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# SECOND REVISION TEST, FEBRUARY - 2020 STANDARD - X

Ti	me	: 3.00 hrs	MATI Part		Marks: 100
Answer all questions.					
		A= {a, b, p}, B = {2, 3}, (	Caloars) then	nfAuC\xB1 is	1401-14
	٠,	• •	20	c) 16	d) 12
	2)	If {(a, 8), (6,b)} represe			
	-,	respectively.		y lanction, then t	no value of a and bare
			(8, 8)	c) (B B)	A) (6 8)
	3)	The number of divisors	of any name	number le	d) (6, 6)
	/	a) 0 b)	di any prime		A 11-6-1- 21
			1465 /4	c) 2	d) Infinite
	''	The value of (13+23+334 a) 14400 b)	+15") - (1	72737115)	
		0'		c) 14280	d) 14520
	5)	The square root of 1-	X16 is		
		a) 1 = x <sup>1</sup> b)	. 3	4 1885 A	e
		a) 14 x	1 4 X°	c) 1 - x <sup>a</sup>	d) 1 + x4
	6)	Transpose of a row ma	trix is		
100				c) unit matrix	( d) diagonal matrix
	7)	a) row matrix b) column matrix c) unit matrix d) diagonal matrix How many tangents can be drawn to the circle from an interior point?			
		a) 0 b)	1	- c) 2	
	8)	The angle of inclination		allal ta u avia	d) Infinite
	٠,	a) 0° b)	Aco illo par		
	٥١	The class of the fire wi	45°	c) 90°	d) undefined
	9).	The slope of the line w	nich is perpend	icular to a line joir	ning the points (0,0) and
		(-8, 8) is			
				c) -1	d) 1
	10)	If $\sin \theta = \cos \theta$ , then the	value of θ is		1 100
			45°	c) 60°	d) 90°
	11)	1) If the ratio of the height of a tower and the length of its shadow is 1:13			
		then the angle of elevat	ion of the sun	has measure	
			45°	c) 60°	d) 90°
	12)	The height of a right circ		se radiue ie 5cm	and clant boight is 12-
	,	will be		30 Hadias 13.50111	and stant neight is 13cm
			12 cm	) 12	3 at 26 and
	131	The range of the data	5 5 5 5	c) 13 cm	d) 10 cm
	,			1411	the second
	44		1.	c) 3	d) 5
	14)	Which of the following		· · · · · · · · · · · · · · · · · · ·	
		a) P(A)>1 b)	P(\phi)=0	c) P(A)+P(A)=	:1 d) 0≤P(A)≤1
1,2			Part -	11	
Answer any Ten questions. Question number 28 is compulsory: 10×2=20					
	15)	If A = {1, 3, 5} and B={2	. 3) then find /	A×B and B×A.	
	16)	Find K if for(k)=5 where	· f(k)=2k-1	971	
	17)	Find the number of ten	ns in the AP	3. 6. 9. 12 1	11.
٠,	18)	If 13+23+32+k3= 4410	0 then find 1	+2+3+ k	1, 21
4	400	P1-10E	+21 P²+1	P-12	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	19)	Simplify:- P-7		2-3)2	4
	**	the same of the sa	,	· ·	US

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### X - Maths

- 20) Construct a 3×3 matrix whose elements are a = |i-2||
- 21) Find the value of 'a', if (2, 3), (4,a) and (6, -3) are collinear.
- 22) Find the intercepts made by the line 4x-9y+36=0 on the coordinate axes.
- 23) Prove that 1-sinθ = sec0+tan0
- 24) If the base area of a hemispherical solid is 1386 sq.mtrs, then find its total surface area?
- 25) If the ratio of radii of two spheres is 4:7, find the ratio of their volumes.
- 26) Find the range and coefficient of range of the following data: 25, 67, 48, 53, 18, 39, 44
- 27) A coin is tossed thrice. What is the probability of getting two consecutive tails?
- 28) What length of ladder is needed to reach a height of 7m along the wall when the base of the ladder is 4m from the wall?

Answer any Ten questions. Question number 42 is compulsory: 10×5=50

- 29)  $A = \{x \in N / x < 3\}$ ,  $B = \{x \in W / 0 < x \le 3\}$  and  $C = \{3,5\}$ . Verify that  $A \times (B C) = (A \times B) (A \times C)$ .
- 30) Let f(x) = 2x+3, g(x) = 1-2x and h(x)=3x. Prove that composition of functions is associative.
- 31) The ratio of 6th and 8th term of an A.P is 7:9. Find the ratio of 9th term to 13th term.
- 32) Find the sum to n terms of the series 3+33+333+..... to n terms.
- 33) The roots of the equation x2+6x-4=0 are α, β .Find the quadratic equation whose roots are  $\alpha^2\beta$  and  $\beta^2\alpha$
- 34) If  $A = \begin{pmatrix} 3 & 1 \\ -1 & 2 \end{pmatrix}$  show that  $A^2 5A + 7I_2 = 0$
- 35) State and prove Angle Bisector theorem.
- 36) Let A(3, -4), B(9,-4), C(5,-7) and D(7,-7). Show that ABCD is a trapezium.
- 37) Find the equation of a straight line passing through (1,-4) and has intercepts which, are in the ratio 2:5.
- 38) From the top of a tower 50m high, the angles of depression of the top and bottom of a tree are observed to be 30° and 45° respectively. Find the height of the tree.  $(\sqrt{3}=1.732)$
- 39) The radius and height of a cylinder are in the ratio 5:7 and its curved surface area is 5500 sq.cm. Find its radius and height.
- 40) For a group of 100 candidates the mean and standard deviation of their marks were found to be 60 and 15 respectively. Later on it was found that the scores 45 and 72 were wrongly entered as 40 and 27. Find the correct mean and standard deviation.
- 41) A coin is tossed thrice. Find the probability of getting exactly two heads or atleast one tail or two consecutive heads.

one tail or two consecutive heads.

42) If 
$$A = \frac{2x+1}{2x-1}$$
  $B = \frac{2x-1}{2x+1}$  then, find  $\frac{1}{A-B} - \frac{2B}{(a^2-B)^2}$ 

Part - IV

Part - IV

2x8=16

## unswer all questions:-

- 43) a) Draw a triangle ABC of base BC=8cm, ∠A=60° and the bisector of ∠A meets BC at D such that BD=6cm.
  - b) Draw a circle of diameter 6cm from a point P, which is 8cm away from its centre. Draw the two tangents PA and PB to the circle and measure their lengths.
- 44) a) Graph the quadratic equation (2x-3) (x+2)=0 and states its nature of solutions.[or]