

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – SUMMER • 2014****Subject Code: 163602****Date: 26-05-2014****Subject Name: Compounding and Processing Of Plastics and Rubber-I****Time: 10:30 am - 01:00 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) Explain the extrusion process with well-labeled diagram. **07**
 (b) What is calendaring? Explain “L” shape calendar and inverted “L” shape calendar with suitable diagram. **07**
- Q.2** (a) What is thermoforming? Explain the pressure forming and vacuum forming. **07**
 (b) What is compounding? Explain the mixing theory of compounding. **07**
- OR**
- (b) Define and explain the following terms:
 1. Masterbatch **04**
 2. Die swelling **03**
- Q.3** (a) What is filler? Explain the different types of fillers with its function. **07**
 (b) Explain the extrusion process of pipe and tubing. **07**
- OR**
- Q.3** (a) What is processing aids? Explain its mechanism and action during processing of polymers. **07**
 (b) Write short notes on antistatic additives and flame-retardants. **07**
- Q.4** (a) Explain the extrusion process for films. **07**
 (b) Define paint? Explain the different ingredients of paint. **07**
- OR**
- Q.4** (a) Write a short note on:
 1. % volume solid of paint film **02**
 2. Coverage rate of paint film **02**
 3. Pigment volume concentration **03**
 (b) What is pigment? Explain the manufacturing, properties and application of titanium dioxide. **07**
- Q.5** (a) Explain the working and advantages of high-speed mixer. **07**
 (b) Explain different problems occur in extrusion process with its remedies. **07**
- OR**
- Q.5** (a) Explain black pigment with its properties and application. **07**
 (b) What is rheology? Explain the importance of rheology during processing. **07**
