Seat No.: _____ **Enrolment No. _____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – WINTER • 2014

Subject Code: 171401 **Date: 25-11-2014**

Subject Name: Food Packaging Technology

Time: 10:30 am - 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.**

Q.1	**a**	Write short notes as required.	
		i. Elaborate PAISE and Explain?	2
		ii. Packaging is scientific and artistic segment of marketing?	5
	b	Answer the following in detail	
		i. How market affects packaging requirement?	2
		ii. Requirements of ideal packaging?	5
Q.2	**a**	Prove that increase in the size of the spherical fruits will not affect the porosity of the packing in CFB boxes if fruit touches all the sides of the box?	7
	b	Differentiate the packing and packaging with suitable examples.	7
		OR	
	b	Discuss the guidelines given by FSSA for the labels on the packed food.	7
Q.3	**a i.**	"Do packaging enhancement of cost of the product?" Justify your answer.	3
	a ii.	What do you mean by edible packaging?	4
	b	What causes sugar bloom? How it can be eliminated? Discuss the role of packaging in it.	7
		OR	
Q.3	**a i.**	Why colored glasses are not preferred for the milk and other food material?	3
	a ii.	What is "Series 5000" in packaging materials?	4
	b	What is fat bloom? How it can be control? Discuss the role of packaging in it.	7
Q.4	**a**	Compare the following packaging materials (i) Plastic, (ii) glass, (iii) multilayer paper and (iv) metal on the following properties (a) Specific manufacturing design, (b) Odor barrier; (c) Weight per unit contents and (d) environment friendliness.	7
	b	A cylinder (60 cm in diameter and 90 cm in height) used for packing the 1 quintal bulk milk powder in general. Due to error in the balance 98 kg milk powder is filled in the cylinder. Calculate percent change in the porosity if true density of milk powder is 1050 kg/m^3. What are probable hazards it may cause?	7
		OR	
Q.4	**a**	Compare the following packaging materials (i) Plastic, (ii) glass, (iii) multilayer paper and (iv) metal on the following properties (a) product compatibility, (b) cost; (c) printing and (d) temper proof.	7
	b	Fruit powder packed in a can (dia. 12 cm, height 20 cm and capacity 1000 g) and tin (square section 30 cm each, height 50 cm and capacity 22 kg). If the true density of powder is 1200 kg/cubic meter, calculate which container has more porosity and how much percentage? Also discuss possible hazards for the same.	7
Q.5	**a**	How shelf life of packaged food is estimated by use of Half value Period Method?	7
	b	Discuss factors deteriorating the quality of the following during storage and suggest suitable packaging material for them:	7

i. Salty, fat rich, crisp bake products
ii. Deep fried snax

OR

Q.5	**a**	With line diagram explain the working of form-fill and seal machine. What are its limitations?	7
	b	Discuss factors deteriorating the quality of the following during storage and suggest suitable packaging material for them: i. Juicy sweet spherical balls ii. Confectionery lozenges	7

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