Department of Biochemical Engineering & Biotechnology

Biotechnology in Food Processing (BEL 726)
Major Test (II semester 2006-2007)

Date: 08-05-2007
Time: 8 AM–10AM
Venue: I 336
Marks: 50

1 a) Name one:
- i) Oxic food grade yeast (½)
- ii) Anoxic food grade yeast (½)
- iii) SCO producing yeast (½)

b) Name one:
- i) Red pigment producing yeast (½)
- ii) Red beet juice fermenting yeast (½)
- iii) Beta carotene pigment producing microorganism (½)

c) Name one:
- i) Diacetyl producing bacteria (½)
- ii) Monosodium glutamate producing bacteria (½)
- iii) Biopreservative of food (½)

d) Classify external and internal influencial factors in food quality. (3½)

2 a) What do you understand by freeze burning of food? (2)
b) What is a 'ribotyping' in terms of food spoilage? (2)
c) Name five uses of gluten. (2½)
d) What is cold sterilization of food? (1½)

3 a) "Of all anti – social practices, there is none more heinous than adulteration of food stuffs" – Justify the statement. (3)
b) Name the major aroma / flavour(s) compounds of the following foods (3)
- i) Garlic
- ii) Grape juice
- iii) Mustard oil
- iv) Mushroom
- v) Orange

4. Answer the following : (6x½)
- a) What is enfluerage?
- b) How pectin is produced from apple?
- c) What is an amylograph?
- d) What is cold creap?
- e) What is cheddering?
- f) What is decoction process?

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5. Distinguish between (6x½)
   a) Potato starch and corn starch
   b) Starch and cellulose
   c) Mixer and Kneader
   d) Straight dough and sponge dough
   e) Niacin and nisin
   f) Salad dressing and gravy

6 a) 1000 lbs of egg white containing 2.7 percent glucose is to be desugared by adding 34,000 units of glucose oxidase, which also contains some catalase. If 6 lbs of 30% H_2O_2 is to be added slowly to the mixture (pH 7, 24°C) to provide the substrate for catalase action, how long will it take to reduce glucose level to 0.1%? (3)

b) A non Newtonian liquid food before entering in a sterilizer passes through a pipe line. A pipe line viscometer 2.5 cm, internal diameter and 50 cm long is used to characterise the liquid food. Assuming a laminar flow for one specific run the pressure drop was 500 N/m^2 at a flow rate of 100 l/min. Calculate the wall shear and apparent viscosity of the liquid food. (9)

7. List the common & uncommon features of the following (5x2=10)
   a) Molasses and milk whey
   b) Bagasse and rice straw
   c) Soyabean and green pea
   d) Pie and pastry
   e) Butter and margarin

OR

Write short notes on (Any five) (5x2=10)

   a) Freeze burning of food
   b) Membranes in food processing
   c) Food from waste
   d) Sweet meats
   e) Food Biosafety
   f) Treatment of whey
   g) Drip loss in food storage
   h) Flexible food package