

**CERTIFICATE PROGRAMME IN FOOD
SAFETY**

Term-End Examination

June, 2013

BFN-002 : HAZARDS TO FOOD SAFETY

Time : 3 hours

Maximum Marks : 100

Note : Attempt five questions in all. Question No. 1 is compulsory. All questions carry equal marks.

1. (a) Define the following : 10
- (i) Food Hazard
 - (ii) Halophillic organisms
 - (iii) Endemic
 - (iv) Ergotism
 - (v) Effluent
- (b) Fill in the blanks : 5
- (i) _____ is a disease characterized by oedema and caused by consuming argemone oil.
 - (ii) _____ requires living cells to grow and reproduce.
 - (iii) Osmophillic organisms grow best in high concentration of _____.
 - (iv) _____ are toxins produced by fungi.

- (v) _____ agent is a substance added to dough to make it ferment and rise.
- (c) List any five anti-nutritional factors in food. 2½
- (d) List any five foods which are commonly adulterated. 2½
2. (a) Briefly discuss the various microbiological hazards of food. 10
- (b) Enlist the common ways by which food may become contaminated or unsafe to eat. 5
- (c) Enlist the precautions that should be adopted by food handlers while handling food. 5
3. (a) "A number of food-borne disease outbreaks are caused by bacteria". Justify the statement highlighting the bacteria involved, mode of transmission, foods implicated and symptoms of poisoning. 12
- (b) Briefly describe the parasitic protozoa causing food safety concerns. 8
4. (a) What are food additives ? Highlight their functional roles as well as, the safety issues in the food industry. 3+6+3
- (b) Differentiate between food contaminants of natural origin and indirect food contaminants, giving appropriate examples. 8

5. (a) Comment on the emerging pathogens of concern to food safety. Give the reasons for their emergence. 7+3
- (b) Which are the issues that may be acquired by ingestion of contaminated water or food? Explain their mode of transmission and the preventive measures. 3+2+5
6. (a) Briefly describe the factors that influence microbial growth. 12
- (b) What are aflatoxins? Enumerate their adverse effects and also highlight the measures you would adopt to reduce exposure to aflatoxins. 2+2+4
7. (a) Define adulteration. State when is or under what conditions is food considered adulterated. 8
- (b) Enumerate the harmful effects of adulterants. 5
- (c) Briefly discuss the chemical hazards and their ill-effects on human health. 7
8. Write short notes on *any four* of the following : 5+5+5+5
- (a) Metallic contaminants - Symptoms of poisoning
- (b) Stages at which food adulteration occurs.
- (c) Direct and indirect food additives.
- (d) Clostridium Botulinum - Symptoms, Transmission and prevention of outbreak.
- (e) Fungi, Yeast - Threat to food safety