APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Scheme for Valuation/Answer Key
Scheme of evaluation (marks in brackets) and answers of problems/key
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION (S), MAY 2019
Course Code: ME407

Course Name: MECHATRONICS

Max. Marks: 100   Duration: 3 Hours

PART A
Answer any three full questions, each carries 10 marks.   Marks

1	a)	Resolver-3marks	(6)
		Synchro-3marks	
	b)	two applications- 2 marks	(2)
	c)	Hysteresis error- 1	(2)
		Non-Linearity error-1	
2	a)	Difference-2	(2)
	b)	Diagram-2 working-2 relation between tacks, sectors and resolution-1	(5)
	c)	Binary grey code table-2 diagram 1	(3)
3	a)	Diagram -2 working -2	(4)
	b)	Prevention of shock -2	(2)
	c)	Diagram 2 explanation 2	(4)
4	a)	Schematic 2 mention of neutral position and practical application 2	(4)
	b)	Circuit schematics with pump, pressure relief valve, non return valve, 4/3 way DCV and hydraulic motor-4 Explanation 2	(6)

PART B
Answer any three full questions, each carries 10 marks.

5	a)	2 factors-2 marks	(2)
	b)	2 differences-2 marks	(2)
	c)	Parallel plate RIE etching or Vapourization etching.	(10)
		Explanantion-3	
		Diagram-3	
6		Sketch-5	(10)
		Explanation-5	
7	a)	2 functions(accuracy, friction free movement) -2,	(2)
	b)	Explanation-1 coefficient of friction Vs speed graph-1	(2)

   c)   Diagram-3 Explanation 3   (6)

8   Functionally correct ladder diagram -6 explanation 4   (10)

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PART C
Answer any four full questions, each carries 10 marks.

9   a)   Schematic – 2 marks, Features – 3 marks   (5)

    b)   Four techniques – 4 × 0.5 = 2 marks   (2)

    c)   Sketch – 3 marks   (3)

10   a)   Block diagram – 2 marks, Elements – 1 mark   (3)

    b)   Three types – 1 mark + 1 mark + 1 mark   (3)

    c)   Block diagram – 2 marks, Steps – 2 marks   (4)

11   a)   Flowchart- 3 marks, Steps – 2 marks   (5)

    b)   Curve – 2 marks   (2)

    c)   Step angle – steps – 2 marks, answer – 1 mark   (3)

12   a)   Schematic diagram – 3 marks, Explanation – 1 mark   (4)

    b)   Four steps – 4 marks   (4)

    c)   Application of vision sensors – 2 marks   (2)

13   a)   Sketch – 3 marks, Working – 3 marks   (6)

    b)   Four applications – 4 × 0.5 = 2 marks   (2)

    c)   Two objectives – 2 marks   (2)

14   a)   Flowchart – 4 marks, Steps – 2 marks   (6)

    b)   Two advantages – 2 marks   (2)

    c)   Sketch – 1 mark, Method – 1 mark   (2)

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