



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.TECH (FT)/SEM-7/FT-702/2012-13**

**2012**

**FOOD ADDITIVES & POST PROCESS HANDLING**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for the any *ten* of the following : 10 × 1 = 10
  - i) Erythrosine is a coal tar dye which is coloured
    - a) yellow
    - b) red
    - c) pink
    - d) none of these.
  - ii) Nisin is used as preservative to the level
    - a) 1–5 ppm
    - b) 1–25 ppm
    - c) 20–50 ppm
    - d) 50–100 ppm
  - iii) Food thickeners are frequently based on
    - a) protein
    - b) polysaccharide
    - c) both of these
    - d) none of these.
  - iv) The optimum pH for gelation of jam, jelly and marmalade is
    - a) 3.2
    - b) 4.5
    - c) 5
    - d) 5.5.



- v) Benzaldehyde (synthetic flavour) is used as a substitute for
- a) bitter almond                      b) pineapple  
c) banana                                d) none of these.
- vi) Monosodium glutamate (MSG) is obtained from
- a) sea-weed                              b) soya bean  
c) both of these                        d) none of these.
- vii) Propionic acid prevents microbial growth by
- a) impairing enzymatic activity of the microbes  
b) interfering in the metabolic process by forming addition compound  
c) by producing a particular type of flavour substance  
d) none of these.
- viii) The chelating agents are also called
- a) synergist                              b) sequestrants  
c) humectants                          d) none of these.
- ix) The antioxidant which participates in quenching mechanisms is
- a) carotenoids                          b) anthocyanins  
c) epigallocatechin galate        d) none of these.
- x) The natural antimicrobial agent which is present in honey is
- a) lysozyme                              b) coniferyl alcohol  
c) propyl gallate                        d) none of these.
- xi) Ovalbumin is the most abundant of the
- a) milk proteins                        b) egg white proteins  
c) meat red proteins                  d) none of these.
- xii) Rendering is a process by which fat is removed from animal tissue by
- a) acid                                      b) enzyme  
c) heat                                      d) alkali



- xiii) Mayonnaise is
- an emulsion of oil in water
  - an emulsion of water in oil
  - an emulsion of oil in acid
  - an emulsion of oil in egg yolk.
- xiv) Example of a bleaching agent is
- ascorbic acid
  - epoxide
  - bixin
  - none of these
- xv) Sorbic acid is a
- monobasic acid
  - dibasic acid
  - tribasic acid
  - none of these.

#### GROUP – B

##### ( Short Answer Type Questions )

Answer any *three* of the following.  $3 \times 5 = 15$

- How is singlet oxygen inactivated by antioxidants? Explain. 5
- Write a short note on MSG. 5
- Write a short note on natural food colours. 5
- Discuss what you mean by shortening. 5
- Write a note on probiotic food. 5

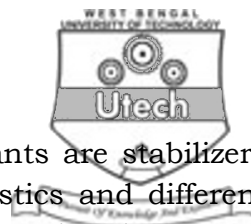
#### GROUP – C

##### ( Long Answer Type Questions )

Answer any *three* of the following.  $3 \times 15 = 45$

- What are anti-foaming agents ? Give example and application. What are flavour enhancers ? What are the basic different types of taste substances encountered in food ? Name a sweetener used for making chewing gum. Name the component responsible for flavour generation in onion. Write a short note on flavours obtained from vegetable products.

$2 + 3 + 1 + 2 + 1 + 1 + 5$



8. Can you justify the statement– "Antioxidants are stabilizers in food" ? Name and state the characteristics and different uses of an acid found mainly in cheese. Why the use of nitrates and nitrites are restricted nowadays ? How these are causing harm to the human body ? Mention the well tolerable limit of these substances and name the alternative that can be used for this purpose. 3 + 3 + 2 + 5 + 2
9. a) Define a food additive. How can food additive be classified ? What should be the general principles for the use of food additives in foods ? What is 'E' number ? Illustrate with an example.  
 b) What is the difference between food additive and preservatives ? Enumerate with examples. Name at least two chemical preservatives which are frequently used in beverages. 10 + 5
10. What are anti oxidants and how they are classified – enumerate with examples. Discuss the role of anti oxidants in food products :  
 a) fish oil  
 b) beverages
11. What are chelating agents ? Can you suggest any other name for it depending on its function ? Show the mechanism of Chelation by suing proper diagrammatic representation. Can antioxidants be used with chelating agent ? Name any two such combinations and the food on which they are used. 2 + 1 + 8 + 1 + 3
12. Write short notes on any three : 3 × 5 = 15  
 a) Flavouring extracts.  
 b) Oligosaccharides and polysaccharides  
 c) Monoglycerides and diglycerides  
 d) Hydrogenation and hydration  
 e) Steam deodorization  
 f) Browning reactions.