

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 2018****Subject Code:2162310****Date:08/05/2018****Subject Name:Plastic Packaging Technology****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.

- Q1. a.** What is Packaging? **03**  
**b.** Difference between Primary and Secondary Packaging **04**  
**c.** Which Plastic materials are preferred for film application? Highlight advantages and limitations of each **07**
- Q2. a.** What is purpose of Labelling? **03**  
**b.** List features of controlled atmosphere packaging **04**  
**c.** Discuss in detail the functions of a Package. **07**
- OR**
- c.** Give the properties and applications of LDPE, HDPE and LLDPE used as plastics packaging material. **07**
- Q3. a.** What are the essential features of good closures? **03**  
**b.** Define: cohesive strength, delamination, dimensional stability, barrier properties **04**  
**c.** Give properties and applications of Polystyrene (PS) and Polyamides (Nylons) used in packaging. **07**
- OR**
- Q3. a.** State the changes brought by moisture on food products **03**  
**b.** What is the role of nanotechnology in packaging? **04**  
**c.** Explain flexographic printing and rotogravure printing with diagram. **07**
- Q4. a.** Mechanical Hazards in Packaging **03**  
**b.** What are barrier properties? Explain procedure to determine it for the plastic film **04**  
**c.** Describe Pad printing process with neat diagram and also give their applications. **07**
- OR**
- Q4.a.** What are essentials in a consumer package? **03**  
**b.** Describe the various mechanical tests on packages **04**  
**c.** Explain Injection blow molding (IBM) process with neat diagram. Give difference between IBM and EBM **07**
- Q5.a.** What are colligative properties? **03**  
**b.** Give properties and applications of Polypropylene (PP) and Polyvinyl chloride (PVC) used in packaging. **04**  
**c.** Define surface treatment. Why polyolefins are irrespective with ink? List the surface treatment process carried out on plastic packaging materials **07**
- OR**
- Q5.a.** Define coefficient of friction. **03**  
**b.** Write a note on: Tear strength. **04**  
**c.** Write down the advantages of packaging **07**