

GANPAT UNIVERSITY
M.TECH. SEM- I (AMS) REGULAR EXAMINATION NOV-DEC 2016.
(3ME102) Product Design

MAX. TIME: 3 HRS

MAX. MARKS: 60

- Instructions:** (1) This Question paper has two sections. Attempt each section in separate answer book.
 (2) Figures on right indicate marks.
 (3) Be precise and to the point in answering the descriptive questions.

SECTION: I

- Q.1 (a) Write short note on 3S's related to product design. (05)
 (b) Explain essential factors considered for product design. (05)

OR

- Q.1 (a) Explain the characteristics of successful product development and also explain challenges faces while development of product. (05)
 (b) Explain selection criteria with Ashby Material selection chart. (05)

- Q.2 (a) Explain aesthetics and ergonomics consideration in product design. (05)
 (b) What is the concept of value? Explain nature and measurement of value. (05)

OR

- Q.2 (a) Explain the value engineering methodology and techniques using neat sketch. (05)
 (b) Discuss modern approaches to product design with proper example. (05)

- Q.3 Attempt any two. (10)
 (a) Explain the morphology of product design.
 (b) Explain the steps for detailed design phase in product design.
 (c) Write a short note on product life cycle.

SECTION: II

- Q.4 (a) Explain DFM Method using flow chart. (05)
 (b) What do you understand by DFA? State and explain general guide lines for DFA. (05)

OR

- Q.4 (a) Discuss role of DFM in product specification and standardization. (05)
 (b) Define DFM. Explain DFMA shorten the design process using proper illustration. (05)

- Q.5 (a) What is Rapid Prototyping? Discuss the advantages and applications of Rapid Prototyping. (05)
 (b) Explain Fused Deposition Modeling (FDM) with neat sketch. Also enlist their advantages and limitations (05)

OR

- Q.5 (a) Explain the principle of Rapid prototyping with neat sketch. Explain Stereo lithography (SLA). (05)
 (b) Enlist the goals of DFM. Also enlist the sources from which the information can be gathered for DFM. (05)

(P.T.O.)

Q.6 Attempt any two.

- (a) What do you mean by 3-Dimensional printing (3DP)? What are its applications?
- (b) Discuss Layered manufacturing (LM) in detail.
- (c) Explain Computer aided material and functional modeling in DFM.

-----END OF PAPER-----