

GURU NANAK INSTITUTE OF TECHNOLOGY
An Autonomous Institute under MAKAUT
2022
PLANT MAINTENANCE, SAFETY AND HYGIENE
FT702C

TIME ALLOTTED: 3Hrs

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)

Answer any **ten** from the following, choosing the correct alternative of each question: **10×1=10**

	Marks	CO No
1. i) What are the Types of Preventive Maintenance? a) 2 b) 3 c) 4 d) None of these	1	CO2
ii) Which of the following is not an important condition for preventive maintenance? a) Size b) Age c) Location d) Oils used	1	CO2
iii) Preventive maintenance and its application is an expensive process a) True b) False	1	CO2
iv) In which country was 5S invented? a) India b) Japan c) Vietnam d) Norway	1	CO1
v) Which of the following from the 5S technique means 'to separate out all unnecessary things and eliminate them'? a) Seiri b) Seiton c) Seiso d) Seiketsu	1	CO1

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|-------|---|---|-----|
| vi) | What is the main objective of risk assessment? | 1 | CO1 |
| | a) To evaluate hazard and minimize the risks | | |
| | b) Remediation of contaminated sites | | |
| | c) Hazard management | | |
| | d) To know source of pollutants | | |
| vii) | What is the first stage of risk assessment? | 1 | CO1 |
| | a) Exposure assessment | | |
| | b) Hazard identification | | |
| | c) Toxicity study | | |
| | d) Risk characterization | | |
| viii) | In which year Good Manufacturing Practices (GMP) Regulations for foods was published? | 1 | CO3 |
| | a) 1969 | | |
| | b) 1971 | | |
| | c) 1948 | | |
| | d) 1974 | | |
| ix) | The no of Principles in HACCP is | 1 | CO3 |
| | a) 7 | | |
| | b) 5 | | |
| | c) 6 | | |
| | d) 12 | | |
| x) | In which year Indian factory act came into action? | 1 | CO4 |
| | a) 1947 | | |
| | b) 1948 | | |
| | c) 1951 | | |
| | d) 1946 | | |
| xi) | In which year Mines act developed in India? | 1 | CO4 |
| | a) 1952 | | |
| | b) 1951 | | |
| | c) 1950 | | |
| | d) 1955 | | |
| xii) | In which year Employees Compensation Act development in India? | 1 | CO4 |
| | a) 1923 | | |
| | b) 1941 | | |
| | c) 1942 | | |
| | d) 1955 | | |

GROUP – B**(Short Answer Type Questions)**(Answer any *three* of the following) **3 x 5 = 15**

- | | | Marks | CO No |
|----|---|--------------|--------------|
| 2. | What is preventive maintenance? What are the Types of Preventive Maintenance? | 5 | CO1 |
| 3. | What are the types of oil used for lubricants? What are the primary functions of a lubricant? | 5 | CO2 |

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|-------|---|---|-----|
| 4. | What is 5S? How you can improve workplace safety via 5S implementation? | 5 | CO2 |
| 5. a. | What is HSE? | 1 | CO3 |
| b. | What factors determine reliability in the Cost Model in safety? | 4 | CO3 |
| 6. | When is Preventive Maintenance Required? Discuss in details. | 5 | CO2 |

GROUP – C

(Long Answer Type Questions)

(Answer any *three* of the following) **3 x 15 = 45**

- | | | Marks | CO No |
|-------|--|--------------|--------------|
| 7 a. | Develop a HACCP Plan for the bakery processing area. Develop Process, identify CCP/CP. | 10 | CO4 |
| b. | What is PRP & OPRP? Discuss with reference to the beverage packaging area. | 5 | CO4 |
| 8 a. | What is personal protective equipment? | 3 | CO4 |
| b. | What can be done to ensure the proper use of personal protective equipment? | 7 | CO4 |
| c. | What are the types of PPE that should be on your essential list for a safe industrial workplace? | 5 | CO4 |
| 9 a. | How do you determine the cost of an accident in the workplace? | 5 | CO2 |
| b. | What is the plant maintenance program? | 5 | CO2 |
| c. | What are the Preventive Maintenance Benefits? | 5 | CO2 |
| 10. | Write Short note: (Any three) | 3*5=15 | |
| a. | Air Pollution | 5 | CO3 |
| b. | Thermal Pollution | 5 | CO4 |
| c. | HACCP principles & Implementation steps | 5 | CO3 |
| d. | Cost of safety | 5 | CO2 |
| e. | Sanitizing & pest control in food processing | 5 | CO4 |
| 11.a. | What are the different types of lubricants and what are their applications? | 6 | CO2 |
| b. | When should you use grease? | 5 | CO2 |
| c. | What are the positive and negative sides of preventive maintenance? | 4 | CO2 |