

GUJARAT TECHNOLOGICAL UNIVERSITY
Diploma Engineering Semester –VII Examination Dec. - 2011

Subject code: 372301

Date: 20/12/2011

Subject Name: Plastic Product Design

Time: 02.30 pm – 05.00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. English version is considered Authentic.

- Q.1** (a) What is product design ? Explain various factors affecting product design. **07**
- (b) Describe general concepts of material selection criteria with respect to plastic product design. **07**
- Q.2** (a) Describe salient features of different processes with respect to plastic product design. **07**
- (b) Explain general concept of process selection criteria in plastic product design and discuss any one plastic process with respect to product design. **07**
- OR**
- (b) List and explain various short term and long term properties as material selection guide for plastic product design. **07**
- Q.3** (a) List various steps considered in preliminary product design of plastics products. **07**
- (b) State general design considerations for use of undercuts as product application enhancement. **07**
- OR**
- Q.3** (a) Give general design considerations related to wall thickness in plastic product design. **07**
- (b) List various features used for reinforcement in plastic product design. Describe general design considerations for any one of that. **07**
- Q.4** (a) List various specialized properties required in products for variety of applications and suggest suitable plastics materials for each one of the specialized properties. **07**
- (b) Discuss various specifications of any one plastics processing machine of your choice that would affect product design. **07**
- OR**
- Q.4** (a) Write one or more specialized properties and corresponding suitable plastics materials required for any seven of following product/ applications. **07**
- (i) Over head water tank, (ii) packaged food pouch, (iii) fry pan coating, (iv) gear, (v) moulded furniture, (vi) chemical container, (vii) electric switch, (viii) underground drainage pipe, (ix) soft drink beverage bottle

(b) Discuss various specifications of suitable processing machine that you would consider in designing of a plastics container of 20 litre volume. **07**

Q.5 Describe detailed case study for procedure of designing any industrial product of your choice. **14**

OR

Q.5 Describe detailed case study for procedure of designing any house hold product of your choice. **14**
