53 (FPT 701) FHPS

2016

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. How can common physical hazards be prevented. 5

(b) *(i)* Bioflim can occur above 50°C at an optimum rate. *(True/False)* 1

(ii) Define z-value and thermal death time. 1

(iii) What is the length of logarithmic and stationary growth phase ? 1

(iv) What is the reaction temperature and time for annealing step in PCR ? 1

(v) Define performance objective and performance criteria for food safety. 2

(vi) Who has developed "autoclave" ? 1

(c) State the main objective of "Natural Hygiene" movement. What are the *two* European Regulations for food hygiene ? 1+3=4

(d) State the Codex General principles of food hygiene. 4

2. (a) How many types of contamination carriers are there ? 3

(b) How personal hygiene can affect the hygienic condition in a food plant? 5

(c) Explain the food safety objectives to manage microbial risks in Food plant. 6

(d) Explain the different areas of food plant where hygiene control is necessary. 6

3. (a) Explain the working of autoclave with a neat sketch. 10

(b) Define biofilm. Explain the formation of biofilm. What are the factors that affect the formation of biofilm ? 1+7+2=10

4. (a) Explain the *two* principles of sanitary design. 10

(b) What is Integrated Pest Management ? What are the goals and merits of Integrated pest management ? Explain NPMA. 3+3+2=8

(c) Define disinfection. 1

(d) What is the pH range required for the growth of yeasts ? 1

5. (a) How hazard can be characteristic ? Mention the risk categories based on ranking by hazard characteristic. 5

(b) Explain the mode of action sequestrants. 5

(c) Explain the COP system in brief. What are the advantages of CIP over COP ? 10

6. (a) Explain the cycle of CIP system. 4

(b) Write *two* examples each with composition of the following cleaners. 2×4=8

(i) Alkaline cleaners with medium

(ii) Low concentration of sodium

(iii) Enzyme based

(iv) Potassium and sodium blends.

(c) What are the characteristics of effective membrane cleaners ? 2

(d) Enzymatic cleaners are usually employed if the pH limitation of membrane is _____. 1

(e) Enzyme cleaners have more advantages over traditional caustic or acid cleaning regions. Explain. 5

7. (a) (i) In CIP system, what is the minimum concentration of iodine ? 1

(ii) What should be the pH of chlorine to be used as sanitizer ? 1

(iii) Define scouring compounds. 1

(iv) Name *any two* food spoilage microorganisms. 1

(v) Define the term surfactant. 1

(b) Explain the operation of high pressure water pumps and portable high pressure-low volume cleaning equipment. 5

(c) How many types of pest management standards are used in food industry ? Explain. 3

(d) What do code of practice means ? When it is approved ? 2

(e) What are the insect traps used in food plants ? Explain the different stages of insect light traps. 1+4