|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Scheme of Valuation/Answer Key**  (Scheme of evaluation (marks in brackets) and answers of problems/key) | | | | | |
| **APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  SIXTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2019 | | | | | |
| **Course Code: AE304** | | | | | |
| **Course Name: INDUSTRIAL INSTRUMENTATION** | | | | | |
| Max. Marks: 100 | | |  | Duration: 3 Hours | |
|  | | | | | |
| **PART A** | | | | | |
|  |  | ***Answer any two full questions, each carries 15 marks.*** | | | Marks |
| 1 | a) | Any 3 relevant points 3 marks | | | (3) |
|  | b) | 3 methods a) passive linearization b) active linearization c) software linearization | | | (9) |
|  | c) | Explanation 3 marks | | | (3) |
| 2 | a) | Diagram 2 Marks, equation 1marks, explanation 2 Marks | | | (5) |
|  | b) | Manometer types 1 marks, 3x3marks =9 marks | | | (10) |
| 3 | a) | Two types 3 marks each | | | (6) |
|  | b) | McLeod, Pirani, Scott gauge, Thermocouple, Ionization, cold cathode etc. Any 2 methods x4.5marks=9 marks | | | (9) |
|  |  |  | | |  |
| **PART B** | | | | | |
| ***Answer any two full questions, each carries 15 marks.*** | | | | | |
| 4 | a) | Viscosity=shear stress/shear rate; kinematic Visc=Abs viscosity/Density; Spec Visc= Abs Visc of sample at T temp/ Abs Vis of standard at T temp; RelatVisc.= Abs Visc of sample at T temp/ Abs Vis of standard at 20℃ temp [1.5 marks x 4=6marks] | | | (6) |
|  | b) | Any 2 methods x 4.5marks=9 marks | | | (9) |
| 5 | a) | Liquid sealed drum, Diaphragm type, Rotary meters (lobbed impeller, sliding vane, Rotating vane), high precision. Any 5 methods 3 marks | | | (15) |
| 6 | a) | Any 5 classifications | | | (5) |
|  | b) | Any 2 methods x5 marks=10 marks | | | (10) |
|  |  |  | | |  |
| **PART C** | | | | | |
| ***Answer any two full questions,each carries 20 marks.*** | | | | | |
| 7 | a) | Vane, cup and impeller type. Naming the types 1 mark, 3x3marks=9marks | | | (10) |
|  | b) | Transit time flow meters, Frequency-Difference Type | | | (10) |
| 8 | a) | Classification 2 marks; [Diagram 2.5 marks Explanation 2 marks]x4=18 marks  Torque Tube Displacer, Spring Balance Displacer, Force Balance Displacer | | | (20) |
| 9 | a) | Diagram 5 marks Explanation 5 marks | | | (10) |
|  | b) | Diagram 5 marks Explanation 5 marks | | | (10) |
| \*\*\*\* | | | | | |