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53 (FPT 701) FHPS

2021

**FOOD HYGIENE AND PLANT
SANITATION**

Paper : FPT 701

Full Marks : 100

Time : Three hours

***The figures in the margin indicate
full marks for the questions.***

Answer ***any five*** questions.

1. (a) Define food hygiene in accordance with current use. 2
- (b) Mention the two directives for hygiene design principles and requirements in food processing industries. 2
- (c) What are the aims and benefits of food hygiene ?

Hygiene Design is mentioned in
_____ . (Fill in the blank)

3+1

Contd.

(d) State the Codex General Principles of Food Hygiene. What are the hygienic control measures to be taken in food processing industries ? 2+4=6

(e) What is personal hygiene ? Explain the role of personal hygiene in preventing COVID-19. 6

2. (a)

1×10=10

- (i) What are the main objectives of "Natural Hygiene" movement ?
- (ii) What are the factors on which the length of stationary phase depend ?
- (iii) What is the length of logarithmic growth phase ?
- (iv) What is the optimal relative humidity required for the growth of bacteria ?
- (v) Biofilm can occur above 50°C at an optimum rate. (True/False)
- (vi) Define z-value.

- (vii) What is the reaction temperature and time for annealing step in PCR?
- (viii) What is NPMA? When are Pest Management standards for food plants released?
- (ix) Define disinfection.
- (x) What does code of practice mean?
- (b) How are the location and facilities of food plant important for maintaining hygiene condition in a food plant? 5
- (c) How hazards can be characterized? Mention the risk categories based on ranking by hazard characteristics. 5
3. (a) Explain the food safety objectives to manage microbial risks in food plants. 6
- (b) How can personal contamination affect the hygiene condition of food products? 4

- (c) How many types of contamination carriers are there? 3
- (d) What is food poisoning? Explain the types of food poisoning along with the food poisoning chain. 4
- (e) 1×3=3
- (i) Performance objective is defined as _____ . (Fill in the blank)
- (ii) What is PMP?
- (iii) *Clostridium botulinum* grows below pH 4.5. (True/False)
4. (a) Define biofilm? Explain the formation of biofilm. What are the factors that affect the formation of biofilm? 1+7+2=10
- (b) How sampling and detection of biofilm formation can be done in food processing sites? 4
- (c) What is IPM? What is the role of NPMA in food processing sites? How many pest management standards are used in food industry? 2+3+1=6

5. (a) Explain the working mechanism of autoclave with schematic diagram. 8
- (b) Explain the COP system in brief. What are the advantages of CIP over COP? 7+3=10
- (c) Write the mode of action of the following disinfectants : 2
- (i) Quaternary ammonium compounds
- (ii) Aldehydes.
6. (a) Explain the *ten* principles of Sanitary design. 10
- (b) Define the terms — 2
- (i) emulsification
- (ii) surfactant.
- (c) Explain how food safety objectives can manage microbial risks. 5
- (d) Mention the cleaning characteristics of the following Alkaline cleaning compounds : 3
- (i) Sodium hydroxide
- (ii) Sodium carbonate
- (iii) Sodium bicarbonate.

7. (a) Define PCR and state its use. Explain the different steps in a PCR cycle.

10

(b) Explain *any two* cleaning methods applied in food plants.

10

