www.Padasalai.Net - No.1 Educational Website in Tamilnadu

Ts10M	<u>Tenkasi</u> Common First	District Comm Revision Exan	on Examina nination - Ja	tions nuary 2023)
25-01	-2,023	Standar	1 10			
Time: 3.00 Hour	s	MATHEMA PART-1	TICS		Marks; 100	D
Note : 1. Ans	wer all the 14	questions.	e	ivon for	$14 \times 1 = 14$	4
2. Cho	ose <u>the most</u>	suitable ansv	ver from th	e given for	ir alternatives	i.
1) Let $f(x)$	$= \sqrt{1 + X^2}$ then	f(x,y) > f(y) f(y)	(x,y)	f(x) f(y)	d) None of these	P
a) f(xy) 2) If the HCl	$= f(x) \cdot f(y) = D$ = of 65 and 117 is	$(xy) \ge i(x) \cdot i(y)$ s expressible in t	he form of 65	5m - 117, the	n the value of <i>m</i> i	s
a) 4	b)	2	c) 1		d) 3	~
3) An A.P.co	nsists of 31 ter	ms. If its 16 th te	erm is m, the	en the sum o	or all the terms o	Л
this A.P is	b) f	52m	c) 31m	$\mathbb{R}^{2} \mathbb{R}^{2}$	d) $\frac{31}{2}$ m	
4) If $(x-6)$	s the HCF of x	² – 2x – 24 an	$d x^2 - kx -$	6 then the	value of K is	ί.
a) 3	b) !	5	c)_6	See alise	d) 8	
5) Graph of	a linear polyno	mial is a	raight line	Shere She	d) Hyperbola	ĺ.
a) Circle 6) The numb the X axis	er of points of i	ntersection of t	he quadratic	polynomial	$x^2 + 4x + 4$ with	ר
a) 2	b) C		c) 0 or 1		d) 1	·
7) The perin respective	neters of two s ely, If $PQ = 10$	similar triangle cm, then the l	es ∆ABC of length of Al	∆PQR are 3 3 is	6cm and 24cm	ו
a) 6 ² / ₂ cm	b) <u>1</u>	$\frac{0\sqrt{6}}{2}$ cm	c) $66\frac{2}{3}$ cm	า่่ง	d) 15cm	2
8) Two poles distance b	of heights 6n etween their fe	n & 11 m star eet is 12m, wh	nd vertically nat is the di	y on a play stance-betw	ground. If the een their tops?	2
a) 13m	b) 14	4m	c) 12.8m	(d) 15m	
9) The area of a share	of triangle form	hed by the poi	nts $(-5,0)$,	(0,-5) and	(5,0) IS	2
a) 25 sq.u		1 then slope	c) o sq.ui	andicular h	isostar of BO is	
10) If slope of	the line PQ is	$\sqrt{3}$ then slope	or the perp	enuicular b		2
a) 0	b) _	√3	c) $\frac{1}{\sqrt{3}}$	C	1) √3	
11) A tower is	60m high. Its	shadow is <i>x</i> m	etres short	er when the	e sun's altitude	3
is 45° then	when it has t	een 30°, then	(x s equal	to	1) 41 92 m	1
	6 6	.92111	c) 45.0 m	- (1)- 1- 1-1-1-1	1) 41.92 m	1
12) The total sui	face area of a c	yclinder whose	radius is $\frac{1}{3}$	or its neight	is sq.units.	
a) 24πh ²	b) 50	$\frac{6\pi h^2}{\alpha}$	c) $\frac{9\pi h^2}{8}$	C	$\frac{8\pi h^2}{9}$	
13) When we di	vide surface a	rea of a spher	e by the sp	here's volu	me, we got the	;
answer as	$\frac{1}{2}$, What is th	e radius of th	e sphere?	1		
a) 54cm	b) 120	cm	c) 9cm	d) 24cm	
14) If the stand	ard deviation o	of x, y, z is P th	nen the star	ndard devia	tion of $3x + 5$,	
3y + 5, 3z +	5 is	• E	c) 0p + 15	A	חכו	
a) P + 5	hs (n	PART - TT	c) 9p + 15	, u) 3P	
Answer any 10 que	tions: [Qn.N	o: 28 is com	oulsory]	13-2 18-2 11-14	10 × 2 = 20	
15) Let $A = \{1,\}$	2, 3 and $B =$	${x / x is a pri}$	me no. less	s than 10}		
Find $A \times B a$ 16) Given $f(x) =$	$10 \text{ B} \times \text{A}$. $2 \text{ v} = \text{v}^2$ find μ	(i) $f(1)$ (ii)	$F(y \perp 1)$			
17) If $P_1^{x_1} \times P_2^{x_2} \times P_3^{x_3}$	$^{x_3}_{2} \times P_4^{x_4} = 1134$	00 where P. 1	P_1, P_2, P_4 are	e primes is a	scending order	
and x_1, x_2, x_3	, x ₄ are integer	s, find the val	ue of P_1 , P_2	, P ₃ , P ₄ & X ₁	, X ₂ , X ₃ , X ₄ .	
18) Find the sum	$3 + 1 + \frac{1}{2} +$		1 2			
19) Reduce the e		x ² +81x	lowest for	m		
20) In∆ABC. D ar	x^3	$+8x^2 - 9x$	AB and AC	respective	elv. Show that	
DE BC if AE	3 = 12 cm, AD	= 8cm, AE $=$	12cm and	AC = 18 cm	Sign Strong char	

Kindly send me your questions and answerkeys to us : Padasalai.Net@gmail.com

www.Padasalai.Net - No.1 Educational Website in Tamilnadu

- 21) The line P passes through the points (3,-2) (12, 4) and the line q passes Ts10M through the points (6, -2) and (12, 2). Is P Parallel to q?
 - 22) The equation of a straight line is 2(x y) + 5 = 0. Find its slope, inclination and intercept on the y axis.
 - 23) Matrix A has 'a' rows and 'a+6' columns and matrix B has 'b' rows and '8 b' columns and if both products AB and BA exists find a & b.

$$\frac{\cos\theta}{\cos\theta} = \sec\theta - \tan\theta$$

- 24) Prove the identity $\frac{1}{1+\sin\theta}$ 25) If the total surface area of a cone of radius 7cm is 704 cm², the *n* find its slant height.
- 26) Find the maximum volume of a cone that can be carved out of a solid hemisphere of radius 'r' units.
- 27) If $P(A) = \frac{2}{3}$, $P(B) = \frac{2}{5}$, $P(A \cup B) = \frac{1}{3}$ then find $P(A \cap B)$. 28) The number of volleyball games that must be scheduled in a league with *n* teams is $G(n) = \frac{n^2 - n}{2}$ where each team plays with every other team exactly once. A league schedules 15 games. How many teams are in the league?

PART - III

$10 \times 5 = 50$

- Answer any 10 questions: [Qn.No: 42 is compulsory] 29) Let A = The set of all natural numbers less than 8, B = The set of all Prime numbers less than 8, C = The set of even Prime number. Verify that $A \times (B - C) = (A \times B) - (A \times C)$
 - 30) Find the sum of all natural numbers between 300 and 600 which are divisible by 7
 - 31) Find the sum of the series $(2^3 1^3) + (4^3 3^3) + (6^3 5^3) + \dots$ to (i) *n* terms (ii) 8 terms
 - 32) Find the GCD of the Polynomials $6x^3 30x^2 + 60x 48$ and $3x^3 12x^2 + 21x 18$.
 - 33) If $A = \begin{pmatrix} a & b \\ c & d \end{pmatrix}$ and $I = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ then, Show that $A^2 (a+d) A = (bc ad) I_2$ 34) If α , β are the roots of the equation $2x^2 - x - 1 = 0$, then form the equation whose roots are
 - (ii) $2\alpha + \beta$, $2\beta + \alpha$ (i) $\alpha^2\beta$, $\beta^2\alpha$
 - 35) State and prove Angle bisector theorem (ABT)
 - 36) P and Q are the mid points of the sides CA and CB respectively of a $\triangle ABC$, right angled at C, Prove that $4(AQ^2 + BP^2) = 5AB^2$.
 - 37) Find the value of K, if the area of a quadrilateral is 28 sq.units, whose vertices are taken in the order (-4,-2), (-3, k) (3, -2) and (2, 3)
 - 38) If the angle of elevation of a cloud from a point 'h' metres above a lake is θ_1 and the angle of depression of its reflection in the lake is θ_2 , Prove that the

height that the cloud is located from the ground is $\frac{h(\tan \theta_1 + \tan \theta_2)}{\tan \theta_2 - \tan \theta_1}$

- 39) Nathan, an engineering student was asked to make a model shaped like a cylinder with two cones attached at its two ends. The diameter of the model is 3cm and its length is 12cm. If each cone has a height of 2cm, find the volume of the model that Nathan made.
- 40) A right circular cyclindrical container of base radius 6cm and height 15cm is full of ice cream. The ice cream is to be filled in cones of height 9cm and base radius 3cm, having a hemispherical cap. Find the number of cones needed to empty the container.
- 41) Two dice are rolled together. Find the probability of getting a doublet or sum of faces as 4.
- 42) Find the equation of a straight line through the intersection of lines 5x 6y = 2, 3x + 2y = 10 and perpendicular to the line 4x - 7y + 13 = 0.

SIVAKUMAR.M. Sor Ram Matrice HSS, Vallam- 62 7809 nswer both the questions. Matrice HSS, Vallam- 2×8=16 Answer both the questions.

- 43) a) Construct a triangle $\triangle PQR$ such that QR = 5cm, $\angle P = 30^{\circ}$ and the altitude (OR) from P to QR is of length 4.2 cm
 - b) Draw the two tangents from a point which is 10cm away from the centre of a circle of radius 5cm. Also, measure the lengths of the tangents.
- 44) a) Graph the following linear function $y = \frac{1}{2}x$. Identify the constant of variation and verify it with the graph. Also (i) Find \hat{y} when x = 9 (ii) Find x when y = 7.5. (OR)

Kindly send me your understions and answerkeys to us patate its nature ghadilicoms.