

## APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

### Scheme for Valuation/Answer Key

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

**EIGHTH SEMESTER B.TECH DEGREE EXAMINATION, MAY 2019**

**Course Code: MP482**

**Course Name: PRODUCT DEVELOPMENT AND DESIGN**

Max. Marks: 100

Duration: 3 Hours

#### PART A

*Answer any three full questions, each carries 10 marks.*

Marks

- |   |  |      |
|---|--|------|
| 1 | Block Diagram -3 marks Design Morphology Definition-1 marks Phases-6 marks(Brief description of each)  | (10) |
| 2 | a) Classification like Consumer goods /Industrial goods or Durable goods/Non-Durable goods-5 marks   | (5)  |
|   | b) Any five reasons-5 marks  | (5)  |
| 3 | a) Diagram-1-mark Names of phase-3 marks   | (4)  |
|   | b) Steps -4 marks  | (4)  |
|   | c) Distinguish between Modular and Integrated Architecture – (2) marks   | (2)  |
| 4 | a) Need-2 marks Process-3 marks  | (5)  |
|   | b) Any factors explanation-5 marks(Product changes, Product variety, Component standardization, Product performance , Manufacturability, Product development management) | (5)  |

#### PART B

*Answer any three full questions, each carries 10 marks.*

- |   |   |      |
|---|---|------|
| 5 | Labour cost, material cost, expenses, overheads, direct and indirect expenses- Explanation-7 marks Examples-3 marks.                                    | (10) |
| 6 | a) Six factors like standardisation, interchangeability, modularisation, Accessibility, Functional packaging, Fault isolation etc-6 marks               | (6)  |
|   | b) Lines of maintenance-1 mark Types - marks  | (4)  |
| 7 | a) For a brief note on the need/function of value engineering-2 marks For a brief explanation on process of value engineering with a case study-3 marks | (5)  |
|   | b) Need for qualitative analysis  | (5)  |
| 8 | a) Any four benefits-4 marks  | (4)  |
|   | b) Classification like Primary, secondary and tertiary functions.   | (3)  |
|   | c) List the six phases-3 marks  | (3)  |

### PART C

*Answer any four full questions, each carries 10 marks.*

- 9 Any two techniques-5 marks each (10)
- 10 a) Definition of Creative Thinking - (1) marks (5)  
Brainstorming explanation -4 Marks
- b) Explanation of different aspects like shape, texture, colour, symmetry, surface finish-5 marks (5)
- 11 a) List any three ergonomic factors to be considered in designing i) control units -3 marks ii) display units-3 marks (6)
- b) Any four differences-4 marks (4)
- 12 a) Any four advantages-4 marks (4)
- b) Explanation of each steps in one or two sentences. (6)
- 13 Working-5 marks Sketch-3 marks Any two advantages and disadvantages-2 marks (10)
- 14 a) Definition-3 marks Illustration-2 marks (5)
- b) Explanation/definition of preparation in patents - (2.5) marks (5)  
Explanation/definition of preparation in IP ACTS - (2.5) Marks