9TH STANDARD SECOND SUMMATIVE ASSESSMENT EXAM [SA-2] MARCH–2020

Duration: 3.15 Hours   **MATHEMATICS**   **Max.marks : 80**
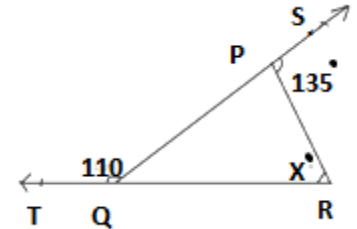

I   <u>Answer the following by choosing suitable answer :</u>   **8 x 1 = 1**

1. **Let a > 0 be real number and p and q be rational number . Then $(a^p)^q$ is**

   (A) a^{pq} (B) $a^p + a^q$ (C) a^{p-q} (D) a^{p+q}

2. **Write the degree of the polynomial : $4 x^3 + x^2 + 7x +13$**

   (A)   1   (B) 2   (C) 3   (D)   0

3. **In figure sides QP and RQ of ΔPQR are produced to points S and T respectively. If $\angle SPR = 135°$ and $\angle PQT = 110°$, find ∠PRQ**

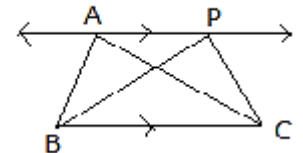   (A)   45°   (B) 65°   (C) 135   (D) 110°

4. **In the following figure CD‖ AB , 'O' is the mid point of AD then following which**

   is correct answer.   (A) $\angle DCO = \angle OAB$ (B) $\angle COD = \angle OBA$

                       (C) $\angle CDO = \angle OAB$ (D) $\angle CDO = \angle OBA$
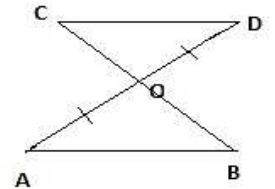
5. **Heron's formula to find the area of the triangle is**

   (A) Area of Δ= $\sqrt{s(s-a)(s-b)(s-c)}$ (B) Area ofΔ= $\sqrt{s(s-a)+(s-b)+(s-c)}$

   (C) Area of Δ = $\sqrt{s(s+a)(s+b)(s+c)}$ (D) Area ofΔ = $\sqrt{s(s+a)+(s+b)+(s+c)}$

6. **In the figure ,BC ‖AP . then Areas of theΔABC and ΔPBC are**

   (A) Area ofΔ ABC =Area ofΔ PBC   (B) Area ofΔ ABC $= \frac{1}{2}$Area of Δ PBC

   (C) Area ofΔ ABC= $2\,Area\,of\,$ΔPBC   (D) Area ofΔ ABC ≠Area ofΔ PBC

7. **Formula to find the total surface area of the cylinder is**

   (A) $\pi r (r + h)$ (B) $2 \pi r (r + h)$ (C) $2 \pi r (r + l)$ (D) $\pi r (r + l)$

8. **One day month of June Raju tells today rain coming probability is 0.65 but Anjali told the probability of rain not coming is 35.   According to probability.**

   (B)   Raju's answer may be correct   (B) Anjali's answer may be correct.

   (C)   Both are giving may be correct   (D) Both are not giving correct value
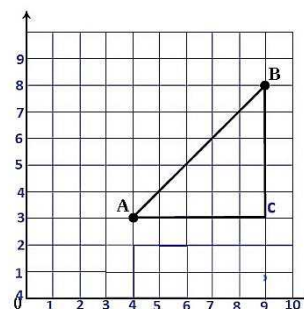
II   **Answer the following questions**:   **8 x 1 = 8**

9. **Find the two rational numbers between   2 and 3 .**
10. **"There are an infinite number of lines which pass through two distinct points" true or false?**
11. **Biggest chord of circle is called?**

12. **In the figure PO=OR & SO=OQ ;** $\llcorner PSR = \llcorner QRS = 90^0$
    Name the Congruent triangles?
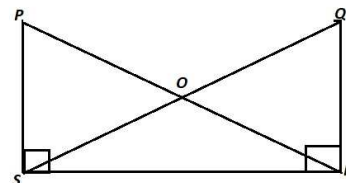
13. **In the adjoining graph write the co-ordinate points of A,B & C?**

14. **Find the curved surface area of cylinder whose perimeter of base is 88cm and   height of cylinder is 10cm.**
15. **A coin is tossed   find the probability of getting one head.?**

16. **In a class of 9th standard out of 50 students ;   23 students interest in   drawing what is the probability of not interesting student's in Drawing?**

III   **Answer the following questions:**   **8x2=16**
17. **Locate $\sqrt{2}$ on number line.**

18. **Rationalise   the denominator of** $\dfrac{1}{\sqrt{2}+3}$

19. **If a point C lies between two points A   and B such that AC= BC, then prove that   AC=$\dfrac{1}{2}$AB. Explain by drawing the figure.**

<div align="center">OR</div>

    A _____ B _____
                                   C   D
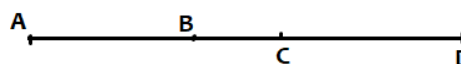
    If AC=BD, then prove that   AB=CD

20. **Construct the angle of   30^0 at the initial point   of a given ray without using protractor ?**

21. **A plastic box   2 m long, 3 m wide and 5 m deep is to be made. It is opened at the top. Ignoring the thickness of the plastic sheet, determine: The area of the sheet required for making the box.?**

22. **In a School 500 students economically income group is as follows :**

students	150	175	100	75
income	below 1 lack	above 1 lack to 2 lack	above 2 lack to 3lack	more than 3 lack

Find the probability of students belongs to above 2 lack to 3 lack?

<div align="center">OR</div>

To know the opinion of the student about the subject statistics, a survey of 300 students was conducted. The data is recorded in the following table. Find Probability that a student chosen does not like it.

Opinion	Number of students
Like	210
dislike	90

23. **In which quadrant or on which axis do each of the points (-2 ,4), (4,-5), (-2,-2), (6,0), (0 , -3) and (-2 ,-3) lie?.**

24. **The temperature recorded in Mysore city one of the week in January 2019 as.**
    20,19,21,22,18,19,21 find the mean temperature in week .?
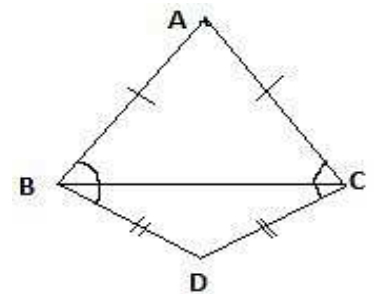
IV **Answer the following questions:**   9x3=27

25. **In ABCD is a parallelogram and AP and CQ are perpendiculars from vertices A and C on diagonal BD show that i) $\triangle$ APB $\cong$ $\triangle$ CQD ii) AP =CQ.**
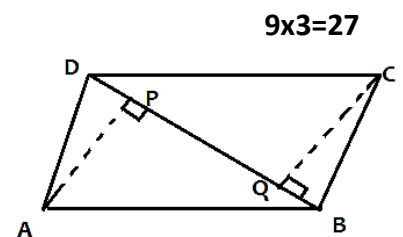
26. **Prove that " The sum of the angles of a triangle is 180^0 ".**

27. **ABC and DBC are two isosceles triangles on the same base BC as shown in figure .**
    Show that $\angle$ABD = $\angle$ACD .

28. **Divide the polynomial $3x^4 - 4x^3 -3x -4$ by x-1 and also verify with remainder theorem.**

29. **a) Determine whether g(x) is a factor of P(x) in this case.**
     $P(x)= 2x^3 +x^2 -2x-1, g(x)= x+1$

    b) find the value of 'k' if x-1 is a factor of $p(x)= x^2 + x+ k$.

30. **The following table gives the Height of the 9ᵗʰ standard student in a school data.**

Height in cm	Number of Students
145-150	2
150-155	3
155-160	9
160-165	10
165-170	4
170-175	1

(a) Represent the given information with the help of a histogram.

(b) How many students height above 155 cm in a class ?

OR

In a city , Environment board take a survey about Pollution in particular place , collected data is as follows

| Pollution percentage	number of Days
25-30	5
30-35	15
35-40	26
40-45	20
45-50	10
50-55	7

c) Represent the given information with the help of frequency polygon.

d) How many days pollution percentage is more?

31. In a triangle ABC, E is the mid – point of median AD. Show that $ar(BED) = \frac{1}{4} ar(ABC)$
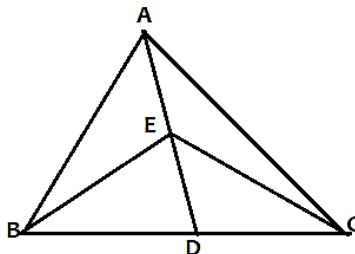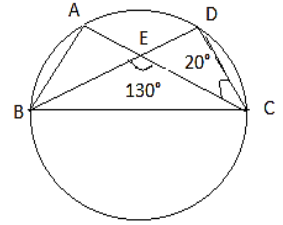

OR

In the figure ABC and ABD are two triangles on the same base AB.
If line-segment CD is bisected by AB at O ,
show that ar (ABC) = ar (ABD).
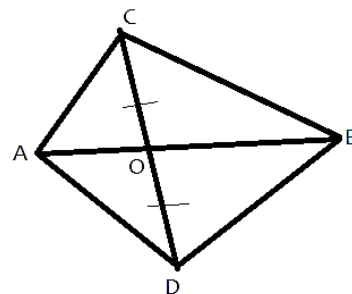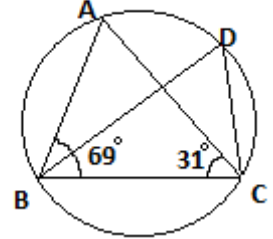
32. In the figureA ,B ,C ,andDare four points on a circle. AC and BD intersect at a point E Such that ∠BEC = 130°and ∠ECD = 20°. Find ∠BAC .

OR

In the figure , ∠ABC = 69° , ∠ACB = 31° then find ∠BDC ?

33. Factorise the equation by using appropriate identities

b) $9x^2 +6xy +y^2$ and b) $4y^2 -4y +1$

OR

Use suitable identities to find the product.

b) $(x +5)(x+6)$ and b) $(y^2 + \frac{3}{2}) (y^2 - \frac{3}{2})$

V Answer the following questions: **4 x 4 = 16**

34. Construct a triangle ABC, in which B=60⁰, C= 45⁰ and AB+BC+CA = 12cm.

35. A triangle and parallelogram have the same base and the same area. If the sides of the triangle are 26 cm, 28cm and 30 cm, and the parallelogram stands on the base 28cm, find the height of the parallelogram.

OR

A rhombus shaped field has green grass for 18 cows to graze. If each side of the rhombus is 30 m and its longer diagonal is 48m, how much area of grass field will each cow be getting?

36. Draw the graph of linear equation in two variable:

$$y - 2x = 1$$

37. Prove that " The angle subtended by an arc at the center is double the angle subtended by it at any point on the remaining part of the circle".

V Answer the following question: **1x5=5**

38. A solid iron toy consisting of a right circular cone of lateral height 5cm. and the base diameter is 8 cm, which is surmounted on hemisphere is placed upright in a right circular cylinder full of water such that it touches the bottom. Find the volume of water left in the cylinder, if the radius of the cylinder is 4cm, and height is equal to the iron toy.
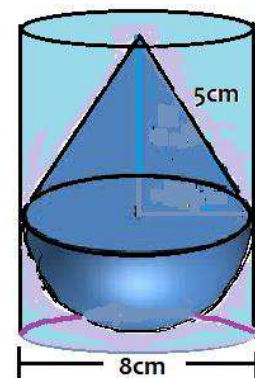
######*******######   ಸುದೀಶ ಬಿ.ಸಿ. ಮೈಸೂರು

9 ನೇ ತರಗತಿ   ಸಂಕಲನಾತ್ಮಕ -2   ಗಣಿತ   ನೀಲನಕ್ಷೆ ಮಾರ್ಚ್- 2020   ಗರಿಷ್ಠ ಅಂಕಗಳು: 80

ಪ್ರಶ್ನೆಗಳ ಸ್ವರೂಪ	ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ	ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ ಅಂಕಗಳು	ಒಟ್ಟು ಅಂಕಗಳು
M.C.Q ಬಹು ಆಯ್ಕೆ	8	1	8
Very Short Answer question ಅತಿ ಕಿರು ಪ್ರಶ್ನೆಗಳು	8	1	8
Short Answer question ಕಿರು ಪ್ರಶ್ನೆಗಳು	8	2	16
Long Answer question-type-1 ದೀರ್ಘ ಉತ್ತರ ಪ್ರಶ್ನೆಗಳು-1	9	3	27
Long Answer question-type-2 ದೀರ್ಘ ಉತ್ತರ ಪ್ರಶ್ನೆಗಳು-2	4	4	16
Long Answer question-type-3 ದೀರ್ಘ ಉತ್ತರ ಪ್ರಶ್ನೆ	1	5	5
	38		**80**

	ಪ್ರಶ್ನೆಗಳ ಮಟ್ಟ	ಶೇಕಡಾವಾರು	ಅಂಕಗಳು
1	ಸುಲಭ	30%	27
2	ಸಾಧಾರಣ	50%	45
3	ಕಠಿಣ	20%	18
		100%	**90**

20 ಅಂಕಗಳ ಆಂತರಿಕ ಪ್ರಶ್ನೆಗಳು			
	ಅಂಕಗಳು	ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ	ಅಂಕಗಳು
1	2 ಅಂಕಗಳು	2	4
2	3 ಅಂಕಗಳು	4	12
3	4 ಅಂಕಗಳು	1	4
		7	**20**

sl. No.	cognitive levels	%	Marks
1	Remembering ಜ್ಞಾನ	10%	8
2	Understanding ತಿಳುವಳಿಕೆ	55%	44
3	Application and Analysis ಅನ್ವಯಿಕ	20%	16
4	Skill ಕೌಶಲ್ಯ	15%	12
		100%	**80**

SUDEESHA BC   MYSURU

9TH STANDARD MATHEMATICS SA-2 EXAMINATION BLUE PRINT MAX MARKS:80

Sl No	Content /Unit ಘಟಕಗಳು	Remembering ಜ್ಞಾನ					Understanding ತಿಳುವಳಿಕೆ					Application and Analysis ಅನ್ವಯಿಕ						Skill ಕೌಶಲ್ಯ					TOTAL		TOTAL MARKS ON THEME
		MCQ	Sa1	Sa2	La1	La2	MCQ	Sa1	Sa2	La1	La2	MCQ	Sa1	Sa2	La1	La2	La3	MCQ	Sa1	Sa2	La.1	L.a.2	QUESTIONS	MARKS	
			1	2	3	4		1	2	3	4		1	2	3	4	5		1	2	3	4			
1	Number Systems ಸಂಖ್ಯಾ ಪದತಿ	1[1]						1[1]	2[1]											2[1]			4	6	6
2	Introduction to Euclid's Geometry ಯೂಕ್ಲಿಡ್ ನ ರೇಖಾಗಣಿತ							1[1]	2[1]														2	3	
3	Lines and angles ರೇಖೆಗಳು & ಕೋನಗಳು						1[1]			3[1]													2	4	10
4	Quadrilaterals ಚತುರ್ಭುಜಗಳು									3[1]													1	3	
5	Triangles ತ್ರಿಭುಜಗಳು	1[1]	1[1]							3 [1]													3	5	
6	Constructions ರಚನೆಗಳು																			2[1]		4[1]	2	6	19
7	Circles ವೃತ್ತಗಳು		1[1]							3*[1]						4[1]							3	8	
8	Polynomials ಬಹುಪದೋಕ್ತಿಗಳು	1[1]								3*[1] 6[2]													4	10	14
9	Linear equations in two variables ಎರಡು																					4[1]	1	4	

#	Chapter																				Marks	Total Marks	
10	Coordinate Geometry निर्देशांक रेखागणित						1[1]	2[1]													2	3	3
11	Heron 's Formula ಹೆರಾನ್ ಸೂತ್ರ	1[1]								4*[1]											2	5	
12	Areas of parallg and Triangles ಸಮಾಂತರ ಚತುರ್ಭುಜ & ತ್ರಿಭುಜ	1[1]							3*[1]												2	4	18
13	Surfaces & Volumes ಮೇಲ್ಮೈ ವಿಸ್ತೀರ್ಣ & ಘನಫಲ.	1[1]					1[1]						2[1]		5[1]						4	9	
14	Statistics ಸಂಖ್ಯಾಶಾಸ್ತ್ರ.							2[1]						3*[1]							2	5	
15	Probability ಸಂಭವನೀಯತೆ						1[1]	2*[1]			1[1]	1[1]									4	5	10
	Total	6	2		1	5	10	24	4	1	1	2	3	4	5		4		8		**38**	**80**	
				8				44						16				12					

prepared by : SUDEESHA BC   MYSURU   #OUT SIDE MARKS[INSIDE QUESTION NUMBER]   * CHOICE QUESTIONS