

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, April, 2017

Program Name: B.Tech Mechanical Engineering

Semester – 8th Semester

Course Name : Product Design & Development

Max. Marks : 100

Course Code : 50017697

Duration : 3 Hrs

No. of page/s:

Section A (5 questions of 4 Marks each)

1. Describe utility of CAD, CAM, CAE. Describe usability in product design with examples.
2. Describe Ergonomics & their application in Product Design. Describe Cognitive Ergonomics.
3. Describe concept of Mass Customization with examples. Show the linkages of Product Design & Mass customization.
4. Describe PLM. Show different stages of PLM.
5. Mention founders name of Robust Design. Differentiate Robust Design process with Product Design & Development.

Section B (5 Questions of 8 marks each)

6. Describe the internal & external noises in Taguchi Method. Describe Taguchi method.
7. Describe the detail software for CAD, CAM, CAE and the process of contribution.
8. Describe Anthropometry. Illustrate its benefit for product design. Describe utility of Anthropometry in work space design.
9. Describe Value Engineering & Value Analysis. Describe the difference. Differentiate Value from cost. Describe difference of Value Engineering with Industrial Design process.
10. Describe difference between mass customization & mass production. Illustrate with examples.

Section C (Attempt 2 Question 20 Marks each)

11. Describe design process steps for a mobile cover/pouch. Draw concepts and 5 benefits of the same. Describe 5 difficulties found in mobile cover of presently available in market.
12. Describe people centric design. Give 5 examples where people face difficulty in using or understanding the product. Illustrate 5 solutions for the faced difficulty.

OR

13. Describe sustainable design. Show some examples of non- sustainable products. show some sustainable design with sketch & describe the benefit of being sustainable.