

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 2018

Subject Code: 2163606

Date: 08/05/2018

Subject Name: Compounding & Processing of Plastics & Rubbers-II

Time: 10:30 AM to 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) Write classification of Poly Blends. **03**
 - (b) Write short note on microwave curing. **04**
 - (c) Discuss in detailed about the multiphase polymer system?
Discuss in detailed with examples about the multiphase polymer **07**
- Q.2**
- (a) Write difference between composites and nanocomposites. **03**
 - (b) Write short note on Electroplating. **04**
 - (c) Write a detailed note with flow diagram and objective for the preparation of any ternary nanocomposites by using nanoclay as filler. **07**

OR

- (c) Discuss the role of polymeric modifier for achieving improvement in the impact strength, modulus and chemical resistance of the polymer system **07**
- Q.3**
- (a) Differentiate between Polymer blend and alloys. **03**
 - (b) List the ingredients used in compounding with defining their respective roles. **04**
 - (c) Explain methodology for the fabrication of thermoset polymer based composites and nanocomposites. **07**

OR

- Q.3**
- (a) Write a note on applications of Poly blends polymers. **03**
 - (b) How can improve thermal stability of heat sensitive polymer? **04**
 - (c) Write notes on: Matrix, Dispersed phase, Reinforcing agent, Toughened plastic **07**
- Q.4**
- (a) Write a note on metallization. **03**
 - (b) Write a note on: (a) Two-roll mill (b) Twin screw extruder **04**
 - (c) Write methodology and purpose of preparation PVC/CaCO₃ nanocomposites and advantages of using nano-sized CaCO₃. **07**

OR

- Q.4**
- (a) How barrier properties can be improved? **03**
 - (b) Discuss importance of Polymer rheology in processing and compounding. **04**
 - (c) Explain different methods for the preparation of polymer nanocomposites.
Discuss advantages and disadvantages of methods **07**
- Q.5**
- (a) Write major applications of nanocomposites. **03**
 - (b) Explain any one method for the preparation of rubber nanocomposites. **04**
 - (c) Write a detailed note on PC/ABS blends with preparation technique and their applications. **07**

OR

- Q.5**
- (a) Write a note on commercial polymer blends. **03**
 - (b) Polymers are having brittle nature at room temperature, suggest your views to achieve supper-tough-high modulus polymer. **04**
 - (c) Write Detailed note on RTM, DMC and SMC with examples and application **07**
