

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER – • EXAMINATION – SUMMER-2017

Subject Code:3332304**Date:05/05/2017****Subject Name: Plastic Materials-I****Time:2;30 PM TO 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.
4. Use of programmable & Communication aids are strictly prohibited.
5. Use of only simple calculator is permitted in Mathematics.
6. English version is authentic.

- Q.1** Answer any seven out of ten. **14**
1. Define thermoplastic materials and write one example.
 2. Define thermosetting plastic materials and write one example.
 3. Write fullform of PET with one application.
 4. Write fullform of PC with one application.
 5. Write fullform of PES with one application.
 6. Write fullform of PPS with one application.
 7. Write fullform of PEEK with one application.
 8. Write fullform of LLDPE with one application.
 9. Write fullform of UF with one application.
 10. Write one example of Amorphous and Crystalline plastic material.
- Q.2** (a) Explain the types of flow. **03**
- OR
- (a) Describe Maxwell's model with diagram. **03**
- (b) Draw and Give example of Dilatants and bingham fluids. **03**
- OR
- (b) Define Newtonian and Non Newtonian flow. Which flow is exhibited by plastic material. **03**
- (c) Draw chemical structure and write five applications of PE. **04**
- OR
- (c) Draw chemical structure and write five applications of PVC. **04**
- (d) Draw chemical structure and write five applications of PP. **04**
- OR
- (d) Draw chemical structure and write five applications of PS. **04**
- Q.3** (a) Write fullform of HIPS with three characteristic properties. **03**
- OR
- (a) Write fullform of SAN with three characteristic properties. **03**
- (b) Write fullform of PF with three characteristic properties. **03**
- OR
- (b) Write fullform of MF with three characteristic properties. **03**
- (c) Draw chemical structure of PTFE and write its two properties and uses. **04**
- OR
- (c) List five High performance plastic with one application of each. **04**
- (d) Write fullform of PPO with its characteristic properties and uses. **04**
- OR

- (d) Write any Ten Plastic materials used in injection molding process. **04**
- Q.4** (a) What are additives? List various types of additives. **03**
OR
(a) Describe the function of any four additives. **03**
(b) What is compounding and state its importance. **04**
OR
(b) Arrange NYLON, LDPE, HDPE, PEEK in its increasing order of its Tg value. **04**
(c) Explain banbury mixer with diagram. **07**
- Q.5** (a) Write fullform of PUR and ABS with two applications for each. **04**
(b) Write fullform of POM and DAP with two applications for each. **04**
(c) Write characteristic properties of Epoxy and silicones. **03**
(d) List three polyamides with two application. **03**
