59

SUMMATIVE ASSESSMENT - II - 2016 - 2017

MATHEMATICS - Paper - II

(English Version)

PART - A & B

Class : X (Max. Marks : 40) Time : 2-45 Hrs.

Marks : 30 PART - A

Instructions :

1) **In the time duration of 2 hrs 45 min. 15 minutes is exclusively allotted to read and understand the question paper.**
2) **The question paper comprises of Three Sections I, II, III.**
3) **All questions are compulsory.**
4) **There is no overall choice. However there is internal choice to the questions under Section - III.**

SECTION - I

Note : 1) Answer all the questions.
2) Each question carries 1 mark. **4 x 1 = 4**

1. Find the distance between the points (2, 5) and (6, 1).
2. Write the A.A. law of similarity.
3. $\overline{PQ}$ is a secant of the circle with centre 'O'. Represent the information using a diagram.
4. Is it right to say that Cos (A+B) = CosA + CosB? Justify your answer.

SECTION - II

Note : 1) Answer all the questions.
2) Each question carries 2 marks. **5 x 2 = 10**

5. Two concentric circles radii 5 cm and 3 cm are drawn. Find the length of the chord of the larger circle which touches the smaller circle.

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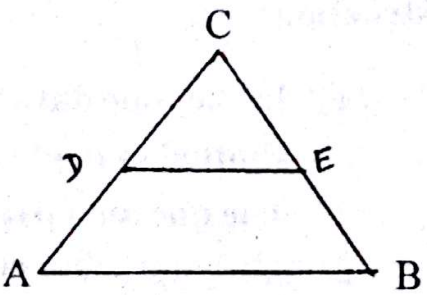
6. If $\cos A = \frac{12}{13}$ then find Cosec A and Cot A.

7. Write the formula for calculating 'Median' for a grouped frequency distribution and explain each letter in it.

8. ΔABC, ΔDEF are similar right angled triangles. If in ΔABC $\sin\theta = \frac{3}{5}$ and in ΔDEF $\tan\theta = \frac{9}{12}$ then find the ratio of the areas of ΔABC and ΔDEF.

9. What value(s) of x will make DE||AB, in the given figure?



$AD = 8x + 9$, $CD = x + 3$

$BE = 3x + 4$ $CE = x$

SECTION - III

Note : 1) Answer all the questions.

2) Answer any one from Internal choice of each questions.

3) Each question carries 4 marks. **4 x 4 = 16**

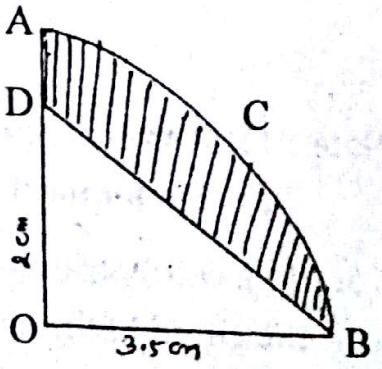
10. a) If (1, 2), (4, y), (x, 6) and (3, 5) are the vertices of a parallelogram taken in order, find x and y.

(OR)

b) Find the mode of the following data.

Class	30-39	40-49	50-59	60-69	70-79	80-89	90-99
Frequency	2	3	20	31	17	10	4

11. a) In the adjacent figure, OACB is a quadrant of a circle with centre 'O' and radius 3.5 cm. If OD = 2 cm. Find the area of the shaded region. (Take $\pi = \frac{22}{7}$)



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(OR)

b) Evaluate the following

i) $\dfrac{\sin 30^0 + \tan 45^0 - \operatorname{cosec} 60^0}{\cot 45^0 + \cos 60^0 - \sec 30^0}$

ii) $2\tan^2 45^0 + \cos^2 30^0 - \sin^2 30^0$

12. a) If A (0, 1), B (2, 1), C (0, 3) are the vertices of ΔABC and D, E, F are the mid points of BC, CA and AB respectively then prove that the area of ΔABC is four times the area of ΔDEF.

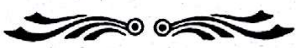
(OR)

b) Prove that the lengths of tangents drawn from an external point to a circle are equal.

13. a) Draw a line segment of length 9.2 cm and divide it in the ratio 5:3.

(OR)

b) Draw a pair of tangents to a circle of radius 5 cm which are inclined to each other at an angle 60^0.



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Regd. No. : [ ] **59-A** Marks : [ ]

SUMMATIVE ASSESSMENT - II - 2016 - 2017

MATHEMATICS - Paper - II

(English Version)

PART - B

Class : X **(Marks : 10)**

Academic Standards	A.S. - 1						A.S. - 2			A.S. - 3			A.S. - 4			A.S. - 5			Total	Grade
Question No.	1	5	6	10	11	14 to 19	4	12	20 to 25	2	7	26 27	8	9	28 to 31	3	13	32 33		
Marks																				
Total																				

Name of the Student .... Roll No. ....

Instructions :

1) Each question carries equal marks.
2) Each question has 4 options. Write the capital letters indicating the answer in the given bracket.
3) Marks will not be awarded for over writing answers.

SECTION - IV

Note : 1) Answer all the questions.

2) Each question carries ½ mark. **20 x ½ = 10**

14. A ladder of length 25 m leaving against a wall keeping its foot 15 m away from the bottom of the wall. At what height the ladder touches the wall? ( )

A) 10 m B) 15 m

C) 20 m D) 25 m

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15. The median of the following data is
20, 3, 7, 13, 3, 4, 6, 7, 19, 15, 8, 18 ( )
A) 7 B) 7.5 C) 8 D) 3.5

16. The value of $\sin^2 9^0 + \sin^2 81^0$ ( )
A) 1 B) 2 C) 0 D) $\frac{1}{2}$

17. The area of the triangle formed by (0, 8), (6, 0) and (0, 0) ( )
A) 24 B) 48 C) 12 D) 96

18. If $\tan 2A = \cot 3A$ then the value of A is ( )
A) 36^0 B) 24 C) 18 D) 9^0

19. The length of tangent drawn from a point 15 cm away from the centre of a circle of radius 9 cm ( )
A) 24 B) 6 C) $\sqrt{306}$ D) 12

20. The maximum value of $\sin A + \cos A (0 \le A \le 90^\circ)$ ( )
A) 1 B) 2 C) $\sqrt{2}$ D) 0

21. Which of the following can be measurements of a right angled triangle ( )
A) 3, 5, 9 B) 9, 11, 17
C) 13, 17, 21 D) 9, 12, 15

22. Which of the following measure of central tendency is more appropriate to represent the data when there is no importance to extreme values ( )
A) Mode B) Median C) A.M. D) All the above

23. Which of the following is not the value of sec A ( )
A) $\frac{5}{3}$ B) $\frac{7}{4}$ C) $\frac{5}{6}$ D) 2

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24. Line passing through which of the following points is parallel to Y-axis ( )

A) (2, 1) (2,6) B) (2, 5) (1, 3)

C) (0, 4) (4, 0) D) (3, 2) (–8, 2)

25. If tangents PA and PB from a point P to a circle with centre 'O' are inclined to each other at angle of 80°. Then the value of ∠POA ( )

A) 50° B) 60° C) 70° D) 80°

26. Which of the are always similar ( )

i) All squares ii) All equilateral triangles

iii) All isosceles triangles iv) All rectangles

A) (i) only B) (i), (ii) and (iii) only

C) (i) and (ii) only D) All the above

27. Area of the triangle formed by the vertices $(x_1, y_1), (x_2, y_2)$ and (x_3, y_3) ( )

A) $\frac{1}{2}(x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2))$

B) $\frac{1}{2}|x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)|$

C) $\frac{1}{2}|x_1(y_1 - y_2) + x_2(y_2 - y_3) + x_3(y_3 - y_1)|$

D) $\frac{1}{2}|x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_2 - y_1)|$

28. If sum of the (n–3) observations is $n^2 - 5n + 6$ then the Mean of the observations is ( )

A) n – 2 B) n + 2 C) n + 3 D) n – 6

29. In ΔXYZ $\angle Y = 90°$, if YZ = a, ZX = 2a then ∠YXZ ( )

A) 30^0 B) 45^0 C) 60^0 D) 90^0

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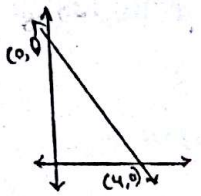
30. If the length of a minutes hand of a clock is 14 cm then the area of the region formed by the hand in 15 minutes [in $(cm)^2$] ( )

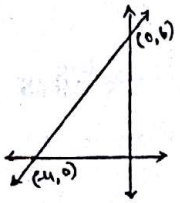
A) 308 B) 77 C) 38.5 D) 154

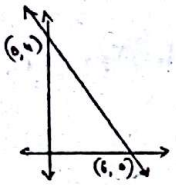
31. If the distance between the points $(\sec\theta + \tan\theta, 0)$, $(0, \sec\theta - \tan\theta)$ is $\sqrt{2}$ then the value of $\sec^2\theta + \tan^2\theta$ ( )

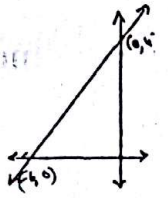
A) $\sqrt{2}$ B) $\frac{1}{\sqrt{2}}$ C) $\frac{1}{2}$ D) 1

32. Which of the following represents the line with slope $\frac{3}{2}$ ( )

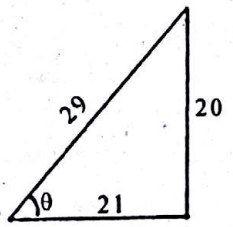
A) 

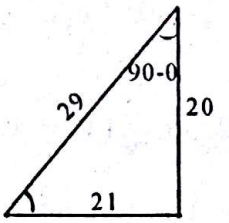
B) 

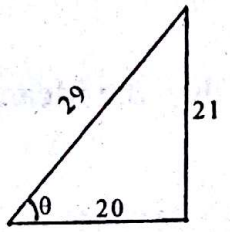
C) 

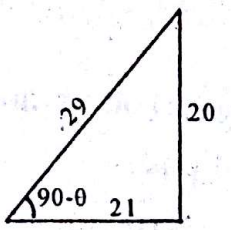
D) 

33. Which of the following figure represents $\operatorname{cosec}\theta = \frac{29}{20}$ ( )

i) 

ii) 

iii) 

iv) 

A) i) మరియు iii) B) i), ii) మరియు iv)

C) i), iii) మరియు iv) D) i) మరియు ii)

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