

Ganpat University
M.Tech SEM I Mechanical Engineering (AMS)
CBCS Regular Examination Nov - Dec 2017
3ME102 Product Design

Duration: 3hr

Marks: 60

Instructions:

1. Assume suitable data if necessary.
2. Write your answer to the point and precisely.
3. Draw neat and clean sketch.

SECTION - 1

Q.1 Attempt Following Questions

- (a) Enlist the objective of value engineering and explain the various causes of unnecessary cost that leads to poor value. [05]
- (b) Explain the value engineering methodology and techniques using neat sketch. [05]

OR

Q.1 Attempt Following Questions

- (a) What is the concept of value? Explain nature and measurement of value. [05]
- (b) Describe with suitable sketches "When to apply value engineering". [05]

Q.2 Attempt Following Questions

- (a) State and explain salient DFM aspect any manufacturing processes. [05]
- (b) Discuss role of DFM in product specification and standardization. [05]

OR

Q.2 Attempt Following Questions

- (a) Define DFM. Explain DFMA shorten the design process using proper illustration. [05]
- (b) Explain DFM Method using flow chart. [05]

Q.3 Attempt Any Two

- (a) Discuss Layered manufacturing (LM) in detail. [05]
- (b) What do you mean by 3-Dimensional printing (3DP)? What are its applications? [05]

- (c) What is Laminated object manufacturing (LOM)? Explain in detail. [05]

SECTION – II

Q.4 Attempt Following Questions

- (a) What do you mean by ergonomics? Explain the role of ergonomics in product design with suitable illustrations. [05]
(b) Explain Product Strategies in details. [05]

OR

Q.4 Attempt Following Questions

- (a) Explain various points which are considered while analyzing a need and main purpose of need analysis. [05]
(b) Explain the basic rules for concept screening technique and brainstorming session. [05]

Q.5 Attempt Following Question

- (a) Explain various methods of increasing total profit regarding economic analysis of product design. [10]

OR

Q.5 Attempt Following Question

- (a) Explain the classification of information based on its reliability and usefulness. Also explain various sources of information which are very necessary in executing project work. [10]

Q.6 Attempt Following Question

- (a) Enlist the major guidelines in designing a product from an aesthetic view. Explain basic type of product forms. Also explain factors which are influenced in designing for appearance. [10]

END OF PAPER