Class 10th

Marks 80

## General Instructions:

- i. This question paper comprises four sections—A,B,C&D. This question paper carries 40 questions. All questions are compulsory. II.
- Section—A Q No.1 to 20 comprises 20 questions of one marks each
- iii. Section—B - Q 21—26 comprises of 6 questions of two marks each
- iv. Section—C—Q 27 to 34 comprises of 8 questions of three marks each
- v. Section—D – Q 35 to 40 comprises of 6 questions of four marks each. There is no overall choice in the question paper. However an integral choice has been provided in 2 questions of one mark, 2 questions of two marks, 3 questions of three marks and 3 questions of four marks. You have to attempt only one of the choice in such questions.

## Section-A

Question number 1 to 10 are MCQs of 1 marks each. Select the correct option: de fair straffic ciencia, hi st

Q1.	The HCF	of 2	and 1	1 is	TANT AFA		157
	1 2			Ť.	· #	J.	

Q2. A polynomial of degree '2' is called

- a) Quadratic poly b) Zero Poly
  - C) Quartic Poly
- D) None of these

Q3. A Quadratic Equation  $aX^2 + bX + C=0$ ,  $a \neq 0$  has two equal roots if:

- b) D=0
- C) D<0
- d) N.O.T.

Q4. The Common difference of the AP 6,9,12,15 ----is:

- d) 3

Q5. The distances of the point A(x,y) from the Origin O (0,0) is

Q6. A line which touches a circle at one point is called

- a) Secant
- b) Chord
- c) tangent
- d) N.O.T

Q7. Area of circle is given by:

- a) ⊼r³
- b) 2⊼r
- c)⊼r²
- d) N.O.T

Q8. Which of the	following can	not be the prob	ability of an event:		
a) 2/3	and the second s	The state of the s	11.		
Q9. The value of S	100				
a) -1	b) 0	/-c) 1	d) v3 🕣		
Q10. The mean of	f the grouped	data can be fou	nd by direct metho	d as:	
a) $\sum \frac{fl}{flxi}$					
In Q.Nos 11 to 15	, fill in the b	lanks. Each ques	tion is of 1 marks e	each.	
Q11. LCM (a,b) x					
Q12. x=1, y=2 is t	he solution of	the pair of linea	r equation		
		(Ye	No. of the last of		
		4 4 4 5 5 10 7 C TO CO. C. N. P. P.	of an AP	(True/Fa	alse)
			OR		
Sum of first $' arphi'$ te	erm of an A.P i	s given by			
\$φ=φ/2 (2a+(φ -	- 1)d)	(True/False)	es rejekt tisste	di A	
Q14. Śinθ = Cosθ for	all values of	θ(True/Fa	alse)	A	
Q15. All	triangles are si	imilar (Isosceles/	Equilateral).		
Q16. to Q20 are sho	rt answer type	questions of 1	marks each.		
Q16. Define Collinear	Points				
7 - 7			ÓR		
Write a formula for fi	nding the area	of a ΔABC with	Coordinates of the	Vertices as A(x1,y1)	, B(x2, V2), C(x2, V2)
Q17. Write One appli	cation of Trigo	nometry			
Q18. State Pythagora	s theorem?				and the second
Q19. If P(E) = 0.5, find	l P(notEs)?				
Q20. Given r=1 unit, f	ind the vol. of	Sphere?	i i i		
	· Sterville	the Wash			

## QNos 21 to 26 Carry 2 marks each

- Q21. 2 Cubes each of volume 64cm<sup>3</sup> are joined end to end. Find the surface area of the resulting Cuboid.
- Q22. Given that HCF(306,657)=9, find LCM(306,657).
- Q23. Check for Consistency

5x-4y=8=0

10x-8y+16=0

Q24. Find the values of  $\frac{2tan45^{\circ}}{1+tan^245^{\circ}}$ ?

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Evaluate

Sin25° Co 65° + Cos25° Sin65°

Q25. One A die is thrown Once. Find the probability of getting 'an odd number'

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Q26. The marks obtained by 30 students of class X of a certain school in a mathematics proper consisting of 100 marks are presented in table below. Find the mean of the marks obtained by the students

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Marks Obtained (Xi)	10	20	36	40	50	56	60	70	.72	-80.	88	92	.951
No. of Students (fi)												3	1

## Section-C

Q27. to 34 carry 3 marks each:

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Q27. Find the zero's of the quadratic polynomial, and verify the relationship between the zero's and the coefficients  $4S^2 - 4S + 1$ 

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Divide  $x^3-3x^2+5x-3$  by  $x^2-2$  and find the quotient and the remainder.

Q28. Solve the pair of linear equation by substitution method.

Q29. Find the value of K, so that the quadratic equation have two equal roots 2x²+Kx+3=0

Q30. Which term of an AP: 3,8,13,18 is 78?

Find the sum of the first 15 multiplies of 8

Q31 Evaluate 
$$\frac{\sin^2 63^\circ + \sin^2 27^\circ}{\cos^2 17^\circ + \cos^2 73^\circ}$$
?

Q32. Prove that the tangents drawn at the ends of a diameter of a circle are parallel

OR COMPANY OF THE PROPERTY OF after the color white out this Prove that the | |gm circumscribing a circle is a rhombus.

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Q33. Find the area of a sector of a circle with radius 6cm if angle of the sector is 60°.

Q34. A drinking glass is in the shape of a frustum of a core of height 14cm, the diameter of its two circular ends are 4cm and 2cm. find the capacity of the glass.

Section-D

QNo. 35 to 40 carry 4 marks each

Marks december 180 Q35. Find the roots of the quadratic equation  $4x^2+4\sqrt{3}x+3$  by the method of completing the square. A Property

Find two numbers whose sum is 27 and product is 182.

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Q36. The angle of elevation of the top of a tower from a point on the ground which is 30m away from the foot of tower is 30°. Find the height of the tower.

Q37. Find the points on the x-axis which is equidistant from (2,-5) and (-2,9)

Find the ratio in which the line segment joining the points (-3,10) and (6,-8) is divided by (-1,6)

Q38. The ratio of the area of two similar  $\Delta s$  is equal to the square of the ratio of their corresponding sides.

c is an issosless  $\Delta$  right angled at C. prove that  $AB^2 = 2AC^2$ .

Construct a triangle with sides 5cm, 6cm, & 7cm and then another triangle whose sides are 7/5 of the corresponding sides of the first  $\Delta$ .

Q40. The distribution below gives the weight of 3 students of a class. Find the median weight of the

Weight (in kg)	40-45	45.50	FOFF		1 1 1		
No. of Students	2	45-50	30-55	55-60	60-65	65-70	70-75
No. or students	2	3	8	6	6	3	2

- The paper has been prepared as per the CBSE pattern after a minor change in marks distribution of different Topics of Mathematics.
- \* The question paper has been prepared from the Text book of Mathematics provided by BOSE Sgr,
- The question paper comprises 40 questions of 80 marks (summative assessment)
- Internal assessment of 20 marks:
   Like (i) Pen paper test (ii) Project work, like measurement of school campus, perimeter of boundary etc. (iii) Attendance and participation.

	Mark	s distribution
1. Real No's	4 marks	1+1+2
2. Polynomials	4 marks	1+3
3. Linear Eq.in two variables	6 marks	1+2+3
4. Quaratic Equation	8 marks	1+3+4
5. Arthmetic progression	5 marks	1+1+3
6. Trigonometry	7 marks	1+1+2+3
7. Application to Trigonometry	5 marks	1+4
8. Co-ordinate Geometry	6 marks	1+1+4
	6 marks	1+1+4
9. Triangles 10. Circles	5 marks	1+1+3
11. Construction	4 marks	4
12. Area related to Os	4 marks	1+3
12. Area related to 03	6 marks	1+2+3
13. Surface Area & Volumes	4 marks	1+1+2
14. Probability	6 marks	2+4
15. Statistics	A romage	