

**S2026**

**Final Scheme/ Answer Key for Valuation**

*Scheme of evaluation (marks in brackets) and answers of problems/key*

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
FIRST SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018

**Course Code: ME100**

**Course Name: BASICS OF MECHANICAL ENGINEERING**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer any two questions, each carries 15 marks.*

Marks

- |   |    |                              |      |
|---|----|------------------------------|------|
| 1 | a) | Equation – 1 mark            |      |
|   |    | Sign convention – 2 mark     |      |
|   |    | Calculation – 1 mark         | (5)  |
|   |    | Answer – 1 mark              |      |
|   | b) | PV diagram - 2 mark          |      |
|   |    | TS diagram - 2 mark          |      |
|   |    | Derivation steps – 4 marks   | (10) |
|   |    | Final equation – 2 marks     |      |
| 2 | a) | CRDI block diagram – 2 marks | (5)  |
|   |    | Theory – 3 marks             |      |
|   | b) | Diagram - 4 marks            | (10) |
|   |    | Working - 6 marks            |      |
| 3 | a) | Diagram - 3 marks            | (7)  |
|   |    | Working - 4 marks            |      |
|   | b) | Diagram - 3 marks            | (8)  |
|   |    | Working - 5 marks            |      |

**PART B**

*Answer any two questions, each carries 15 marks.*

- |   |    |   |      |
|---|----|---|------|
| 4 | a) | Any five properties - 5 marks   | (5)  |
|   | b) | Block diagram – 3 marks   |      |
|   |    | P-H & T-S diagrams – 1 mark each  | (10) |
|   |    | Working – 5 marks   |      |
| 5 | a) | Diagram – 7 marks   | (10) |
|   |    | Derivation – 3 marks . (3 marks for attempting the question can be given) |      |
|   | b) | Diagram - 2 marks   | (5)  |

- Working - 3 marks
- 6 a) Five components of an automobile – 5 marks (5)  
b) Diagram – 7 marks (10)  
Derivation – 3 marks

### PART C

*Answer any two questions, each carries 20 marks.*

- 7 a) Functions of runner and riser – 8 marks (8)  
b) Properties of moulding sand 5 points – 2 marks each (10)  
c) Any two casting defects - 1 mark each (2)
- 8 a) Diagram – 2 marks  
Explanation – 2 marks (12)  
Any four operations – 8 marks
- b) Up milling with diagram – 4 marks (8)  
Down milling with diagram – 4 marks
- 9 a) Any five advantages - 5 marks (5)  
b) Soldering – 2.5 marks (5)  
Brazing – 2.5 marks  
c) Explain – 2 marks. (10)  
Four steps – 8 marks

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