

**CERTIFICATE PROGRAMME IN FOOD
SAFETY**

Term-End Examination

December, 2012

BFN-002 : HAZARDS TO FOOD SAFETY

Time : 3 hours

Maximum Marks : 100

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

1. (a) Give **one** example of each : **1x10=10**
- (i) Anaerobic spore forming rod
 - (ii) Yeast causing discoloration in food
 - (iii) Antinutritional factor in food
 - (iv) Parasitic protozoan
 - (v) Enterotoxin producing cocci
 - (vi) Permitted food colour
 - (vii) Physical hazard in food
 - (viii) Food borne virus
 - (ix) Antioxidant used in fats
 - (x) Fusarium produced toxin
- (b) Define the following : **2x5=10**
- (i) Food safety
 - (ii) Water activity
 - (iii) Food additive
 - (iv) Sequestrant
 - (v) Ergot

2. Justify the following statements (*any four*) : **4x5=20**

- (a) Moisture and the rate of growth of microorganisms are inter - related.
- (b) Mycotoxins are harmful secondary metabolites of molds.
- (c) Hazards need to be controlled to ensure food safety.
- (d) Natural toxicants are present in animal foods.
- (e) Role of additives is to extend the shelf life of food.

3. (a) Match the items in column A with the items in column B. **10**

Column A	Column B
(i) HAV	(a) Rice
(ii) Lathyrism	(b) Chicory
(iii) Bacillus Cereus	(c) Kesari Dal
(iv) Vibrio	(d) Poultry
(v) Organochlorine pesticide	(e) Aspergillus flavus
(vi) Cryptosporidiosis	(f) Hands
(vii) Aflatoxin	(g) Enterovirus
(viii) Campylo bacter	(h) Lindane
(ix) Coffee	(i) Asiatic Cholera
(x) Staphylococcus	(j) Raw sausage

- (b) What are the sources of heavy metals in food ? Also list the ill effects of these on human health. 10
4. (a) What are the factors which influence the microbial growth ? Explain briefly. 10
- (b) Enumerate the common ways by which our food may become contaminated or unsafe to eat. 5
- (c) List the precautions you would take to safeguard your food from spoilage. 5
5. (a) What is Food Adulteration ? List the common adulterants found in foods. 5
- (b) What are the methods used for the detection of common food adulterants ? 7
- (c) Enumerate the common toxicants found in plant food highlighting their harmful effects. 8
6. (a) Briefly discuss the viruses implicated in food-borne diseases. Indicate the foods involved, mode of transmission and sign / symptoms of the food - borne diseases caused by these viruses. 10
- (b) What are Emerging Pathogens of Concern ? List the reasons for their emergence. 10

7. What are the common food borne bacterial pathogens ? List their source of entry, symptoms of disease caused by them and the preventive measures you would adopt to prevent food - borne infections. 20
8. Write short notes on (*any four*) : 5+5+5+5
- (a) Pesticide residues in food
 - (b) Synthetic food colours permitted for use in India
 - (c) Physical hazards
 - (d) Shellfish poisoning
 - (e) Direct food additives
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