

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BACHELOR OF ENGINEERING – SEMESTER 6 – EXAMINATION – SUMMER 2026**

**Subject Code: 3165101**

**Date: 08/06/2026**

**Subject Name: FOOD PACKAGING ENGINEERING**

**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.**
- 4. Simple and non-programmable scientific calculators are allowed.**

- Q.1** (a) Define food packaging. Discuss the important functions of packaging in food industry. **03**  
(b) Classify packaging materials with suitable examples. **04**  
(c) Explain different package forms such as pouches, tubes, and cartons. **07**
- Q.2** (a) List the advantages and disadvantages of rigid packaging materials. **03**  
(b) Explain the role of corrugated fibreboard cartons in food packaging. **04**  
(c) Discuss the properties, advantages, and limitations of glass as a packaging material. **07**
- OR
- Q.2** (c) Explain the properties and applications of aluminium foil in food packaging. **07**
- Q.3** (a) Explain the criteria for selecting packaging materials for dairy products. **03**  
(b) Discuss packaging requirements for carbonated beverages and fruit juices. **04**  
(c) Write short notes on packaging of frozen vegetables and confectionery products. **07**
- OR
- Q.3** (a) Discuss the packaging requirements of meat and fish products. **03**  
(b) Explain packaging considerations for tea, coffee, and alcoholic beverages. **04**  
(c) Write a note on storage and handling of packaging material. **07**
- Q.4** (a) Describe the working of form-fill-seal machines. **03**  
(b) Write a note on cushioning materials and their properties. **04**  
(c) Explain the importance of nutritional labelling in packaged foods. **07**
- OR
- Q.4** (a) Describe piston-type filling systems used in packaging. **03**  
(b) Explain the testing and identification of packaging materials. **04**  
(c) Write short notes on packaging design considerations. **07**
- Q.5** (a) List the factors controlling shelf life of packaged food products. **03**  
(b) Explain the concept of modified atmosphere packaging (MAP). **04**  
(c) Discuss recent trends in food packaging such as edible packaging and RFID indicators. **07**

OR

**Q.5**

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|--------------------------------------------------------------------------------|-----------|
| <b>(a)</b> Explain shelf-life estimation in dehydrated food products.          | <b>03</b> |
| <b>(b)</b> Write a short note on active packaging.                             | <b>04</b> |
| <b>(c)</b> Discuss the role of packaging in extending the shelf life of foods. | <b>07</b> |

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