

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2022****Subject Code:3162310****Date:08/06/2022****Subject Name:Plastics 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.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

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|------------|--|-----------|
| Q.1 | (a) What are the various types of Packaging? Discuss with examples | 03 |
| | (b) Enumerate the principles of Packaging | 04 |
| | (c) What is Packaging? Give advantages and limitations of plastics in packaging. | 07 |
| Q.2 | (a) Discuss features of a effective Design | 03 |
| | (b) Difference between Primary and Secondary Packaging | 04 |
| | (c) Explain the main hazards to which a transit package is exposed in (a) loading and unloading (b) warehousing (c) road transport | 07 |
| | OR | |
| | (c) Describe about Temper Evident packaging and child resistant packaging with examples | 07 |
| Q.3 | (a) Under what circumstances would you select MAP and CAP packaging | 03 |
| | (b) Enumerate the features contributing to package as silent salesman. | 04 |
| | (c) State the importance of Bag- in- Box concept on packaging. Discuss advantages of Bag-in-Box concept | 07 |
| | OR | |
| Q.3 | (a) What is purpose of Labelling? | 03 |
| | (b) I want to select a material for packing of pesticide products. What should be the selection criteria? | 04 |
| | (c) Describe the various mechanical tests on packages | 07 |
| Q.4 | (a) What are the essential features of good closures | 03 |
| | (b) What is Blister packaging? Explain materials used for blister packaging along with its applications | 04 |
| | (c) Answer the following: | 07 |
| | 1. LLDPE film needs much higher energy to get punctured when compared to LDPE. True/False | |
| | 2. PP must be made into a film by a process that cools the films rapidly or it will be brittle. True/False. | |
| | 3. Bursting strength is related to _____ of material. (Hardness/Toughness). | |
| | 4. _____ Packing modifies the atmosphere surrounding the food by removing oxygen and extending the shelf life. | |
| | 5. Containers for milk, detergent and shampoo are made from which material? PVC/HDPE. | |
| | 6. Shelf Life is defined as _____ | |
| | 7. For Pharmaceutical drugs like tablets, _____ packaging is most preferred? Skin/blister | |

OR

- Q.4** (a) Explain Shrink wrap packaging. **03**
(b) Discuss selection of film for edible oil packaging. Justify the selection **04**
(c) Explain about Requirements of Glass packaging and their advantages and disadvantages **07**

- Q.5** (a) What is the difference between skin packaging and blister packaging. **03**
(b) What is Retort Package? Discuss **04**
(c) What are the climatic factors that may cause packaging product to deteriorate? **07**

OR

- Q.5** (a) Give properties and applications of PS in packaging **03**
(b) Discuss the role of colour as a important factor in design of a package **04**
(c) A drug manufacturer proposes to: **07**
[a] Fill 250 ml energy tonic for the children in the age group of 5-10 years in an attractive glass container.
[b] the product is sensitive to oxygen and water vapour
Describe with a sketch a suitable container for the above, indicating the type of closure , sealing and label layout.
