

Reg. No. :

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Question Paper Code:U2101

M.E. DEGREE EXAMINATION, APRIL 2024

Second Semester

21PCD201 – DESIGN FOR SUSTAINABILITY

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) (i) Explain Briefly about Design for Manufacturing CO1-U (10)
(ii) Explain how group technology is helpful in DFMA CO1-U (10)
Or
(b) (i) What are the major stages of engineering design? Discuss with a CO1-U (10)
suitable examples.
(ii) Explain different basic steps of material selection. CO1-U (10)
2. (a) Describe the need of pre welding and post welding operation and its CO2-App (20)
impact on the performance of welded component.
Or
(b) Discuss various design guidelines for selection of materials with CO2-App (20)
suitable examples.
3. (a) (i) Discuss Design recommendations for Rolled formed sections. CO1-U (10)
(ii) Explain in detail about the design for assembly. CO1-U (10)
Or
(b) (i) Explain about tube bending Process with neat sketch. CO1-U (10)
(ii) Elaborately explain the various welding processes for joining CO1-U (10)
metals permanently..
4. (a) (i) Discuss about Minimizing the number of Parts in an assembly. CO1-U (10)
(ii) Explain the characteristics and applications of assembly. CO1-U (10)
Or
(b) (i) Explain indexing mechanisms.. CO1-U (10)
(ii) Explain in detail about casting requiring special sand cores. CO1-U (10)

5. (a) (i) Discuss about the design guidelines for manual assembly. CO1-U (10)
(ii) Explain the Design for Assembly process with flow chart. CO1-U (10)
- Or
- (b) Elaborate the steps to be followed to apply DFA for automobile industry. CO1-U (20)