

College of Engineering, Pune-411005.
(An Autonomous Institute of Government of Maharashtra)
Department of Production Engineering and Workshop
END-SEMESTER EXAMINATION

Class : T. Y. B. Tech. Production S/W

Year : 2013– 2014

Subject : PRODUCT DESIGN AND MANUFACTURE (PE-461)

Time : 3 Hours

Max. Marks: 60

Instructions:

1. Solve *all* questions.
2. Figures to the right indicate full marks.
3. Draw neat self-explanatory sketches wherever required.
4. Use of pocket calculators is allowed.

- Q.1 a) Explain role of allowance, process capability, and tolerance in detailed design and assembly. 5
b) Write Short Notes on:
1) Planning for Consumption. 5
2) Planning for Retirement.
- Q.2 a) Discuss the importance of 'material toughness: Resilience and uniform strength' in product design. 5
b) Discuss in details about following considerations in Product design:
1) Lightness 5
2) Stability and weight
3) Speed
- Q.3 a) Discuss 'producibility requirements in the design of machine components'. 5
b) Discuss design considerations in 'Casting design'. 5
- Q.4 a) Discuss about the use of 'Expanded metals and wireforms' in product design. 5
b) Discuss about following important terms related to improve mechanical properties of Plastic:
1) Hardners 2) Elastomers 3) Fillers 4) Modifiers 5) Plasticizers
- Q.5 a) Explain the procedure of 'Value Analysis' in details. 5
b) Explain design requirements for 'Ease of machining.' 5
- Q.6 a) Discuss workplace layout considerations from Ergonomic considerations. 5
b) Discuss 'Siddal's classification of design approaches'. 5
