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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 DEGREE EXAMINATION, APRIL 2019** | | | | | |
| **Course Code: AE204** | | | | | |
| **Course Name: SENSORS AND TRANSDUCERS (AE)** | | | | | |
| Max. Marks: 100 | | |  | Duration: 3 Hours | |
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| **PART A** | | | | | |
| ***Answer any two full questions. Each question carries 15 marks*** | | | | | |
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|  |  |  | | | **Total Mark** |
| 1 | a) | Use of secondary transducer (3) ,figure (2) | | | 5 |
|  | b) | Diagram (3), Explanation (4) | | | 7 |
|  | c) | Active transducer (1.5) passive transducer (1.5) | | | 3 |
| 2 | a) | Strain gauge definition (2) gauge factor derivation (5) | | | 7 |
|  | b) | Sensor (2) transducer (2) | | | 4 |
|  | c) | Diagram (2) Explanation (2) | | | 4 |
| 3 | a) | Definition (2) Explanation (4) | | | 6 |
|  | b) | Resolution (2) linearity (2) | | | 4 |
|  | c) | Any five classifications (4x1=4) | | | 5 |
|  |  |  | | |  |
| **PART B** | | | | | |
| ***Answer any two full questions. Each question carries 15 marks*** | | | | | |
| 4 | a) | u-tube manometer- figure (2) explanation (2)  well type manometer - figure (2) explanation (2) | | | 8 |
|  | b) | Diagram (3) explanation (4) | | | 7 |
| 5 | a) | Diagram (2) Explanation (2) | | | 4 |
|  | b) | Figure (3) explanation (4) | | | 7 |
|  | c) | Diagram (2) Explanation (2) | | | 4 |
| 6 | a) | Diagram (3) explanation (4) | | | 7 |
|  | b) | Explanation (4+4) | | | 8 |
| **PART C** | | | | | |
| ***Answer any two full questions. Each question carries 20 marks*** | | | | | |
| 7 | a) | Definition (2) figure (2) explanation (4) | | | 8 |
|  | b) | Diagram (3) explanation (4) | | | 7 |
|  | c) | Working (3) Diagram(2) | | |  |
| 8 | a) | Explanation (6),Diagram (2) | | | 8 |
|  | b) | Hall effect definition (4) Application(4) | | | 8 |
|  | c) | Bernoulli’s theorem (4) | | | 4 |
| 9 | a) | Principle (2) explanation (3) application(3) | | | 8 |
|  | b) | i) rotameter- figure (2) explanation (4) ii) hot-wire anemometer- figure (2) explanation (4) | | | 12 |