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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**  FIFTH SEMESTER(s) B.TECH DEGREE EXAMINATION, July 2019 | | | | | |
| **Course Code: AE303** | | | | | |
| **Course Name: ELECTRICAL MEASUREMENTS AND MEASURING INSTRUMENTS** | | | | | |
| Max. Marks: 100 | | |  | Duration: 3 Hours | |
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| **PART A** | | | | | |
|  |  | ***Answer any two full questions, each carries 15 marks.*** | | | Marks |
| 1 | a) | Gaussian curve(Normal distribution curve) -2 marks  Error probability expression ( Pe= 0.6745\*SD) with explanation.- 2 marks | | | (4) |
|  | b) | Mean=49.82( 2 marks) SD=0.2786( 2 marks) ,  Pe= 0.6745 \* 0.2786=0.1879( 2 marks) | | | (6) |
|  | c) | Requirement of damping- 2marks  Eddy current damping-3 marks | | | (5) |
| 2 | a) | i) Accuracy -2marks  Precision - 2 marks  ii)Threshold -2 marks  Resolution -2 marks | | | (8) |
|  | b) | Spring- (T=kѲ)-3 marks, Gravity (T=mgl sinѲ)-4 marks. | | | (7) |
| 3 | a) | Moving coil-7.5 marks (PMMC), Moving iron-7.5 marks (Repulsion and attraction type). | | | (15) |
| **PART B** | | | | | |
| ***Answer any two full questions, each carries 15 marks.*** | | | | | |
| 4 | a) | Explanation -4marks, Diagram-2 marks. | | | (6) |
|  | b) | Diagram-1mark Explanation-4marks | | | (5) |
|  | c) | R=(P/Q)\*S= 100/10\*46=460 | | | (4) |
| 5 | a) | Diagram-2 marks, explanation-6 marks | | | (8) |
|  | b) | Diagram with markings- 4 marks, Explanation- 3 marks | | | (7) |
| 6 |  | Any one type of  Polar potentiometers- 7.5 marks,  Co-ordinate potentiometer- 7.5 marks | | | (15) |
| **PART C** | | | | | |
| ***Answer any two full questions, each carries 20 marks.*** | | | | | |
| 7 | a) | Block diagram with markings- 3 marks  Explanation detailing each block- 9 marks | | | (12) |
|  | b) | Block diagram-3 marks, Waveforms -1 mark, Explanation- 4 marks | | | (8) |
| 8 | a) | Definition or principle of thermocouple- 2 marks. Thermocouple bridge- 4 marks  Thermocouple wattmeter- 6 marks | | |  |
|  | b) | Peak response circuit- 3 marks.  Explanation- 4 marks. | | |  |
| 9 | a) | Block diagram – 5 marks, Explanation- 5 marks | | | (10) |
|  | b) | Distortion Meter explanation with block diagram- 6 marks  Rejection amplifier circuit- 4 marks | | | (10) |
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