

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech. (EE) (Sem.-7,8)**  
**PRODUCT DESIGN AND DEVELOPMENT**

Subject Code : BTME-614-18

M.Code : 90482

Date of Examination : 17-05-2023

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**1. Write briefly :**

- a) What do you mean by design by evolution?
- b) Enlist the factors that affect product design.
- c) What do you mean by simplification of product design?
- d) Discuss time to market strategy in product design.
- e) What do you mean by design for machining ease?
- f) Write safety considerations in product design.
- g) What do you mean by break even analysis?
- h) Define concurrent design.
- i) Write advantages of rapid prototyping.
- j) Discuss the role of process engineer in design for production.

## SECTION-B

2. Discuss the importance of process capability and tolerances in detailed design and assembly.
3. Discuss in detail the role of aesthetics in product design.
4. Explain in detail the reducibility requirements in the design of machine components.
5. Explain various rapid prototyping technologies.
6. Economic analysis is an important aspect in product design. Discuss.

## SECTION-C

7. Discuss in detail the primary design phases and flowcharting.
8. Write a note on following :
  - a) Forging design
  - b) Pressed component design
  - c) Casting design for economic molding
9. What do you mean by QFD? Discuss by taking an example.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**