## Pandit Deendayal Petroleum University

## School of Liberal Studies

20BSM202T					BASIC MATHEMATICS III					
Teaching Scheme					Examination Scheme					
L	Т	Р	С	Hrs. / Week	Theory			Practical		Total
					MS	ES	IA	LW	LE/Viva	Mark
3	1	0	4	4	25	50	25			s 100
3	-	U	4	4	25	50	25			100
COURSE	OBJECTI	VES								
► <mark>1</mark>	o unders	stand the	e basic co	oncepts of differen	<mark>tial calculus</mark> .					
> 1	o study l	ine integ	rals and	their applications.						
<mark>۲ &lt;</mark>	o unders	stand the	e maxima	a and minima conc	epts for the fu	nctions of several	variable			
► <mark>1</mark>	o study t	he vecto	o <mark>r field a</mark>	nd its applications						
UNIT I FL	INCTION	IS OF SE	EVERAL	VARIABLES						8 Hrs.
- unctions	from R <sup>n</sup> 1	to R <sup>m</sup> . sc	alar vect	tor fields, derivativ	ve of a scalar f	ield w.r.t. a vecto	or. directional	derivatives a		5 111 3.
				her order, directio						
UNIT II V	ECTOR (		US:							11 Hrs.
The gradie	nt of a sca	alar field	. a suffici	ent condition for d	ifferentiability	a chain rule for de	erivatives of sca	alar fields, apr	olications to g	eometry.
-				s of vector fields, S						
			<b></b>	OF SEVERAL VA						9 Hrs.
-				Taylor's formula fo	-	Extrema with con	straints, Lagra	nge's multipli		
Maxima. m			(		,					
t <mark>heorem.</mark>	INE INT.	EGRALS	AND IT	S APPLICATIONS	5					12 Hrs.
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theorem. UNIT IV L Paths and	line integ	grals, Bas	sic prope	<b>S APPLICATIONS</b> erties of line integr ntal theorems of	als, Line integr	-			grals, Open co	onnected
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t <mark>heorem.</mark> UNIT IV L Paths and sets, Path	line integ indepen	grals, Bas dence, <mark>F</mark>	sic prope <mark>Fundame</mark>	erties of line integr ntal theorems of	als, Line integr	-			grals, Open co cessary and s	onnected
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