1505 minutes 02/09/2022.

Hnnexwe-1.

per Code	m-	121	Paper	: Mathe	maties-l			-	**************	-		-	-
per ID:	-			-			\$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00 \$1.00		- Company of the State of the S	The state of the same		L	T/P
rking Sel	heme:			The second second	-							3	1
2. Te	ichers (m end	Continuos Theory E	us Evalu	ation: 25	marks								
-			ranninal.	10ns: 75	morta								
truction (or pap	er setter	(Term	end The	nry Exn	mination	ıs):		-	-	-	-	-
3 Apa	rt from	") questi mswers o question	r short a	nswer ty	pe quest	ion of tot	al 15 ma	mure sy arks.	Habus, T	his que	stion sho	uld b	e obje
Citiii	Stratt Da	13 14 1 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			misory.	rest of H	le Dame	ebull		2.0			
ducs	Hone I	and I total	2 1 1 V V V V	- due	(10112 III	une unu	Individe	vol			me studi	cin sna	III De a
T. THE	Questio	the open in	1		va weigh	nage of 1	5			v contai	upto 5	sub-p	parts /
(31.11)	C timest	Dine to le			ng m vic	w the les	Triting ou		0.1				lard /
~	require	-	scientifi	e) calcula	itors / lo	g-tables /	data – ta	oca texte ibles ma	ook.	in at te			
Course	Object	ves:				-			oc spec	med n r	equired.		
1:	Т	o underst	and diffe	erential o	alculus -			-					
2:	Т	o underst	and inter	mal and		nethods to	o solve fe	ormulate	d engine	ering pro	blems.		
3:	T	o undersi		grai caleu	ilus metl	ods to so	lve form	ulated er	ngineerin	g proble	ns.		- 11
	- 3	- andersi	and sequ	ience and	series to	solve fo	rmulated	enginee	ring prob	lems			
4: /	1	o underst	and line	ur algebra	to solve	formula	ted engin	resting p	ersla lassa a				
Course	Outcor	nes (CO)	:				8	ocinig p	ooichis.				
CO1:		Ability	to use di	Terential.	calculus	n d 1		2000					
CO2:		Ability	(A ties int	ferential	carcuitus	methods	to solve	formulat	ed engine	ering pr	oblems.		
CO3:		ALCU	to dae mi	egral cale	culus me	thods to s	olve forn	nulated c	ngineerii	ig proble	ms.		
		Ability	to sequer	nce and se	eries to s	alve form	ulated en	gineerin	g problen	ns,			
CO4:		Ability	to use lin	ear algeb	ra to sol	ve formul	ated engi	neering ;	problems				
Course	Outcor	nes (CO	to Progr	amme O	utcomes	(PO) M	apping (s	scale 1. i	ow 2. 84				
CO/PO	POOL	PO02	PO03	PO04	PO05	P006	P007		PO09		T		
COI	-	3	1	1	1	-	-	-		PO10	P011	PO	12
CO2	-	3	ı	1	1	-	-	1		-	1	2	
CO3	-	3	2	2	1	-	1.	-	-	-	1	2	
	-	-							1	-	2	2	
CO4	-	3	3	3	1	-	1.		-		2		

Differential Calculus: Functions, limit of a function, derivative of functions, implicit functions, chain rule, application of derivative to Maxima and Minima; successive differentiation; Leibnitz theorem, Taylor's and McLaurin's series for functions of single variables for exponential, trigonometric and logarithmic functions. [10 hrs]

Unit-11

Integral Calculus: Integration: Integration by parts, and substitutions, Integration using partial fractions, Reduction formulae of trigonometric functions, Definite integrals and its properties; Application of integration to areas and arc lengths for Cartesian curves only; Simpson's and Trapezoidal rule.

[10 hrs]

1/2/2 Alha 1/9/07

Bre

EN

Unit-III

Sequences and Series: Arithmetic Progression (A.P.), Arithmetic Mean (A.M.), Geometric Progression (G.P.), general term of a G.P., sum of n terms of a G.P. Arithmetic and geometric series, infinite G.P. and

Convergence and divergence of series, tests for convergence; Comparison test, Ratio test, Cauchy's nth root test, Leibnitz test, conditional and absolute convergence.

Unit-IV [10 hrs]

Matrices and Determinants: Matrices, Types of matrices, zero matrix, transpose of a matrix, symmetric and skew symmetric matrices. Addition, multiplication and scalar multiplication of matrices, simple 3 matrices), properties of determinants, minors, cofactors, Adjoint of a square matrix (up to 3 × elementary row and column operations, Inverse of a matrix, symmetric, skew-symmetric and orthogonal matrices, solution of system of linear equations. [10 hrs]

Text/References:

- E. Kreyszig, Advanced Engineering Mathematics, 10th Ed., Wiley Eastern Ltd., 2011.
- B.S. Grewal, Elementary Engineering Mathematics, Khanna publisher
- 3. B.S. Grewal, Higher Engineering Mathematics. Khanna publisher
- 4. Shanti Narayan, Matrices, S. Chand & Co.
- Schaum Outline Series, Linear Algebra, McGraw Hill
- 6. Shanti Narayan and Dr. P. K. Mittal, Integral Calculus, S. Chand & Co.
- 7. Shanti Narayan and Dr. P. K. Mittal, Differential Calculus, S. Chand & Co.

12/9/22

Albha 1/9/22

W

aper Code: P	5-12	2 P	aper: N	lathema	tics-11						l.	T/P	C
Paper ID:		V											4
	iers Cor	ntinuous eory Exa				a de antigado, el Pelo antigado en antigad							L
Instruction for	paper	setter (T	erm em	d Theory	y Exami	nations)	-	or other contracts	***************************************				-
2. The firstness of the	rst (1 st) line ans from quall have empt on ons. Eacuestions auestions	oe 9 question awers or suestion 1 2 two que by one of the Unit slate to be a tent of (see aut of (see aut of (see	should hort ans which i stions of the two hall have framed sked sho	be composer type is computed to compute the computer to compute the computer the co	oulsory a question lsory, re- the corresions in the weighta g in view at the level	ind cover n of total st of the sponding e unit. It ge of 15, the learn el of the p	the ent 15 mark paper sh unit of the adividual ning outcomesoribe	ire sylla s. nall cons he syllai question comes of d textbook	ist of 4 ous. How ns may the coulok.	units as prover, the contain of the	per the student ipto 5 sucer. The se	yllabus. shall be ib-parts	Ever aske / sul
Course O								,					
1:	To	understar	nd linear	algebra	to solve	formulate	d engine	ering pro	blems.				
2:	То	understar	nd differ	ential mo	thods to	solve for	mulated	engineer	ing prob	lems.			
3:	To	understa	nd multi	variate co	niculus n	ethods to	solve fo	rmulated	Lenginee	ring prob	dems.		-
4;	To	understa	nd vecto	r calculu	s method	s to solve	formula	ned engi	neering p	roblems.			
Course		es (CO):						2 29 3					
COL		Ability to											Site
CO2:		Ability to	use dit	Terential	methods	to solve	formulate	d engine	ering pro	oblems.		-	
. CO3:		Ability to	multiv	aciate ca	culus me	thods to	solve for	mulated	engineeri	ng proble	ems.		
CO4:		Ability to	nse vec	etor calcu	ilus meth	ods to sol	ve formu	lated eng	incering	problem	S.		
Course	Gutcon	nes (CO t	o Progr	amme O	utcomes	(PO) Ma	opping (s	cale 1: i	ow, 2: M	edium, 3	: High	2013	
CO/PO	PO01	P002	PO03	PO04	PO05	PO06	PO07	PO08	PO09	PO10	POII	PO12	-
COI	-	3	1	1	1 '	-	- 4	-	-	-	1-	2	-
CO2	-	3	1	1	1			-		-	1 .	2	,
C03	-	3	2	2	1	-	-	-	-	-	2	2	
C04	1.	3	3	3	1	-	-	-	-		2	2	

Unit-I

Linearly independent and dependent of vectors, Rank of a matrix, Solution of system of linear equations. Gauss elimination method, Eigenvalues and eigenvectors, Properties of eigenvalues; Cayley-Flamilton Theorem and its application.

Unit-Il

Formation of differential equation, Variable separable and homogeneous differential equations of first Differential Equations order, Linear differential equations of first order and first degree (Leibnitz and Benoulli's form), Exact differential equation, General linear differential equations with constant coefficients, Complimentary [10 hrs] functions: Particular integral

Unit-III

Multivariable Calculus

Partial derivatives, Chain rule, Total derivative: Jacobian. Maxima, Minima and saddle points; Method of Lagrange multipliers: Multiple Integration: Double integrals (Cartesian), change of order of integration in double integrals, Change of variables (Cartesian and polar). Applications: areas and volumes.

[10 hrs]

Unit-IV

Vector calculus

Vectors and scalars, magnitude and direction of a vector, Types of vectors, position vector of a point. Dot product and Vector product, scalar triple product.

Scalar and vector point function. Gradient of scalar field and directional derivatives, curl and divergence

Text/References:

- E. Kreyszig, Advanced Engineering Mathematics, 10th Ed., Wiley Eastern Ltd., 2011.
- 2. B.S. Grewal, Elementary Engineering Mathematics, Khanna publisher
- 3. B.S. Grewal, Higher Engineering Mathematics, Khanna publisher
- 4. Shanti Narayan, Matrices, S. Chand & Co.

of vector fields, line integrals. [10 hrs]

- 5. N.M. Kapoor, Differential Equations, Pitamber Pub Co.
- 6. Schaum Outline Series, Linear Algebra, McGraw Hill
- 7. Schaum Outline Series, Vector Analysis, McGraw Hill

83/22

Abha :

M

er Code: BS	124	, Pap	er: Pro	bability	and Sta	atistics	Auro pierro				L	P	C
er ID:	•										3	2	4
tking Scheme: 1. Teachers 2. Term en 3. Term en	Contin d Theor d Practi	y Exami cal Exm	nations: nination	50 mark s: 25 ma	s rks		delena incomo de a selección de	gangin, managi pung	ty otoronia nyrazionalny	r.			
truction for p	aper set	ter (Ter	m end	Theory I	Examina	ations):			-			o especialis Mindia des	
There she The first single first single first single first unit shall to attem question The que of the q The req	(1 st) quite answer on quest I have to pt only is. Each stions a	estion s rs or sho tion I w vo quest one of t Unit sha re to be	hould be ort answer thich is tions cov the two the two framed to	e computer type queening the question amarks vector in the question in the queening in the period of	Isory an uestion of ory, rest correspective correspection the veight again view to the level	of total 1 of total 1 of the poonding t unit. Inc	the entir 5 marks, aper sha init of th lividual ing outco	dl consiste syllaborated as sy	st of 4 unus. Howe is may cours the cours	nits as po ever, the ontain up se / paper	er the sy student s pto 5 sui r. The sta	ilabus. shall be b-parts	Ever asko / sub
Course Ob	jectives:												
1:	To un	derstand	d central	tendency	and me	asure of	dispersio	n to solv	e formul	ated eng	incering	proble	ns.
2:	Tow	nderstan	d skewno	ess, kurto	sis, corr	elation ar	nd regres	sion to s	olve forn	ulated e	ngineerii	ig prob	lems.
3:	Tou	nderstan	d probat	ility and	probabi	lity distri	butions to	o solve f	ormulate	l enginee	ering pro	blems.	
The state of the s						sis to solv							
4:		-	st and as										ii k
Course O	utcome	(CO):		L L male	may and	measure	of disper	sion to s	olve form	ulated er	ngincerin	g prob	lems.
COI:	A	bility to	use cen	trai tenue	incy and	s, correla	tion and	1 regres	sion to	solve for	rmulated	engin	eering
CO2:	1	menh	arme										
CO3:		Ability to	use pro	bability	and prob	ability di	aribution	s to solv	e formula	ited engil	neering p	n doich	
CO4:		Ability t	use tes	t of hypo	thesis to	solve for	mulated e	engineeri	ng proble	ems.	4711-		
Course	Outcom	es (CO	o Progra	amme O	utcomes	(PO) Ma	ipping (s	cale 1: le	ow, 2: M	edium, >	; Algn	POI	
CO/PO	PO01	PO02	PO03	PO04	PO05	PO06	PO07	PO08	P009	POID	1011		
COI	-	3	1	1	1	1-	-	-	-	-	l	2	
C02	-	3	1	1	1	-		-	-	-	1	2	
C03	-	3	2	2	l		-		1	-	2	2	die.
1.00	-		-	7	Ti	-		-	-	-	2	2	

Frequency distributions. Discrete and continuous series, Histogram, Frequency polygon, Measure of central tendency, Mean. Median Mode, Measure of dispersion, Range, Quartile deviation, Mean deviation, standard deviation, Relation between measure of dispersion, [10 hrs] coefficient of variation.

Skewness and Measure of Skewness, Karl Pearson's coefficients of Skewness, moments, Relation between moments about mean and moments about any other point. Kurtosis, type of Kurtosis, Coefficients of Kurtosis. Correlation and Karl Pearson's coefficients of correlation. Linear Regression. Lines of Regression, coefficients of Regression. Properties of regression coefficients, angle between two lines of regression.

Unit III

Sample space, Event, Event space, Discrete Random Variables and Probability Distributions: Discrete Random Variables, Probability Distributions and Probability Mass Functions, Cumulative Distribution Functions, Continuous Random Variables and Probability Distributions: Continuous Random Variables, Probability Distributions and Probability density Functions. Cumulative Distribution Functions. Mean. Variance, Moment generating functions and Moments.

Binomial Distribution, Poisson Distribution and Normal Distribution. [10 hrs]

Unit IV

Testing of Hypothesis: Statistical hypothesis, Large sample tests based on Normal distribution for single proportion and difference of proportion and for single mean and difference of means. Tests based on tdistribution and F distributions. Goodness of fit. [10 hrs]

Note: Laboratory practicals from the syllabus be conducted.

Textbooks:

- 1. Douglas G. Montgomery and Runger. Applied Statistics and Probability for Engineers, Wiley,
- 2. S. C. Gupta and V. K. Kapoor, Fundamentals of Mathematical Statistics, S. Chand & Co., 10th
- Schaum's Ouline Series, Introduction to Probability and Statistics, McGraw Hill

References:

- 1. Richard A. Johnson, Miller and Freund's Probability and Statistics for Engineers, Pearson, 10th Ed.,
- 2. Ronald E. Walpole, Raymond H. Myers, Sharon L. Myers and Keying Ye, Probability & Statistics for Engineers & Scientists, Pearson, 2016.
- 3. B. C. Gupta, Irwin Guttman, and Kalanka P. Jayalath, Statistics and Probability with Applications for Engineers and Scientists using Minitab, R and JMP, Wiley, 2020.
- 4. Jay Devore, Probability and Statistics for Engineering and the Sciences, Cengage Learning, 2014. 5. William W. Hines. Douglas C. Montgomery, David M. Goldman, and Connie M. Borror, Probability

and Statistics in Emgineering, Wiley, 2003