

SUMMATIVE ASSESSMENT -II (2016-17)

CLASS-IX

Time: 3hrs.

SUBJECT : Mathematics

SMS0808

M.M: 90

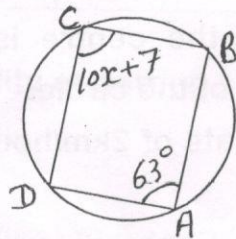
General Instructions:

1. All questions are compulsory
2. The question paper consists of 31 questions divided into four sections A, B, C and D.  
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  
(OTBA) section-E comprises of 2 question of 3 marks each and one ques. of 4 marks.
3. There is no overall choice in this questions paper.
4. Use of calculator is not permitted.

Section – A

Question numbers 1 to 4 carry one mark each.

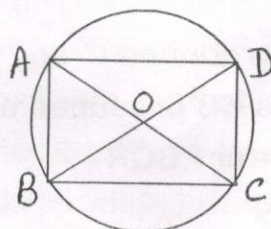
1. If  $x=0$  and  $y=k$  is a solution of the equation  $7x-5y=0$ , then find the value of  $k$ .
2. Find the coordinates where the equation  $3x+7y=12$  intersects the  $x$ -axis.
3. Calculate the volume of a right circular cylinder with base radius 14cm and height 14cm.
4. A circle passes through A, B, C and D as shown in the figure. If  $\angle BAD = 63^\circ$ , find  $x$



Section – B

Question numbers 5 to 10 carry two marks each.

5. In  $\triangle PQR$ , base  $QR$  is divided at  $x$  such that  $QX = \frac{1}{2}XR$ . Prove that ar  $\triangle PQX = \frac{1}{3}$  ar  $\triangle PQR$ .
6. In fig  $AC$  and  $BD$  are 2 diameters of a circle prove that  $ABCD$  is a rectangle.



7. If the arithmetic mean of 4, 8, 9, 11,  $P$  and 15 is 9, find the value of  $p$ .

8. A dice is rolled 250 times and its outcomes are recorded as below

Outcomes	1	2	3	4	5	6
Frequency	40	45	35	38	52	40

Find the probability of getting:

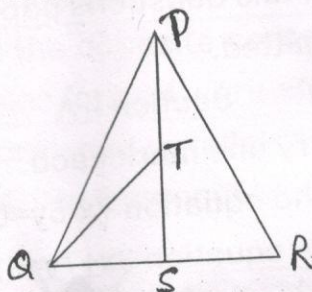
- (a) an odd number
  - (b) a multiple of 5.
9. The probability of guessing the correct answer to a certain question is  $\frac{x}{2}$ . If the probability of not guessing the correct answer is  $\frac{2}{3}$ , then find x.
10. Using protector, draw an angle of  $52^\circ$  and then divide it into 2 equal parts using compass.

### Section - C

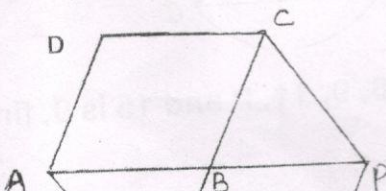
Question numbers 11 to 20 carry three marks each.

11. In  $\Delta PQR$  point T is the mid point of its median PS as shown in fig.,

Show that ar  $\Delta PQT = \frac{1}{4}$  ar  $\Delta PQR$



12. The diameter of roller 1.5m long is 84 cm. If it takes 100 revolutions to level a playground, find the cost of levelling this ground at the rate of 50 paise per square metre.
13. Prove that the angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.
14. A river 3m deep and 40 m wide is flowing at the rate of 2km/hour. How much water will fall into the sea in 2 minutes?
15. Along a path, 100 conical pillar are constructed. Each pillar has base radius 7cm and height 24cm. Find the cost of painting these pillars at the rate of ₹120 per  $\text{cm}^2$ .
16. Find three different solutions for the equation  $3x - 8y = 27$ .
17. Draw the graph of the equation  $2x + 5y = 13$ . Find the points where the line meets two axis.
18. 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 ABCD = ar PBQR



**Section - D**

19. Solve for x:

$$\frac{3x-1}{5} - \frac{1+x}{2} = 3 - \frac{x-1}{4}$$

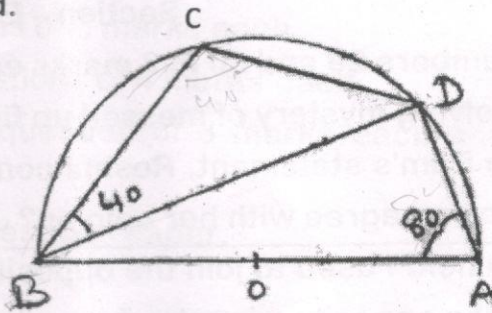
20. Give the geometrical representation of equation  $5x+15 = 0$

- (i) in one variable
- (ii) in two variables.

21. If the non parallel sides of a trapezium are equal, prove that it is cyclic.

22. In figure C and D are points on the semi-circle described on BA as diameter. given  $\angle BAD = 80^\circ$  and  $\angle DBC = 40^\circ$  find.

- (i)  $\angle ABD$
- (ii)  $\angle BDC$



23. Two dice are thrown simultaneously 500 times. Each time the sum of two numbers appearing on their tops is noted and recorded as given in the following table:

Sum of numbers	2	3	4	5	6	7	8	9	10	11	12	Total
Frequency	14	30	42	55	72	75	70	53	46	28	15	500

Find the probability of getting sum:

- (a) 3
  - (b) more than 10
  - (c) less than or equal to 5
  - (d) between 8 and 12.
24. Construct a triangle with base of length 5cm. The sum of the other two sides is 7cm and base angle is of  $60^\circ$ .
25. In a group of 3 girls, one girl forgot to bring her lunch, so other two girls decided to share their lunch with her lunch box. 1<sup>st</sup> girl's lunch box is in the shape of a cuboidal box measures 6cmx8cmx15cm and of 2<sup>nd</sup> girl's lunch box is cylindrical shaped having radius 7cm and height 15cm. Which box has more surface area and which box has more volume? Which value is depicted by girls?
26. The mean of the following frequency distribution is 21. Find the value of P.

x	10	15	20	25	35
f	3	10	p	7	5

27. Draw a histogram for the following data: ::4::

Marks	0-20	20-40	40-60	60-80	80-100	Total
No. of students	10	15	40	45	40	150

Also draw the frequency polygon on same graph.

28. The volume of the space inside a right circular conical tent is  $\frac{968}{7} \text{ m}^3$  and its vertical height is 4m. Find the area of canvas required to make the tent and also the cost of the canvas at the rate of ₹120 per  $\text{m}^2$ . (Take  $\sqrt{33} = 5.47$ ).

**Section – E (OTBA)**

Question numbers 29 and 30 of 3 marks each and question number 31 of 4 marks.

Theme:1: Solving mystery of messed up fields.

29. Listening to Ram's statement, Roshni concluded that his farm might be a rectangle in shape. Do you agree with her opinion? Justify.

Ram:- In my field I used to join the opposite corners with ropes of equal lengths and the area of the opposite triangles formed were equal.

30. Write any 4 properties of a square and parallelogram.

31. Listening to Yousuf's statement, Roshni concluded that his farm might be a square in shape. Do you agree? Justify.

Yousuf:- In my field all sides were equal and each angle measured  $90^\circ$ .

Give 2 formula to for finding the area of this field.