

Roll No.

Total No. of Pages : 01

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M.Tech.(CAD/CAM) (E-V) (Sem.-3)
PRODUCT DESIGN & DEVELOPMENT

Subject Code : ME-521

M.Code : 23518

Time : 3 Hrs.

Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

1.
 - a) Discuss seven phases in morphology of design.
 - b) What is production-Consumption cycle? What is the purpose of value addition and information in production-Consumption cycle?
2. Differentiate between functional design and aesthetic design. Discuss the common functional design strategies used by product designers for engineering products.
3.
 - a) In a forging design, why intersection of cylinders at right angles and intersection of flat plate with cylinder are avoided?
 - b) What are the general producibility requirements that need to be taken care while designing for machining ease?
4. What is the approach to reliability-based design? What is the relationship between reliability and factor of safety? Derive a formula linking reliability and factor of safety.
5. Define value. What is the background of evolution of value engineering as a subject? What are the various steps of value analysis (VA) job plan?
6. What is meant by rapid prototyping? What are different methods of rapid prototyping? Explain through the sketches.
7. What is meant by concurrent design? How does concurrent design reduce time to market? Who are the members of the concurrent design team?
8. Write short notes on :
 - a) Economic Feasibility of design.
 - b) Production Consumption Cycle.
 - c) Role of Allowances and Tolerances in detailed design.
 - d) Rapid prototyping in Medical application.

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.