



Name :

Roll No. :

Invigilator's Signature :

CS / B.TECH(FT) / SEM-8 / FT-802A / 2011

2011

PLANT MAINTENANCE, SAFETY & HYGIENE

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following :

10 × 1 = 10

- i) Which is unsafe action ?
 - a) Use of unsafe equipment
 - b) Untrained operator
 - c) Both (a) and (b)
 - d) None of these.

- ii) The safety, health & environment control system is to be audited
 - a) internally
 - b) externally
 - c) both (a) and (b)
 - d) none of these.

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- iii) HACCP is a tool to control
 - a) all hazards
 - b) quality management
 - c) none of these
 - d) all of these.

 - iv) Particulate & gaseous pollutants in air can be reduced by
 - a) Good operation & maintenance
 - b) Fuel or energy substitution
 - c) None of these
 - d) All of these.

 - v) Maintenance strategies are
 - a) Predictive maintenance
 - b) Break-down Maintenance
 - c) Preventive maintenance
 - d) All of these.
- Select the odd answers.
- vi) Effective maintenance
 - a) restores system productivity
 - b) increases maintenance cost
 - c) maintains product quality
 - d) adds cost to clean the system.

 - vii) Effective cleaning is dependent on
 - a) temperature
 - b) methods of detergent application
 - c) both (a) and (b)
 - d) none of these.



- viii) Food intoxication is due to
- a) Exotoxin
 - b) Endotoxin
 - c) Food poisoning
 - d) All of these.
- ix) Sulphites prevent
- a) Microbial action in food
 - b) Enzymatic changes in food
 - c) Non-enzymatic changes in food
 - d) All of these.
- x) The selection of lubricant depends on
- a) temperature range
 - b) speed of rotation
 - c) environment
 - d) All of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. Mention the major types of spoilage in food and discuss the sanitation procedures.
3. Classify the hazards and the types of respirators and indicate the essential features of personal protective device.
4. What are the Dos and Don'ts of hygienic design of machinery and equipment in the food industries ?
5. Indicate the function of the staff manning the maintenance service.
6. Indicate the merits and demerits of commercially available sanitizers/disinfectants.
7. Discuss the scope of preventive maintenance activities.

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GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

8. Explain the hygiene & sanitation requirements in food processing industries.
9. Explain Sections 21, 28, 33, 37 & 38 of Indian Factories Act on Safety.
10. Explain the methodology for corrosion prevention and crucial points for the successful implementation of 5 's'.
11. What is plant maintenance programme ? What cares are to be taken for ensuring satisfactory & continuous operation of the equipment for the starting point ? $5 + 10$
12. What are the three alternative approaches of maintenance for any given asset ? What are the methods for corrosion prevention ? $7 + 8$
13. Write short notes on any *three* : $3 \times 5 = 15$
 - a) Safety promotional activity and cost of safety.
 - b) HACCP
 - c) Food safety and consumer protection
 - d) Elements of sanitation programme in food handling operations.
 - e) Functions of safety committee in a food processing plant.