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Total No. of Pages: 02

Total No. of Questions: 08

M. Tech. (Sem.- 3rd)

PRODUCT DESIGN AND DEVELOPMENT

Subject Code: PE-524

Paper ID: [E0459]

Time: 3 Hrs.

Max. Marks: 100

INSTRUCTIONS TO CANDIDATE:

- 1. Attempt any five questions out of eight questions.**
- 2. All questions carry equal marks**

Q.1. a) Enumerate the various factors that are required in an effective and good product design. Discuss the term, physical realizability in the content of engineering product designing.
b) For a good product design, financial feasibility and economic worth whileness are important .What are these terms and how are they different from each other. **(10x2=20)**

Q.2. a) The evolutionary design principle results in a very crude and cumber .some design process comment on the statement.
b) Discuss the main ergonomic considerations in a good product design. **(10x2=20)**

Q.3. a) In the content of visual designing, what does the term, 'value' mean? Discuss the role and es. Discuss the three main concepts of the unity principle. **(10x2=20)**

Q.4. a) What is a colour circle or colour wheel? Explain its role in product designing.
b) Colour detection by the viewer /user depends upon three main factors viz. nature of light falling on the object, nature of the object, and viewer's visual characteristics. Explain the role of the ~~(10x2=20)~~ **(10x2=20)** (with examples) in colour detection.

Q.5 a) Packaging generally includes three levels (primary package, secondary package, and transportation package).Explain the role of each level? **(10)**
b) What are the main functions to be performed? by a good package? Explain it detail. **(10)**

Q.6. Discuss the main features, characteristics and applications of the following packaging strategies:

- a) Changing the package
- b) Designing a reuse package
- c) Multiple packaging
- d) Packaging the product line

(5x4=20)

Q.7. a) What is value engineering? Explain its role in product design and development.

b) What are the different types of values? Discuss with Examples.

(10x2=20)

Q.8. a) Explain the use of FAST diagram in value engineering. What are its advantages?

b) Explain the steps in the matrix methodology of value engineering. What are the main advantages and limitations of this technique?

(10x2=20)

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