CENTRAL PUBLIC SCHOOL

subject – Maths

TAJPUR ROAD, SAMASTIPUR

Time-3 hrs.

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Class – X		MID TE	RM EXAM - 2019	F. M. – 80
1 4 8	7		Section – A	20 X 1 = 20
A . Choose the co	rrect option.	•	section-A	With second
1. If n is any	natural number th	nen 6 ⁿ -5 ⁿ alwa	avs end with	a self-self-self-self-self-self-self-self-
a) 1	b) 3	c) 5	d) 7	
2. The produ	uct of three consec		0.00	4.60
a) 5	b) 6	c) 7	d) none of these	
3. If one roo	10 m (c. 75)		13y + m is reciprocal of othe	then the value of m is
a) 6	b) 0	c) 5	d) Y5	, care, and raise or in is
	es of the quadratic			
	cannot be positive		c) are always equal	act of
	cannot be negative		d) are always unequal	
	of equations y = 0 a			
a) one so	J	solution	· Control of the Control	- d\ colutions
and the second second				
	+ c = 0 has equal r	Total Contract Contract	The same of the sa	turas Ch-11 d turas Ch-11 d
	b) ± 2√ac		d) none of these	fuzad h
	-3 are in AP, then			in a total
a) 19	b) 7	The state of the s	d) 15	
The second second	and a rhombus are			
a) Similar			t not congruent d) neither:	similar nor congruent
9. In Δ ABC i			of Cos (A + B) is	Marian Commence of the Commenc
a) 0	b) 1	c) $\frac{1}{2}$ d) $\frac{\sqrt{3}}{2}$	and the state of the state of	
10. A pole 6m	high casts a shado	2 2 2 m lon	g on the ground, then the su	ele eleveste e le
a) 60°	b) 45°	c/ 300	g on the ground, then the su	n s elevation is
B. Fill in the blank		c) 30	(a) 90.	
	polynomia	lis of dayroo	ana .	
	r , least value of ri		one.	- 13 13°
			- Company of the second	
			always have ro	ots.
	value for sine of ar			
	are	-	a facility of the second	a frequency of the
	the following state			a gr
	\triangle QRP, then \angle D =	Zu and ZE	= <u>/P</u>	(4)
	= Sin A + Sin B	at the	of the same of the same of	ROSE STORY
	e in AP then, 2a = b		F	d
	ot of the equation x			man distribution of the state o
20. Sum of two	o irrational number	1		118 1
Each guartians en		7	Section – B	4 1
Each questions ca		1 and Alves		6X2 =12
22. FOI Wildt V	alues of K, k-3, 2k+	interes '- s	e in AP?	and the same of
22. Show that	every positive odd	integer is of t	the form (4q+1) or (4q+3), W	here q is some integer.
23. Natiliti (OSS	ses two different co	ins simultane	eously. Find the probability of	getting at least one tail.

Maths h.a=c-b

LAPKB12(=1 ra. hph-c1ch-a=(-b)

Col (FA + KB) 264(10-cc) 2h 1. hlh 5-2010 CV < b

Col (A+ B) 2 for (90+cc) 2h 1. hlh 5-2010 CV < b

24. If α and β are zeroes of polynomial p(x) = x2 - 5x + 6, then find the value of $\alpha + \beta - 3\alpha\beta$.

25. Solve for
$$x = \frac{1}{x+1} + \frac{2}{x+2} = \frac{4}{x+4}$$

26. If tan (A + B) =
$$\sqrt{3}$$
 and tan (A - B) = $\frac{1}{\sqrt{3}}$; 0° < A + B \leq 90°, A> B, find A and B.

Section - C

Each questions carries 3 Marks.

27. Solve the pair of linear equations. $(a + b)x + (a + b)y = a^2 - 2ab - b^2$

$$-(a + b) (x + y) = a^2 + b^2$$

28. In an equilateral triangle ABC, D is a point on side BC such that BD = $\frac{1}{3}$ BC. Prove that $9AD^2 = 7AB^2$.

29. Prove that
$$\frac{\sin e - \cos e + 1}{\sin e + \cos e - 1} = \frac{1}{\sec e - \tan e}$$

30. Obtain all other zeroes of $3x^4 + 6x^3 - 2x^2 - 10x - 5$, if two of its zeroes are $\sqrt{\frac{5}{3}}$ and $-\sqrt{\frac{5}{3}}$

31. How many three digit numbers are divisible by 7?

32) If the areas of two similar triangles are equal, prove that they are congruent.

- 33. The angles of elevation of the top of a tower from two points at a distance of 4m and 9m from the base of the tower and in the same straight line with it are complementary. Find the height of the tower.
- 34. The diagonal of a rectangular field is 60m more than the shorter side. If the longer side is 30m more than the shorter side. Find the sides of the field.

Each questions carries 4 marks.

35. State and prove Pythagoras theorem.

36. If Cosec A + Cot A = m. Find the value of Cos A:

OR

105

112

994

6X4= 24

8X3 = 24

If 9 Sin e + 40 Cos e = 41. Find the value of Cosec e.

- 37. At the foot of a mountain, the Elevation of its summit is 45°. After ascending 1000m towards the mountain up a slope of 30° inclination, the Elevation is found to be 60°. Find the height of the mountain.
- 38. Draw the graphs of the Equations 5x y = 5 and 3x y = 3. Determine the coordinates of the vertices of the triangle formed by these lines and the y axis.
- 39. The sum of the third and the seventh terms of an AP is 6 and their product is 8. Find the sum of first sixteen terms of the AP.
- 40. If the polynomial $x^4 6x^3 + 16x^2 + 25x + 10$ is divided by another polynomial $x^2 2x + k$, the remainder comes out to be (x + a), find k and a.

The line segment XY is parallel to side AC of Δ ABC and it divides the triangle into two parts of equal areas. Find the ratio $\frac{AX}{AB}$

a (m +y) - h (n-y)

an-hn faythy

an-hn faythy

(ah) +y(aih)

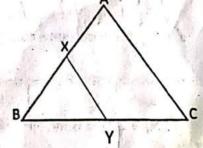
(n-y)(a-h) >

(n-y)

(n-y)







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