Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME- SEMESTER II– EXAMINATION – SUMMER 2015

Subject Code: 2720915 **Date: 03/06/2015**

Subject Name: PRODUCT DESIGN

Time: 2:30 PM – 5:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Discuss six phases of generic product development process.	**07**
	(b)	Discuss the challenges of product development.	**07**
Q.2	**(a)**	Discuss five step concept generation method with reference to product development.	**07**
	(b)	Discuss the AMF Bowlingôs standard product development process.	**07**
		OR	
	(b)	ñAMF choose to organize its product development staff in matrix structureò support the statement with appropriate explanation.	**07**
Q.3	**(a)**	Discuss five step product planning process.	**07**
	(b)	Briefly discuss various methods used by product development teams for choosing a concept out of the various alternatives.	**07**
		OR	
Q.3	**(a)**	Discuss the step ñGathering of raw data from the customersò with reference to identification of customer needs.	**07**
	(b)	Discuss six step concept screening process.	**07**
Q.4	**(a)**	Define product architecture. Discuss the various types of modular architecture.	**07**
	(b)	Discuss creation of rough geometric layout with reference to product architecture giving suitable example.	**07**
		OR	
Q.4	**(a)**	Define industrial design and discuss five critical goals that industrial designers can help a team to achieve in new product development.	**07**
	(b)	Discuss ergonomics needs with reference to industrial design giving suitable example.	**07**
Q.5	**(a)**	Discuss types of prototypes.	**07**
	(b)	Discuss sequential, parallel and coupled tasks with reference to project.	**07**
		OR	
Q.5	**(a)**	Enlist four steps of economic analysis of a product development project. Discuss any one in detail.	**07**

(b) Following table shows time for each activity needed to complete the project, the normal time, the shortest time in which the activity can be completed of a building contract. Draw the network diagram. Calculate normal and minimum duration of the project. Show the critical path. **07**

Activity	Normal time (in Days)	Shortest time (in Days)
1-2	6	4
1-3	8	4
1-4	5	3
2-4	3	3
2-5	5	3
3-6	12	8
4-6	8	5
5-6	6	6

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