

GANPAT UNIVERSITY
M. TECH SEM- II (AMT) MECHANICAL ENGINEERING
REGULAR EXAMINATION APRIL-JUNE 2016
3ME203: Product Design

[Time: 3 Hour]

[Total 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

Que. 1

- (A) Define product design. Explain the followings related to design and development of product. [5]
 (i) Design for X
 (ii) Quality Function Deployment
 (iii) Knowledge based Engineering
 (B) Explain the stages of product life cycle with neat sketch. [5]

OR

Que. 1

- (A) Explain the importance of duration and cost of product development in product development process. [5]
 (B) What is life cycle cost? Explain in detail. Also explain its limitations. [5]

Que. 2

- (A) Explain the importance of product planning? Explain product planning process in detail. [5]
 (B) Explain the channels of gathering information from customers for a new product development. [5]

OR

Que. 2

- (A) Differentiate target specification and final specification of product in detail. [5]
 (B) What is concept selection? Explain two stage technique for concept selection. [5]

Que. 3 **Attempt any two.**

- (A) Discuss the role of aesthetics in design and development of new product. [10]
 (B) Explain the approaches of break-even analysis related to economic analysis of new product design.
 (C) Explain AMF development process with neat sketch.

SECTION - II

Que. 4

- (A) Explain the value standards. [5]
 (B) Explain the different phases of value engineering job plan in brief. [5]

OR

Que. 4

- (A) Define Value, Value analysis and Value engineering. Discuss consideration of human aspect in value engineering. [5]
 (B) Explain questionnaires technique used in value analysis. [5]

Que. 5

- (A) Discuss design for assembly. [5]

- (B) What are the criteria for selection of a process for a given product? Explain briefly.

OR

Que. 5

- (A) Explain design guidelines for forgings. [5]
(B) What factors a design engineer should consider while designing a product? Explain in detail. [5]

Que. 6 Attempt any two.

[10]

- (A) Discuss the advantages, accuracy and economic considerations for rapid prototyping.
(B) Explain with neat sketch stereo lithography process for rapid prototyping in all aspect.
(C) What is prototyping? Explain its importance in context of product design.

*****END OF PAPER*****