School of Engineering

Second Sessional Examination, Even Semester (48. 2023-24)

B. Tech: All Branch

[Year: Second] [Semester: 17]

Course Title: Statistical and Numerical Technique

Course Code: BAS3401

Max Marks: 60

Time: 3hrs

				CTION							CO	Marks
	1. Attempt al											
	Define rank correlation coefficient.								1	1		
b)	Write the formula of t-test.							4	1			
c)	If one of the regression coefficients is 0.8 and coefficient of correlation is 0.6,								1			
	what would be the value of another regression coefficient?								6	1		
6)	What is the order of convergence of bisection method?									5	1	
2)	Define relati			mple.							7	1
f	Prove that V	=1-E	-1.								12	1
	Write the fo	rmula of S	simpson	1's 3/8 th	rule.		1				Q Q	1
b)	Write the fo	rmula of I	Runge-K	lutta me	thod of	tourth	order.				CO	Mark
				ECTIO								1,1568 42
QN	2. Attempt a	ny two pa	irts of t	he follo	wing:							
	Calculate Ka	rl Pearson	n's coeff	ficient of	fcorrel	ation to	or the d	ata giv	en neio	VV	1 -	6
31/	X	10	14	18		22	26		30		1	
	I y	18	12	24		6	30		36	- F	-	-
	In a sample	of 1000	cases, t	he mear	ofac	ertain	test is 1	4 and	S.D. 15	2.5.		
6)	Assuming th	se distribu	ition to	be norm	ial, find						3	3
	12 House	יארט ארטוני	above	18?				1 12	11 0 4	10		
	(ii) How r	nany scor	e below	8? whi	ere z(1.	(6) = 0.4	1452 an	d Z(2.	41=11+	DIO	-	-
1)	Find a real	root of .	$x^3 + x$	-1=0	by usi	ng Reg	ula-fals	metr	iod, co:	rect	6	6
	uoto four d	ecimal pla	ices.								1	-
	Apply Gaus	s-Jordan r	nethod	to solve	the foll	li. wing	equatio	ns:				
				x + y							10	6
				2x - 3y								
-				3x + 4y	-	= 40					100	Mar
				ECTIO							1	
	33. Attempt									-		
21		Two lines of regression are given by $5y-8x+17=0$ & $2y-5x+14=0$										
	I is of a 16, I and (i) the mean value of x and y (ii) of (iii) the coefficient of										1 "	-
-			-	-								
	The data							mples	of 100 i	TETIS		
	540.00	water the second and	p-chart	and com	ment or	the re	eults:	0	To	110	-	
10	i Sample		12	2	0 0	15	17	8	7 11	1111	1 -	
	A 4 1000 445		1 16 1	1	7 1 %		1-1	11	1 11			

	Die la	100				400			
	Dona	750	751			1600			
	Total	1 150	250			1000			
	Find out wheth	er there is an	association i	promor a	onomic c	ondition at			
	home and I.Q.								
	the level of sign			0081000	11	our adress or			
17	.4. Attempt any	the same was a president and the same of t							
C.,		Trees or							
7									
1)/	Find the real	root of the	equation x*-	-x-9=	0 by N	ewton-Raphso	n ,		-
	method, corre	ct to three p	laces of deci	mal.				'	
	Solve the follo	wing system:							
))			10x + 2, +	z = 9					
/		2	x + 20y - 2				1	0	5
			2x + 3y + 10				1	"	
	by Gauss-Sei	del method c	errect to two	places of	decimal				
	Solve by Jacob	oi's method:		P	accimal.		-		
-3			1 1						
-)			4x + V 31	7 = 1/					
"			4x + y - 32				1	0	5
"			x + 5y + z	= 14			1	0	5
Q.N	1.5. Attempt any	two parts o	x + 5y + z $2x - y + 8z$	= 14			1	0	5
	1.5. Attempt any	two parts o	x + 5y + z $2x - y + 8z$	= 14			1	0	5
Q.^			$\frac{2x + 5y + z}{2x - y + 8z}$ f the followin	= 14			1	0	5
	Find the mini		$\frac{2x + 5y + z}{2x - y + 8z}$ f the followin	= 14			1	0	5
Q.^			$\frac{2x + 5y + z}{2x - y + 8z}$ f the followin	= 14	4		1	7	5
Q.^	Find the missi	ng value in the	$\frac{x + 5y + z}{2x - y + 8z}$ If the following the table: $\frac{2}{2}$	= 14 = 12 g: 3 31	4 81		1	7	5
Q.^	Find the missi	ng value in the	$\frac{x + 5y + z}{2x - y + 8z}$ If the following the table: $\frac{2}{2}$	= 14 = 12 g: 3 31	4 81		1	7	5
Q.^	Find the missi $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	ng value in the state of the st	x + 5y + z $2x - y + 8z$ If the following 2 g the interval	= 14 == 12 g: 3 of integrat	4 81 ion into 8	equal parts,	1	7	5
Q.^	Find the missi X Y Evaluate $\int_0^1 \frac{dy}{1}$ using Simpson	ng value in the 1 1 1 3 1 3 dx by dividing n's 1/3rd rule.	x + 5y + z $2x - y + 8z$ If the following the table: 2 g the interval Hence find lower than the table in table in table in the table in table in table in the table in table i	= 14 = 12 g: 3 31 of integrat	JAHRELEIV		1	7	5
Q.^	Find the missi X Y Evaluate $\int_0^1 \frac{d}{dt}$ using Simpson Using Euler's	ng value in the state of the st	x + 5y + z 2x - y + 8z f the following the table: 2 g the interval Hence find loan approximation	= 14 = 12 g: 3 31 of integrated at a part of the value of the state of	f v correc		1	7	5
Q.^	Find the missi X Y Evaluate $\int_0^1 \frac{d}{dt}$ using Simpson Using Euler's	ng value in the state of the st	x + 5y + z 2x - y + 8z f the following the table: 2 g the interval Hence find loan approximation	= 14 = 12 g: 3 31 of integrated at a part of the value of the state of	f v correc		1	-	5
Q. a	Find the missi x y Evaluate $\int_0^1 \frac{dx}{dx}$ using Simpson Using Euler's $x = 2$ given the	ing value in the second secon	x + 5y + z $2x - y + 8z$ If the following the table: 2 $y = 0;$	= 14 $= 12$ g: 3 of integrate of the property of the value of the property of the propert	f v correc		1	7 12 8	5 5
Q. 'n)	Find the missi X Y Evaluate $\int_0^1 \frac{d}{dt}$ using Simpson Using Euler's	ing value in the second secon	x + 5y + z $2x - y + 8z$ If the following the table: 2 $y = 0;$	= 14 $= 12$ g: 3 of integrate of the property of the value of the property of the propert	f v correc		1	-	5 5
Q. 'n)	Find the missi X Y Evaluate $\int_0^1 \frac{d}{dt}$ using Simpson Using Euler's X = 2 given the N.6. Attempt an	ing value in the second secon	x + 5y + z $2x - y + 8z$ If the following the interval Hence find loan approximation an approximation of the following the fo	= 14 $= 12$ g: 3 of integrate of the value of the va	f y corres	ponding to		-	5 5
Q. ``a	Find the missi X Y Evaluate $\int_0^1 \frac{d}{dt}$ using Simpson Using Euler's X = 2 given the N.6. Attempt an Using Lagran	ng value in the series of the series interpolated at $\frac{dy}{dx} - x - \frac{dy}{dx}$ y two parts of the series interpolated at $\frac{dy}{dx} - x - \frac{dy}{dx}$	x + 5y + z $2x - y + 8z$ If the following the interval Hence find loan approximation an approximation of the following the fo	= 14 $= 12$ g: 3 of integrate of the value of the va	f y corres	ponding to		-	5 5
Q a in c	Find the missi x y Evaluate $\int_0^1 \frac{dx}{dx}$ using Simpson Using Euler's $x = 2$ given the	ng value in the series of the series interpolated at $\frac{dy}{dx} - x - \frac{dy}{dx}$ y two parts of the series interpolated at $\frac{dy}{dx} - x - \frac{dy}{dx}$	x + 5y + z $2x - y + 8z$ If the following the interval Hence find loan approximation an approximation of the following the fo	= 14 $= 12$ g: 3 of integrate of the value of the va	f y corres	ponding to		-	5 5
	Find the missi X Y Evaluate $\int_0^1 \frac{d}{dt}$ using Simpson Using Euler's X = 2 given the N.6. Attempt an Using Lagran	ng value in the series of the series interpolated at $\frac{dy}{dx} - x - \frac{dy}{dx}$ y two parts of the series interpolated at $\frac{dy}{dx} - x - \frac{dy}{dx}$	x + 5y + z $2x - y + 8z$ If the following the interval Hence find loan approximation an approximation of the following the fo	= 14 $= 12$ g: 3 of integrate of the value of the va	f y corres	ponding to		-	5 5
Q.'\ n)	Find the missi X Y Evaluate $\int_0^1 \frac{d}{dt}$ using Simpson Using Euler's X = 2 given the N.6. Attempt an Using Lagran	ng value in the series of the series interpolated at $\frac{dy}{dx} - x - \frac{dy}{dx}$ y two parts of the series interpolated at $\frac{dy}{dx} - x - \frac{dy}{dx}$	x + 5y + z $2x - y + 8z$ If the following the interval Hence find loan approximation an approximation of the following the fo	= 14 $= 12$ g: 3 of integrate of the value of the va	f y corres	ponding to		-	5 5
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	Find the missi X Y Evaluate $\int_0^1 \frac{d}{dt}$ using Simpson Using Euler's X = 2 given the N.6. Attempt an Using Lagran following tab X 5 Y 12	ing value in the original of the original origi	x + 5y + z $2x - y + 8z$ If the following the interval Hence find loan approximation of the following lation formulation for formulation fo	= 14 $= 12$ g: 3 31 of integrate of the value of the value of the value of the area of	value o	ponding to		-	5 5 5
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Number of COs may van from course to course

COs	Questions Numbers	Total Marks
C()1	1a,1c,2a,3a	13
002	36	5
CO3	25	6
CO4	1b,3c	6
CO5	1e	1
CO6	1d,2c,4a	12
CO7	1f,5a,6a	11
CO8	1h,5c,6c	11
CO9	6b	5
CO10	2d,4b,4c	16
CO12	1g,5b	6