

00360

**CERTIFICATE PROGRAMME IN FOOD
SAFETY**

Term-End Examination

June, 2011

BFN-002 : HAZARDS TO FOOD SAFETY

Time : 3 hours

Maximum Marks : 100

Note : Attempt five questions in all. Question number 1 is compulsory. All questions carry equal marks.

1. (a) Explain in two - three sentences each : **10**
- (i) Physical hazards in food
 - (ii) Epidemic dropsy
 - (iii) Leavening agents
 - (iv) Anaerobic bacteria
 - (v) Puffer fish poisoning
- (b) Give one example for each of the following : **10**
- (i) A virus which causes food borne disease
 - (ii) A chemical hazard in food
 - (iii) A mycotoxin produced by *Fusarium* species
 - (iv) Foodborne bacteria causing typhoid
 - (v) Inflammation of stomach, small and large intestine.
 - (vi) Bacteria which cause stomach and duodenal ulcers

- (vii) Leavening agent permitted for use in India.
- (viii) Toxin present in green portions of potato
- (ix) Substances which interfere with uptake of iodine by thyroid gland contributing to iodine deficiency
- (x) Pink colour on treating besan with dilute hydrochloric acid indicates presence of this adulterant

2. (a) Discuss modes of transmission, foods implicated and symptoms of poisoning of the following pathogenic bacteria : **4+4+4=12**

- (i) Staphylococcus aureus
- (ii) Shigella SPP.
- (iii) Vibrio cholerae

(b) What are veterinary drug residues ? How do they pose a threat to human health ? **8**

3. (a) Enlist the factors influencing microbial growth in food. Describe in detail how hydrogen ion concentration and oxidation-reduction potential affect multiplication and survival of microbes. **10**

(b) What are the different stages at which our food can get adulterated ? List at least 2 common adulterants each, which you can expect to find in spices, milk, cereal and pulses.

6+4=10

4. (a) Briefly describe the different types of microbiological hazards that may be present in our food. 10
- (b) Discuss in detail the modes of transmission and symptoms of any four hazardous parasitic protozoa. 10
5. (a) What do you understand by shellfish poisoning ? 5
- (b) Why is it considered dangerous to use aluminium cookware ? 5
- (c) What is botulism ? How can it be prevented ? 5
- (d) What care would you take regarding personal hygiene while handling food so that it doesn't get contaminated ? 5
6. (a) How can you reduce your exposure to various chemical contaminants in food ? 6
- (b) What are dioxins ? How can they enter our food supply ? 4
- (c) What are some of the emerging pathogens of concern ? Discuss some measures for preventing food borne diseases due to these pathogens. 10
7. (a) What are food additives ? How are they classified ? Describe the functional role of emulsifying and stabilizing agents giving suitable examples. 10

- (b) What are some of the anti nutritional factors present in our foods ? What measures would you adopt for removing or reducing their amount in foods ? **10**

8. Write short notes on *any four* of the following :

- (a) Essential Commodities Act, 1955 **5+5+5+5=20**
(b) Safety issues of food additives
(c) Toxicants in plant foods
(d) Pesticide residues
(e) Functions of food packaging
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