SAVITRIBAI PHULE PUNE UNIVERSITY

Exam Pattern (2019 Pattern) **Engineering Mathematic-II**

Q.N.	Theory Exam : Phase I (30 Marks) Time : 1 Hr	Marks
	Unit I: First Order Ordinary Differential Equation	
1a	Exact/Reducible to Exact DE	5
1b	Exact / Reducible to Exact DE	5
1c	Linear / Reducible to Linear DE	5
	OR	
2a	Linear / Reducible to Linear DE	5
2b	Linear / Reducible to Linear DE	5
2c	Exact / Reducible to Exact DE	5
	Unit II: Application of Differential Equation	
3a	Newton's Law of Cooling /Orthogonal Trajectory	5
3b	Electric Circuit	5
3c	Rectilinear Motion	5
	OR	
4a	Orthogonal Trajectory/ Newton's Law of Cooling	5
4b	Electric Circuit	5
4c	One Dimensional Conduction of Heat	5

Q.N.	Theory Exam : Phase II (70 Marks) Time : 3 Hrs	Marks
	Unit III: Integral Calculus	
1a	Reduction Formulae	6
1b	Beta / Gamma function	5
1c	Differentiation under Integral sign (DUIS rule)	6
	OR	
2a	Reduction Formulae	6
2b	Gamma function / Beta	6
2c	Error function / Differentiation under Integral sign (DUIS rule)	5
	Unit IV: Curve Tracing	
3a	Cartesian Curve	6
3b	Polar Curve	6
3c	Rectification of Curve	6
	OR	
4a	Cartesian Curve	6
4b	Polar Curve	6
4c	Parametric Curve	6
	Unit V: Solid Geometry	
5a	Sphere	6
5b	Cone (Right Circular Cone)	5
5c	Cylinder(Right Circular Cylinder)	6
	OR	
6a	Sphere	6
6b	Cone (Right Circular Cone)	5
6c	Cylinder(Right Circular Cylinder)	6
	Unit VI: Multiple Integral and their Application	
7a	Double Integration (Direct Evaluation ,Given region of Integration /withouts limit ,change of order of integration, Transformation to Polar Coordinate)	6
7b	Application of Double Integral (Area)	6
7c	Centre of Gravity / Moment of Inertia	6
	OR	
8a	Double Integration (Direct Evaluation ,Given region of Integration /withouts limit ,change of order of integration, Transformation to Polar Coordinate)	6
8b	Triple Integration / Application of Triple Integration : Volume Integration	6
8c	Moment of Inertia / Centre of Gravity	6