

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII(NEW) EXAMINATION – SUMMER 2019****Subject Code:2171404****Date:27/05/2019****Subject Name:Food Packaging Technology****Time:02:30 PM TO 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.

- Q.1** (a) What are the precautions to be taken during pulping to form good quality packaging paper? **03**
- (b) Highlight on Smart package. **04**
- (c) Define Half Value Period. Explain HVP application in estimation of packaged food shelf life. **07**
- Q.2** (a) How type of packaging affected by market location? **03**
- (b) “Packaging means value for all the stake holders.” Justify? **04**
- (c) What are the expectations from an ideal packaging? **07**
- OR**
- (c) Prove that for spherical fruits porosity is independent of diameter of fruits provided fruits touch all the sides of the CFB box. **07**
- Q.3** (a) Write down to the steps to produce TFS? **03**
- (b) What are researchable issues in Glass? **04**
- (c) What are the deterioration taking places in bakery products? Suggest suitable packaging material for the same. **07**
- OR**
- Q.3** (a) What are the limitations of edible package? **03**
- (b) What are different coatings done on the glass? How it helps in packaging? **04**
- (c) Explain briefly factors affecting on the shelf life of ready to eat extruded food products. **07**
- Q.4** (a) Compare Aseptic Packaging with Canning. **03**
- (b) Highlight on the functions of followings. **04**
- i) Nucleated material in C-PET manufacturing
- ii) Soda ash and Alumina in glass manufacturing
- iii) Epoxy phenolic lacquering in tin plate
- iv) Zinc addition in Aluminum containers
- (c) Classify the food products container filling systems. Explain the working of low vacuum filling system for liquid products with a well labeled sketch. **07**

OR

- Q.4** (a) Enlist the advantages and limitations of Aluminum containers in food packaging. **03**
- (b) Differentiate between Polyethylene and Polypropylene with respect to food packaging. **04**
- (c) What are different types of labels used in food industries? List out the factors affecting in selection of labeling machine. State the purposes of nutritional labeling on food packages. **07**
- Q.5** (a) Name any two active components used in the following active packaging films. **03**
- i) Antimicrobial films
- ii) Moisture and Relative Humidity controller films
- iii) Ethylene scavenger films
- (b) Define Corrugated fiber paperboard. What are its components? Write the function of each component. **04**
- (c) Elaborate the term 'PET' (Plastic Grade). Discuss the properties, applications and limitations of PET with respect to food packaging. **07**
- OR**
- Q.5** (a) Briefly explain the mechanisms for edible film formation. **03**
- (b) Write tear test behavior in the following plastic films. **04**
- i) PE
- ii) PP
- iii) BOPP
- iv) Cellophane
- (c) Define Blister packaging. What are different types of blister packaging? State the advantages and limitations of blister packaging. **07**
