BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY

Question Bank for UT 2 Sub- PDD (315367) Course- ME5K

Chapter No. 3 Industrial Design

Questions for 2 Marks

1. List design principles for manufacturability (DFM principles)
2. Write any four process-specific DFM tips
3. List factors affecting DFM (Any4)
4. Compare Impact overview without DFM & with DFM
5. Define Product Life Cycle
6. Stages of the Product Life Cycle
7. State importance of Product Life Cycle

Questions for 4 Marks

1. Explain any two design principles for manufacturability with example
2. Explain main factors affecting DFM in a real-world manufacturing
3. How does DFM help in reducing production cost and time?
4. Give an example of how poor DFM can lead to increased manufacturing issues
5. Define Product Life Cycle and explain its importance in industrial design
6. List and describes the stages of the product life cycle with suitable characteristics
7. Using an example of a motorcycle or electric vehicle explain how to determine its current stage in the product life cycle

Chapter No. 4 Value Engineering

Questions for 2 Marks

1. Define Value Engineering (VE). List any two objective
2. Draw Value Engineering Job Plan (VEJP)
3. List method of identify problems in a product or process for value engineering
4. Write Challenges & Limitations of Value Engineering
5. Define Quality Function Deployment (QFD)
6. Define Voice of Customer (VOC). How is VOC collected
7. State what do the symbols used in QFD represent?
8. Draw structure of the House of Quality
9. List advantage & disadvantages of QFD
10. Define House of Quality (HoQ)
11. List advantage & disadvantages of House of Quality (HoQ)
12. Any two applications of QFD & HoQ

Questions for 4 Marks

1. Explain steps involved in the value engineering process
2. Explain the role of creative thinking in value engineering
3. What is the Value Engineering Job Plan (VEJP), List its phases
4. Describe any two real-world examples where Value Engineering improved a product

5. Explain the process of (QFD) in product development
6. What is VOC analysis and how does it contribute to QFD
7. Explain the Quality Relationship Matrix in a QFD with a brief example
8. Describe the roof ranking & body ranking in QFD and its purpose
9. Explain how does the House of Quality link customer complaints to technical requirements
10. What are the main components of the House of Quality diagram? **OR** Explain step by step construction of House of Quality.
11. Give an example of how a company might use the House of Quality to improve a product
12. What are the benefits of using the House of Quality in the early stages of product design

Chapter No. 5 Rapid Prototyping & Patent Filing

Questions for 2 Marks

1. Define Rapid Prototyping
2. Compare Traditional vs. Rapid Prototyping
3. Write advantage of using rapid prototyping over traditional methods **OR** Write advantage & disadvantages of rapid prototyping
4. Describe the "Proof of Concept" prototype with an example
5. Describe the "Look Like" prototype and where it is used
6. Describe the "Works Like" prototype. How it is different from the others
7. Define the purpose of the Prototype
8. Define patent. Why it is important
9. What Right do patents provide?
10. Define between Patent, Trademark and Copyright
11. Give an example of a patented product and explain how the patent added value to it

Questions for 4 Marks

1. Explain the basic principles of rapid prototyping (Any 4)
2. Explain types of rapid prototyping technologies
3. List and explain the types of rapid prototyping methods (Any2)
4. Explain construction and working of Fused Deposition Modelling (FDM)
5. Describe the Stereo lithography (SLA) process. How it is used in prototyping
6. Explain the Selective Laser Sintering (SLS) method with a diagram or flow.
7. Compare FDM, SLA and SLS
8. Explain the steps involved in planning for prototyping
9. Which factors are considered while creating a schedule for procurement, production and testing?
10. Describe "level of approximation" in prototype planning
11. Explain why it is important to have an experimental plan for prototyping
12. Explain criteria that must be fulfilled to obtain a patent
13. Outline the steps involved in the patent filing process in India or globally