC, D and E are the mid-points of sides AB and AC respectively as shown in the figure. Find the length of DE.	1
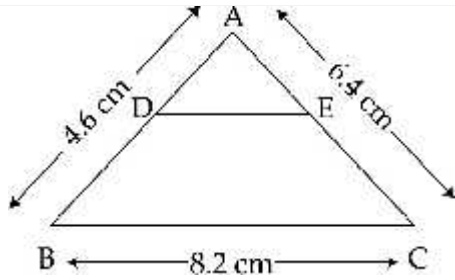
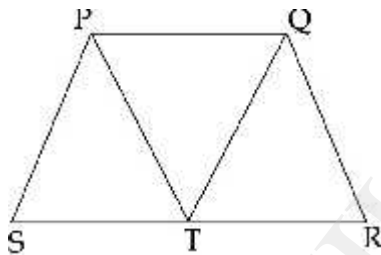| 4 | If surface area of a sphere is 616 cm², find its radius. | 1 |

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SECTION-B

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Question numbers **5** to **10** carry **two** marks each.

| 5 | PQTS and PTRQ are two parallelograms.

Show that ar (ΔPST) 5 ar (ΔPQT) 5 ar (ΔQTR) $5\frac{1}{3}$ ar (PQRS)

 | 2 |

| 6 | Using protractor, draw an angle of 528. Using compass, divide this angle into two equal parts. | 2 |

| 7 | If the angles of a quadrilateral EFGH, taken in order, are in the ratio of 7 : 3 : 4 : 6, which type of quadrilateral is EFGH and why ? | 2 |

| 8 | Two cubes each of 5 cm edge are joined end to end. Find the surface area of the resulting | 2 |

cuboid.

| 9 | 1500 families were surveyed and following data was recorded about their maids at homes : | 2 |

Types of maids	Only part - time	Only full - time	Part time and full time	None
Nos. of maids	860	370	250	20

A family is selected at random. Find the probability that the family selected has :

(a)   both types of maids

(b)   has part – time maid

| 10 | If probability of failure of an event is 32%. What is the probability of success of this event? | 2 |

SECTION-C

Question numbers **11** to **18** carry **three** marks each.

| 11 | A computer typist charges ` 10 for the first page and ` 5 per page for the remaining pages. If the total pages to be typed are x and the total cost to type these pages is ` y write a linear equation for this information and draw its graph. | 3 |

| 12 | Write the equation $4x56$ $(12y)13x$ in the form $ax1by5c$ and also find the coordinates of the points where its graph cuts the two axes ? | 3 |

| 13 | In ΔPQR ; X, Y and Z are respectively the mid-points of sides PQ, QR and PR. If are (ΔXPZ) 512 cm^2, find are (ΔZYR). | 3 |
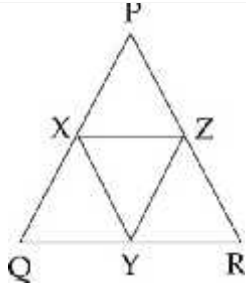
14	In the given figure, ABCD is a square. A line segment AE intersects the diagonal BD at O such that $\angle AOB 5608$. Find the measure of angle x.	3
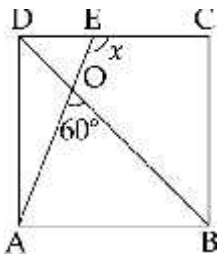
15	Construct any obtuse angle. Divide it into four equal parts, using ruler and Compass.	3

| 16	In a parallelogram PQRS show in the figure below, the bisector of $\angle Q$ also bisects side SR at X. Prove that PQ52PS.	3
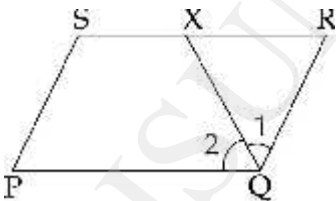
17	Construct an equilateral triangle whose altitude measures 5.5 cm.	3

18	If the total surface area of solid sphere is 98.56 cm^2, then find the radius of the sphere.	3

SECTION-D

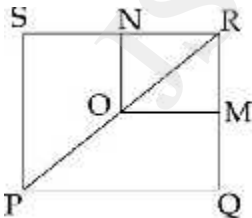Question numbers **19** to **28** carry **four** marks each.

19 Cost of 5 kg apples and 2 kg oranges is ` 330.   Let cost of 1 kg apple be `x and that of 1 kg oranges be ` y. Write the given data in form of a linear equation in two variables. Also, represent it graphically.   4
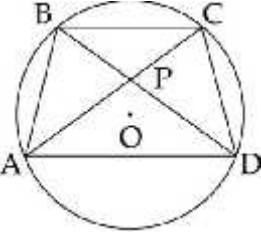
20 Write the equations of the lines drawn in the following graph :   4
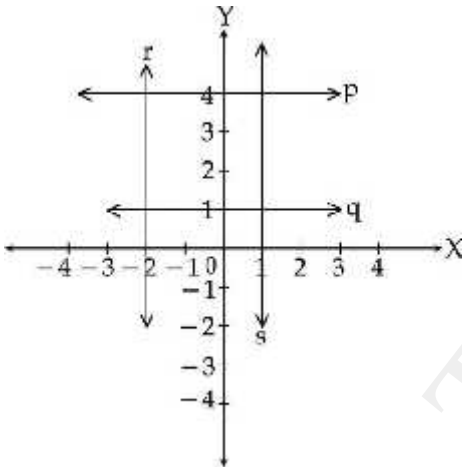
Also, find the area enclosed between them.

21 PQRS is a square. N and M are mid-points of sides SR and QR respectively. O is a point on   4
diagonal PR such that OP5OR.   Show that ONRM is a square. Also find the ratio of
ar(ΔORM)and ar(PQRS).

22	In the figure ABCD is a cyclic quadrilateral whose diagonals AC and BD intersect at P. If O is the centre of the circle and AB5DC, prove that :	4
	(i) $\Delta PAB \cong \Delta PDC$	
	(ii) PA5PD and PC5PB	
	(iii) AD??BC	
23	Construct a Δ ABC in which BC57 cm, $\angle$B5 608 and AC2AB52.4 cm.	4
24	P, Q, R and S are the mid2points of the sides AB, BC, CD and DA respectively of a quadrilateral ABCD in which AC5BD. Prove that PQRS is a rhombus.	4
25	A conical heap is formed when a farmer pours food grains on a ground. The slant height of heap is 35 cm. The circumference of the base is 132 cm. What amount of tarpaulin is needed to cover the grains ? Farmer goes to the orphanage and gives half of the food grains for the children living there. How much grains farmer denoted? List values you learn from this act of the farmer.	4
26	A conical tent is made of 4.5 m wide tarpaulin. Vertical height of the conical tent is 4 m and base radius is 3 m. Find the length of the tarpaulin used, assuming that 10% extra material is required for stitching margins and wastage in cutting (Take π 5 3.14)	4
27	Radha has a piece of canvas whose area is 550 m^2. She uses it to make a conical tent with a base diameter of 14 m. Find the volume of the tent that can be made with it.	4
28	Shirts are packed in Seven hundred boxes were examined for defective shirts and the results are given in the following table:	4

(i)   no defective shirt
(ii)   defective shirts are between 2 to 6
(iii)   defective shirts are less than 3
(iv)   defective shirts are more than 5
One carton was selected at random. What is the probability that it has :

Number of defective shirts	0	1	2	3	4	5	6	Above 6
Frequency	400	180	48	41	18	8	3	2

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