UPES
UNIVERSITY WITH A PURPOSE

Course: B.Tech Mechanical

Semester: 8th

Subject: Product Design & Development (MHEG372)

Max Marks: 100 **Time: 3:00 HRS**

Section-A, True/False (6*5=30)

1. Middle majority customers buy during the maturity stage of the product life cycle.
2. Reducing the expenditures and milking the brand become marketing objectives during the maturity stage of the product life cycle.
3. Selective distribution is a characteristic of the introduction stage of the Product Life Cycle.
4. In the growth stage of the Product Life Cycle, cost-plus pricing is used.
5. The purpose of idea screening is to generate a large number of ideas from which new products will be drawn.
6. One of the challenges presented by the product life cycle for a product is that of new-product development.

Section-B (5*10=50)

7. List 10 reasons why reducing the number of parts in a product might reduce production costs. Also list some reasons why costs might increase. (10)
8. List some firms that you feel have a strong corporate identity. What aspects of their products helped to develop this identity? (10)
9. Choose a product that continually annoys you. Identify the needs the developers of this product missed. Why do you think these needs were not met? Do you think the developers deliberately ignored these needs? (10)
10. List and briefly define the stages of the new-product development process. (10)
11. Identify and briefly characterize the five stages of the product life cycle. (10)

OR

List and briefly discuss the sources of new-product ideas. (10)

Section C (1*20 = 20)

12. **Case Study**: The video recorder wars: The winning formula

A battle took place in the mid 1970s between manufacturers of video cassettes and their associated players. Although Philips was first to market with its Video Cassette Recording system released in 1972, Sony, as with its Walkman concept, was first to really attract the market with its *Betamax* video format released in 1975. It quickly gained market dominance until challenged by JVC's *VHS*. These two formats were joined a year later by the Philips *V2000*; all of these system being incompatible with each other. The Philips machine despite having several superior features never really gained significant market share - not all of the superior features were offered on the cheaper Philips models, which also suffered from poor video quality and a lack of mechanical reliability. For all these reasons the format never gained substantial market share and was withdrawn in 1985, leaving the Sony and JVC to battle it out for video supremacy. Sony was confident that its superior performance and high market share would see it defeat the new JVC upstart, but it made the cardinal marketing blunder of not responding to the needs of its potential customers. Although consumers were impressed with Sony's marketing and the quality of its players, they wanted something quite different. Sony initially restricted the recording time of its player to one hour; suitable for television programmes, but not for the recording of films which formed the basis of a growing video rental market. Movie and video studios turned their backs on Sony and JVC were able to offer by far the largest range of rental titles on its 'Long Play' system. In addition, consumers wanted an affordable video player. JVC had made the decisive strategic move of licensing its technology to a range of electronic manufacturers; competition between which kept the price of VHS recorders well below that of Sony's machines. Despite the perceived quality advantage of the Sony, demand was price sensitive and by 1981, the market share held by *Betamax* tapes had fallen to below 25%. In 1988, Sony began to market its own *VHS* machines and at that point it was evident that the *Betamax* format was dead. In recent years, both Betamax and VHS have been replaced by DVDs. The last Sony *Betamax* machine was manufactured in 2002 and the last dedicated JVC *VHS* unit was produced in 2007.

Answer the following questions:

A. Define the following terms:
- Market share
- Licensing

B. Explain the importance of research and development in the process of new product development.

C. Analyse the relationship between the product life cycle and the marketing mix.

OR

Gibson Guitar company was in trouble. Gibson, perceived to be a high-quality but expensive electric guitar company (with models from $1,300 to $4,400), was losing market share to rival Fender Guitar company. Fender had expensive models in its prestigious Stratocaster line but had recently established a budget line (models for the beginning guitar player) under the brand name *Squire* by Fender. The *Squire* models began at $150 and ranged to $350. Research showed that players who began with *Squire* often upgraded to Stratocasters as they gained experience and interest. Gibson now has the opportunity to purchase Epiphone Guitar company and use their line of low- to mid-price guitars ($300-$700) to counter Fender's strategy for first-time guitar players. Your job as marketing executive for Gibson is to recommend a new-product strategy for Gibson. Consider which phases of the new-product development process would apply and suggest a course of action for Gibson. Be sure to explain your decision.