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| **Scheme of Valuation/Answer Key SET 1**  (Scheme of evaluation (marks in brackets) and answers of problems/key) | | | | | |
| **APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  THIRD SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018 | | | | | |
| **Course Code: ME210** | | | | | |
| **Course Name: METALLURGYAND MATERIALS ENGINEERING (MC)** | | | | | |
| Max. Marks: 100 | | |  | Duration: 3 Hours | |
| **PART A** | | | | | |
|  | ***Answer any three questions, each carries10 marks.*** | | | | Marks |
| 1 | a) | Each Difference-1 mark, total 5 | | | (5) |
|  | b) | 1 mark each for the sketches with direction and plane | | | (5) |
| 2 | a) | Schmid’s law-1 mark, sketch – 1 mark, critical resolved shear stress-2 marks | | | (4) |
|  | b) | Equation-1 mark Relation between a and r-1 mark Final answer-1 marks | | | (3) |
|  | c) | Equation-1 mark Calculation-2 marks | | | (3) |
| 3 | a) | Equation-1 mark Calculation-4 marks Final answer-1 mark | | | (6) |
|  | b) | Statement-1 mark Derivation-3 marks | | | (4) |
| 4 | a) | Explanation of steps-2 marks each, 3 steps | | | (6) |
|  | b) | Each difference-1 mark | | | (4) |
| **PART B** | | | | | |
| ***Answer any three questions, each carries10 marks.*** | | | | | |
| 5 | a) | Diagram with % of carbon-5 marks, 3 reactions-3 marks, microstructure-2 marks | | | (10) |
| 6 | a) | Each difference- 1 mark | | | (4) |
|  | b) | Definition-2 marks Hume-Rothery’s rule- 4 marks | | | (6) |
| 7 | a) | Composition, microstructure, properties and applications- 2.5 marks each | | | (10) |
| 8 | a) | 2 Mechanism - 2 marks each,diagram – 1 mark each | | | (6) |
|  | b) | Each 1 mark | | | (2) |
|  | c) | Explanation-2 marks | | | (2) |
| **PART C** | | | | | |
| ***Answer any four questions, each carries10 marks.*** | | | | | |
| 9 | a) | Diagram-2 marks Mechanism-5 marks | | | (7) |
|  | b) | Each 1 mark | | | (3) |
| 10 | a) | Process-2 marks Significance-3 marks, Diagram- 2 marks | | | (7) |
|  | b) | Each 1.5 marks | | | (3) |
| 11 | a) | Definition-1 mark curve-3 marks explanation of stages-3 marks | | | (7) |
|  | b) | Definition-2 marks Application-1 mark | | | (3) |
| 12 | a) | Classification-2 marks Any 2 composites explanation-4 marks each | | | (10) |
| 13 | a) | Definition-1 mark , types-3 marks, 2 advantages-2 marks | | | (6) |
|  | b) | Description-4 marks | | | (4) |
| 14 | a) | Each 3 marks | | | (6) |
|  | b) | Explanation-2 marks 2 applications-2 marks | | | (4) |
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