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Seat N	No.:					E	Inrolment	No				
		GUJAF B. Pharm.	RAT TI - SEME	ECHI ster-	NOLOG 1 • EXAM	FICAL INATIO	UNIV N – SUM	ERSI	TY 2018			
Subject Code: 210006 Subject Name: Elementary (Rep Time: 02:30 PM TO 05:30 PM Instructions:					emedial) Mathematics				Date: 05/05/2018 Total Marks: 80			
2. 3.	Mal Figu	ke suitable assures to the right	umptions. it indicate	whereve full ma	er necessary urks.	y.						
Q.1	(a) (b)	Solve x $(x + 5) (x + 7) (x + 12) = -150$ Solve the following system of linear equations using Cramer's rule							06 05			
	(c)	Solve the foll $x^2 + y^2 = 1$	llowing si $85$ ; x +	imultant $y = 19$	eous equati	ons	- 2			05		
Q.2	(a)	Solve by Ma $-3x_1 + 6x_2 - 1$ $3x_1 - 4x_2 + 6$ $4x_1 - 8x_2 + 1$	$\begin{array}{l} \text{trix Invert}\\ 1x_3 = 14\\ x_3 = -5\\ 3x_2 = -17 \end{array}$	rsion m  -	ethod.					06		
	(b)	$\begin{array}{c c} +x_1 & -\cos 2 \\ Using theore \\ x & y & z \\ x^2 & y^2 & z^2 \\ 3 & 3 & 3 \end{array}$	z = xyz (x	e that - y) ( - z	z ) (z – x )	'n				05		
	(c)	$x^3 y^3 z^3$ A two digit digits. Find t	number is he numb	four tin er.	mes the sur	n and thre	e times tl	ne prod	uct of its	s <b>05</b>		
Q.3	<b>(a)</b>	Calculate the	e mean ar	nd stand	lard deviati	on from tl	he follow	lowing data				
		Age	20-30	30-40	40-50	50-60	60-70	70 70-80		90		
		No. of members	3	5-61	132	153	140	0 51 2				
	<b>(b)</b>	Calculate the	e mode ar	nd medi	an for the f	ollowing	data.					
		Class	0-10	1	0-20	20-30	30-4	30-40 40-50				
		Frequency	10	1	4	19	17	17 13				
	(c)	The number	N of bact $N = 1$	teria in	a culture gi	reased to	rate prop	ortiona e hour	l to N. What w	vill be		
		the value of	N after 1.	.5 hours	??	icascu to	552 III OII	ic nour.	vv nat vv			
04	(ສ)	Do as directo	ed							በራ		
<b>۲</b> ,1	(••)	(i) Find the v	value of	tan 22 <sup>-1</sup>	<sup>1°/2</sup> (ii) Eval	uate tan <sup>1</sup>	$13\pi$			00		
	<b>(b)</b>	$\cos \theta + \sin \theta = \sqrt{2} \cos \theta \text{ show that } \cos \theta - \sin \theta = \sqrt{2} \sin \theta$										
	(c)	Prove that co	Prove that $\cos^4 A - \sin^4 A = 1 - 2\sin^2 A$									
Q.5	(a)	If $\sin \alpha = \frac{1}{\sqrt{5}}$	If $\sin \alpha = \frac{1}{\sqrt{5}}$ and $\cos \beta = \frac{3}{\sqrt{10}}$ and if $0 < \alpha$ , $\beta < \frac{\pi}{2}$ , then prove that $\alpha + \beta = \frac{\pi}{4}$ .							. 06		
	(b) (c)	Solve $(xy^2 + x)dx + (yx^2 + y)dy = 0$ A population grows at the rate of 8% per year. How long does it take for the population to double?										
Q. 6	<b>(a)</b>	If $x^y = e^{x - y}$ ,	prove th	at dy/dx	$x = \log x / ($	log ex)2				06		
	<b>(b)</b>	Evaluate: ∫	$\frac{3x-5}{x^2-x-2}$		Derder							

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	(c)	Solve : $(x^2 - y^2) dy = 2xy dx$	05	
Q.7	(a)	In a group of students there are 4 girls and 6 boys. In how many ways a committee of five members can be formed such that		
		I. There are at least 3 girls		
		II. There are at the most 3 boys in the committee.		
	<b>(b</b> )	Find the equation of the line passing through the points $(2, 3)$ and $(5, -2)$ .	05	
	(c)	Find the area of the triangle whose vertices are (4, 4), (3, -2), (-3, 16).	05	

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