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Scheme of Valuation/Answer Key			
(Scheme of evaluation (marks in brackets) and answers of problems/key)			
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY			
FOURTH SEMESTER B.TECH (R &S) DEGREE EXAMINATION, MAY 2024 (2019 SCHEME)			
Course Code: EST200			
Course Name: DESIGN AND ENGINEERING			
Max. Marks: 100			Duration: 3 Hours
PART A			
		(Answer all questions; each question carries 3 marks)	Marks
1		Any 3 objectives – 1 mark each	(3)
2		Conceptual design – 1.5 marks, detailed design – 1.5 marks	(3)
3		3 points – 1 marks each	(3)
4		Explanation – 2 marks, example – 1 mark	(3)
5		Layout drawing – 1.5 marks, detailed drawing – 1.5 marks	(3)
6		6 points – 0.5 marks each	(3)
7		3 points – 1 mark each	(3)
8		Explanation – 1.5 marks, Figure – 1.5 marks	(3)
9		Any 3 points – 1 mark each	(3)
10		Explanation – 3 marks	(3)
PART B			
(Answer one full question from each module, each question carries 14 marks)			
Module -1			
11		Explanation of six steps of design process for the design of medicine box – 1.5 marks for each step Hand sketches – 5 marks	(14)
12		Explanation of six steps of design process for the design of carry bag – 1.5 marks for each step Hand sketches – 5 marks	(14)
Module -2			



13		Explanation of five steps of design thinking process for the design of watch – 2 marks for each step Hand sketches – 4 marks	(14)
14		Explanation with example - 8 marks, Figures – 6 marks	(14)
Module -3			
15		Design detailing, material selection, scale drawings and dimensions – 6 marks Design sketches with explanation – 8 marks	(14)
16		Role of mathematical modelling in design engineering – 6 marks Explanation with example – 8 marks	(14)
Module -4			
17		Different factors for selecting the nature inspired substance- 4 marks Design with proper sketches and explanation- 10 marks	(14)
18		Applying aesthetic concept and explanation using hand sketches – 7 marks Applying ergonomics concept and explanation using hand sketches – 7 marks	(14)
Module -5			
19		Considering production methods- 2.5 marks Considering life span requirement – 2.5 marks Considering reliability issues – 2.5 marks Considering environmental factors – 2.5 marks Hand sketches – 4 marks	(14)
20		Explanation of cost estimation with labour, materials and overhead costs - 10 marks Figures – 4 marks	(14)
