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53 (FPT 701) FHPS

2017

**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 the current use. 2
- (b) State the codex general principles of foods hygiene. What are the hygienic control measures to be taken in food processing industries. 2+4
- (c) Discuss *any two* methods to determine microbial load in a specific food samples. 6
- (d) What is the temperature danger zone ? What are the range of temperature danger zone ? 2

Contd.

(e) 1×4

(i) Performance objective is defined as _____.

(ii) Hygienic designed is mentioned in _____.

(iii) Define z-value and thermal death time.

(iv) Biofilm can occur above 50°C at an optimum rate. (True/false)

2. (a) Explain the theory and working principle of autoclave with a neat sketch. 10

(b) What is personal hygiene? What is the role of personal hygiene in maintaining hygienic condition in food processing industry. 6

(c) Explain how food safety objectives can manage microbial risks. 4

3. (a) What is biofilm? Explain in details, the formation of biofilm on food processing surfaces. 1+6

(b) Explain the term "food poisoning chain" along with some example of food poisoning microbes. 3

(c) Explain Integrated pest management along with its functions. 6

- (d) Explain the role of location, equipment and facilities in maintaining the hygiene in food plants. 4
4. (a) How hazard can be characterised ? Mention the risk categories based on ranking by hazard characteristics. 6
- (b) Explain the working principles of PCR. 6
- (c) Mention the cleaning characteristics of the following Alkaline cleaning compounds 1×4
- (i) Sodium hydroxide
 - (ii) Tetrasodium pyrophosphate
 - (iii) Sodium bicarbonate
 - (iv) Sodium orthosilicate.
- (d) Explain the mode of action of sequestrants. 4
5. (a) What is scouring compounds ? Explain different types. 4
- (b) Explain the term principles of sanitary designs. 6
- (c) Explain the COP system in brief. What are the advantages of CIP over COP ? 10

6. (a) (i) What is the reaction temperature and time for annealing step in PCR? 1
- (ii) Define performance objective and performance criteria for food safety. 2
- (iii) Who has developed "autoclave" ? 1
- (iv) State the main objective of "Natural Hygiene" movement. 1
- (b) Explain the operation of high pressure water pumps and portable high pressure - low volume cleaning equipment. 5×2
- (c) What are the different types of carriers for microbes ? Explain. 5
7. (a) Explain *any two* pest control products used in food handling. 5
- (b) Write the stages of cleaning and disinfection. 5
- (c) What are light traps ? Explain the use of light traps in food processing plant. 5
- (d) What are the different treatments used for solid waste management ? Explain the activated sludge process with a neat sketch. 5