| C–5410 | Sub. Code 90312 |
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**DIPLOMA EXAMINATION, NOVEMBER 2021**

**First Semester**

**Fire and Industrial Safety**

**FIRE PREVENTION AND PROTECTION**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Write the importance of fire safety.
2. Define Heat transfer.
3. Classify fire alarm system.
4. Write the merits of sprinklers?
5. Define Fire triangle.
6. Write short notes Fire hydrant.
7. Differentiate flammable and combustible liquid.
8. Mention any four special hazards.
9. Define Ventilation.
10. Write ant two safety slogans.

## Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss about the Fire prevention methods.

Or

(b) Write short notes on Hazardous materials.

12. (a) Write short notes on Smoke detectors.

Or

(b) Discuss the merits of Public fire alarm system.

13. (a) Write short notes on Extinguishing agents.

Or

(b) Explain the roles of fire safety department in detail.

14. (a) Discuss the objectives of national electric code.

Or

(b) Write short notes on loading and unloading of oxygen.

15. (a) Write about safety in hot works.

Or

(b) Mention the necessity of spray booths.

## Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss about Sivakasi fire accident and its precautions methods.

Or

(b) Explain the working principle of fire detectors in detail.

17. (a) Classify the fire extinguishers in detail.

Or

(b) Discuss about the safe design of electrical equipment in detail.

18. (a) Describe the handling of combustible liquids in detail.

Or

(b) Explain the Electro static spray operation in detail.

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| C–5411 | Sub. Code 90313 |
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**DIPLOMA EXAMINATION, NOVEMBER 2021**

**First Semester**

**Fire and Industrial Safety**

**PERSONAL PROTECTIVE EQUIPMENTS**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. What are the hazards associated with head injury?

2. Define noise control.

3. Write the types of head protectors.

4. List few PPE used for leg protection

5. What are the four things to be kept in mind while selecting PPE?

6. What are the causes of job related skin diseases and injury?

7. List out the safety measures in respiratory protection.

8. Differentiate smoke and fume.

9. Write the objective of the factories act 1948.

10. What are the responsibilities of management?

## Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain IR and UV radiation.

Or

(b) List out the different types of ear protections.

12. (a) Explain the types of hand protection.

Or

(b) Explain about the different types of safety shoes and its applications.

13. (a) Write short notes on skin protection.

Or

(b) Explain the terms housekeeping and machine guard.

14. (a) Explain the harmful contaminants in details.

Or

(b) List the type of air pollutant and its prevention method.

15. (a) What are the maintenance requirements for safety Shoe?

Or

(b) Write briefly about MSIHC rules.

## Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain major eye protection methods in detail.

Or

(b) What are the three basic types of PPE? Explain with examples.

17. (a) Explain about physical and chemical hazards.

Or

(b) Explain in detail about leg injury. What are the control measures to be taken to avoid leg injury?

18. (a) Explain the respiration protection devices selection and its applications.

Or

(b) Explain about health and safety at work act 1974 of UK.

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| C–5412 | Sub. Code 90314 |
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**DIPLOMA EXAMINATION, NOVEMBER 2021**

**First Semester**

**Fire and Industrial Safety**

**ELECTRICAL SAFETY**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Write the objectives of Indian Electricity act.
2. Write the function of capacitor.
3. What is ionization?
4. Define corona effect.
5. List few PPE for electrical safety.
6. Indicate the hazards associated with electrical maintenance.
7. Write few tips for portable tools safety.
8. What is called preventive maintenance?
9. Define temperature classification.
10. List the roles of electricity board.

## Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Explain about International standard on Electrical safety.

Or

(b) Explain the importance on first aid in applying the Cardio Pulmonary Resuscitation(CPR).

12. (a) Explain the lightening hazard in detail.

Or

(b) Summarize the electrical causes for fire and explosion with suitable applications.

13. (a) Explain about various PPE used for electrical safety.

Or

(b) Explain about various circuit protection system.

14. (a) Explain the fail safe concepts in electrical operations and maintenance.

Or

(b) Summarize the preventive maintenance taken place in terms of electrical safety.

15. (a) Explain about the uses of barriers and isolators in detail.

Or

(b) Explain about the function of equipment certifying agencies.

## Part C (3 × 10 = 30)

Answer **all** questions choosing either (a) or (b).

16. (a) Explain the construction and working principles of electrical equipment with a suitable application.

Or

(b) Summarize the safety requirements from electrical inspectorate.

17. (a) Predict the importance on protection against over voltage and under voltage safety standards.

Or

(b) Discuss Indian electricity rules in detail.

18. (a) Classify hazardous zones and Explain.

Or

(b) Identify the need for safety and specify the equipment certifying agencies.

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| C–2593 | Sub. Code 90321 |
|---|---|

**DIPLOMA EXAMINATION, NOVEMBER 2021**

**Second Semester**

**Fire and Industrial Safety**

**SAFETY IN MATERIAL HANDLING**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. List out any three accessories for manual handling.
2. Define: Ergonomics.
3. What is pinch point?
4. Define: Safe load indicator.
5. Define: hoists.
6. What is the use of hoist limit switch?
7. Define: Rigging.
8. What are the defects of ropes?
9. List the safety precautions in LPG trucks?
10. How do you inspect the Escalator?

**Part B** (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain briefly about Material handling hazards.

Or

(b) Describe Storage and Handling of Cryogenic Liquids.

12. (a) Explain in detail about preventive maintenance for lifting tools.

Or

(b) Define Third Party Inspection.

13. (a) Describe the Hazards in Conveyors.

Or

(b) Explain the safety systems in Conveyors.

14. (a) Explain the Selection procedure for Wire ropes.

Or

(b) Difference between fiber rope and synthetic web slings.

15. (a) How do you conduct performance test for Industrial trucks?

Or

(b) List out the safety consideration for ergonomics.

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about handling of Heavy Objects.

Or

(b) Explain the types of Crane: Provide the reasons for Crane Accidents.

17. (a) Conduct JSA for Conveyors and include Control Measures.

Or

(b) Explain briefly about maintenance procedure for Wire rope slings.

18. (a) Explain in detail about the operating principles of industrial trucks.

Or

(b) Discuss in detail about LPG trucks Safety.

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**C–2594**

**Sub. Code**
**90322**

**DIPLOMA EXAMINATION, NOVEMBER 2021**

**Second Semester**

**Fire and Industrial Safety**

**CHEMICAL SAFETY**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Define: Toxicity.
2. Mention the forms of chemical.
3. What is meant by green chemistry?
4. Define hazardous chemical.
5. Mention the importance of labeling of chemicals.
6. Define: process hazards analysis (PHA).
7. What is compliance audit?
8. Define: SOP.
9. What is housekeeping?
10. Define personal safety.

**Part B** (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain in detail about the routes of chemical entry.

Or

(b) Write all sections in MSDS.

12. (a) Explain about the classification of hazardous chemicals.

Or

(b) What are the safety precautions to be followed during transportation of Hazardous chemicals.

13. (a) Explain the safety procedure to be followed during the storage and handling of chemicals.

Or

(b) What are the requirements to be needed for storage of various chemicals?

14. (a) Explain about safety training.

Or

(b) Explain about the pre start — up safety.

15. (a) List out some basic safety rules in chemical lab.

Or

(b) Explain role and responsibility of supervisor in safety.

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in details about flammable, reactive and explosive hazards.

Or

(b) Draw the pictogram given in globally harmonized system (GHS) for chemical.

17. (a) Draw Emergency Information Panel (EIP) and explain it.

Or

(b) What are the PPE to be worn when working with chemicals?

18. (a) Explain in details about safe preventive for oil storage and handling.

Or

(b) Discuss in details about various treating methodology for hazardous waste.

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**C–2595**

**Sub. Code**
**90323**

**DIPLOMA EXAMINATION, NOVEMBER 2021**

**Second Semester**

**Fire and Industrial Safety**

**BASICS OF SAFETY MANAGEMENT**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. What is JSA?
2. Define: safety policy.
3. What is NCR and its type?
4. What is safety audit?
5. Define : UA and UC.
6. What is hazards?
7. Define: permanent total disabilities.
8. Define frequency rate with formula.
9. List out some important domestic safety topics.
10. What is safety training?

**Part B** (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about Incident recall technique (IRT).

Or

(b) Explain about evaluation of modern safety concept.

12. (a) Explain about safety audit with types.

Or

(b) Create checklist for safety audit conduct.

13. (a) Explain about principles of accident prevention.

Or

(b) Explain about domino sequence.

14. (a) Write formula for frequency rate, severity rate, frequency severity incidence.

Or

(b) Explain role of safety committee in accident investigation.

15. (a) Explain about safety training methods.

Or

(b) Explain importance and identification of training needs.

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain about Accident investigation report (AIR).

Or

(b) Describe the identification of unsafe acts workers and unsafe conditions in the ship floor.

17. (a) (i) Discuss in detail the merits and demerits of safety performance indicators.

(ii) What is the significance of FSI and safe 'T' score?

Or

(b) Write short notes on role of supervisor and role of safety committee.

18. (a) Discuss about the programs seminars and conferences.

Or

(b) Explain domestic safety and training.

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**C–2596**

**Sub. Code**
**90324**

**DIPLOMA EXAMINATION, NOVEMBER 2021**

**Second Semester**

**Fire and Industrial Safety**

**ENVIRONMENTAL STUDIES**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Write any two non renewable resources.
2. Define bio mass.
3. Define bio accumulation.
4. What is over exploitation?
5. Define growing energy needs.
6. Define timber extraction.
7. Write any two functions of eco system.
8. What is habitat loss?
9. Define bio diversity in-situ.
10. Define ex-situ conservation.

**Part B** $(5 \times 5 = 25)$

Answer **all** questions.

11. (a) Briefly explain the importance of public awareness on environmental studies.

Or

(b) Explain renewable and non renewable resources.

12. (a) Explain the energy resources.

Or

(b) Explain the role of individuals in conservation of natural resources.

13. (a) Explain bio diversity and its conservation.

Or

(b) Explain the following:

(i) Habitat loss

(ii) Poaching of wild life

(iii) Wild life conflict.

14. (a) Explain about environmental pollution.

Or

(b) Explain bio geographical classification of India.

15. (a) Explain equitable use of resources for sustainable life style.

Or

(b) Explain causes, effects and control measures of

(i) Marine pollution

(ii) Noise pollution

(iii) Thermal pollution

(iv) Nuclear hazards.

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about floods and drought.

Or

(b) Explain in detail about land degradation and desertification.

17. (a) Explain in detail about structure and function of eco system.

Or

(b) Explain in detail about conservation of bio diversity.

18. (a) Explain in detail about noise pollution.

Or

(b) Explain in detail about thermal pollution.

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| C–5413 | Sub. Code |
|---|---|
| | 90331 |

**DIPLOMA EXAMINATION, NOVEMBER 2021.**

**Third Semester**

**Fire and Industrial Safety**

**INDUSTRIAL SAFETY MANAGEMENT AND CONTINUOUS IMPROVEMENT CONCEPTS**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Define Accident report.

2. Write the importance of insurance.

3. Define site layout.

4. Mention any two NDT methods.

5. What is called industrial toxicology?

6. Define vibration.

7. Write the importance of housekeeping.

8. Give your recommendation to reduce fatal accidents

9. What are the qualities of leadership?

10. What is called POKO YOKE?

## Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain safety inspection with suitable case study.

Or

(b) Discuss the responsibilities of safety officer.

12. (a) Explain the criteria for safe building design.

Or

(b) List the merits of maintenance.

13. (a) Write short notes on Ergonomics.

Or

(b) Enumerate the importance of Industrial hygiene.

14. (a) List the procedure for safe manual handling

Or

(b) Describe radiation hazards.

15. (a) Write short notes on the WAR room.

Or

(b) Describe the five whys technique.

## Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the scope and objectives of industrial safety management.

Or

(b) Discuss the safe storage of hazardous materials.

17. (a) Describe any two industrial hazards and its prevention method.

Or

(b) Classify PPE and its selection procedure in detail.

18. (a) Discuss KAIZEN in detail.

Or

(b) Explain ISHIKAWA diagrams with suitable example.

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| C–5414 | Sub. Code 90332 |
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**DIPLOMA EXAMINATION, NOVEMBER 2021.**

**Third Semester**

**Fire and Industrial Safety**

**SAFETY IN CONSTRUCTION SECTOR**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. What are the common hazards at construction sites.?
2. Define foot protection.
3. List out the hot works in construction site.
4. What do you mean by blasting?
5. Explain the functions of hot mix plant.
6. Define the term signalling.
7. Define scaffolding hazards.
8. Mention few tips for safe use of ladders.
9. Write the importance of hand tool maintenance.
10. What are the treatments for electric shock?

## Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the legal requirements of BOCW Act 1996.

Or

(b) Discuss about the hearing protection methods.

12. (a) Describe the safe procedure for handling explosives.

Or

(b) Write short notes on Tunnelling.

13. (a) Write short notes on Traffic management.

Or

(b) Explain in detail about manual material handling.

14. (a) Explain in detail about structural steel works.

Or

(b) List the limitations of scaffolds and ladders.

15. (a) Explain in detail about the power driven machinery safety.

Or

(b) Write in detail about the LPG storage method.

## Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write short notes on

(i) Respiratory protection.

(ii) First aid.

Or

(b) Explain about pilling and deep foundation and its safety measures.

17. (a) Discuss in details of site transportation.

Or

(b) What is crane? Explain about types of crane.

18. (a) Explain any one accident case study and the lessons learnt.

Or

(b) List out and discuss safety precautions during electrical installation.

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| C–5415 | Sub. Code 90333 |
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**DIPLOMA EXAMINATION, NOVEMBER 2021.**

**Third Semester**

**Fire and Industrial Safety**

**EHS LAWS AND ACTS**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Write the objectives of factory act, 1948.
2. Define unsafe act.
3. What is called bio medical waste?
4. Define noise pollution.
5. Mention the responsibilities of occupier.
6. List few toxic chemicals.
7. Mention any two electricity rules.
8. Define pesticide act
9. Define William steiger act.
10. Brief ANSI?

**Part B** (5 × 5 = 25)

Answer **all** questions.

11. (a) Describe in brief about TN factory rules, 1950.

Or

(b) Describe in brief about Employment of young person.

12. (a) Discuss the power of central government for environmental pollution control.

Or

(b) Write short notes on accounts and audits.

13. (a) Discuss in detail about notification of major accident.

Or

(b) Write short notes on safety data sheets.

14. (a) Describe briefly about the SMPV rules.

Or

(b) Explain explosives act 1983?

15. (a) What is ISO 14000? Explain in detail

Or

(b) Explain about HASAWA in detail.

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about water act 1974.

Or

(b) Explain in detail about onsite and offsite preparation plans.

17. (a) Explain in detail the roles of a safety officer as per safety acts.

Or

(b) Explain in detail storage of hazardous chemicals.

18. (a) Explain in detail about OHSAS 18001.

Or

(b) Explain in detail about petroleum rules.

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| C–5416 | Sub. Code 90334 |
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**DIPLOMA EXAMINATION, NOVEMBER 2021.**

**Third Semester**

**Fire and Industrial Safety**

**ACCIDENT INVESTIGATION, CONTROL, INVESTIGATION AND REPORTING**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Write short notes on "BOCW 1948".

2. Define Accident report.

3. Define human factor theory.

4. Explain the term bird's triangle.

5. Write the Objectives of administrative control.

6. Write any two safety slogans to create safety awareness.

7. Mention few benefits of fault tree analysis.

8. Justify the importance of accident investigation in safety management.

9. Categorize the type of disablement.

10. Explain the term incident rate.

## Part B (5 × 5 = 25)

Answer **all** questions. choosing either (a) or (b)

11. (a) Discuss the necessity of accident reporting to government sector.

Or

(b) Write short notes on: non reportable accidents.

12. (a) Discuss about Domino theory.

Or

(b) List the major benefits of shell model.

13. (a) Justify how the engineering control method helpful to reduce accidents.

Or

(b) Explain the importance of PPE selection.

14. (a) What are the objectives of AEB method?

Or

(b) Explain Event tree analysis.

15. (a) Write short notes on computation of frequency

Or

(b) Classify the industrial accidents.

## Part C (3 × 10 = 30)

Answer **all** questions. choosing either (a) or (b)

16. (a) Describe the scope and objectives of accident reporting system.

Or

(b) Discuss any to principles of accident causation theories with example.

17. (a) Discuss the challenges in the accident prevention and control.

Or

(b) Discuss in detail SCAT and STEP.

18. (a) Discuss the types of industrial injuries and its prevention methods.

Or

(b) Describe any one major accident case study and its prevention strategies.

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| C–5417 | Sub. Code |
|---|---|
| | 90341 |

**DIPLOMA EXAMINATION, NOVEMBER 2021.**

**Fourth Semester**

**Fire and Industrial Safety**

**FIRE DESIGN ENGINEERING**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Write short notes on "Fire properties".

2. Define fire load.

3. Classify the fire extinguisher.

4. What is called fire ball?

5. Define fire hydrant.

6. Define water monitoring.

7. Classify the types of fire.

8. Define the term flooding.

9. List any four detectors used for safety.

10. Define maintenance.

## Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss about the PPE used for fire protection.

Or

(b) Write short notes on fire hazards.

12. (a) Write short notes on passive fire protection

Or

(b) Describe the installation of modular fire extinguisher.

13. (a) Write short notes on Branches and Nozzles.

Or

(b) Explain the roles and responsibilities of fire safety officer

14. (a) Discuss the installation of $CO_2$ suppression system.

Or

(b) Write short notes on installation of foam flooding.

15. (a) List the type of fire alarms and its applications.

Or

(b) Explain the fire alarm system designing.

## Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the various firefighting techniques in detail.

Or

(b) Describe the recent developments in fire design engineering.

17. (a) Explain the major components used in fire fighting system.

Or

(b) Discuss about the design of fire hydrant system.

18. (a) Describe the functions of various fire safety detectors.

Or

(b) Discuss the roles and responsibilities of fire service.

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| C–5418 | Sub. Code |
|---|---|
| | 90342 |

**DIPLOMA EXAMINATION, NOVEMBER 2021.**

**Fourth Semester**

**Fire and Industrial Safety**

**PROCESS SAFETY MANAGEMENT**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. What is called Energy balance?

2. Write few process safety precautions.

3. List few imitations of PHA.

4. Explain safety system.

5. Name few safety awareness methods.

6. Define the term compliance audit.

7. What is called Incident investigation?

8. Write short notes on unsafe act.

9. Explain Hot work permit.

10. Write about emergency response

## Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on Construction materials.

Or

(b) Describe about ventilation system design.

12. (a) Write short notes on HAZOP.

Or

(b) Explain about the types of Training.

13. (a) Write short notes on Quality assurance.

Or

(b) Explain about mechanical integrity.

14. (a) Write short notes on Investigation questionnaire.

Or

(b) Discuss the importance of employee participation.

15. (a) Write about the contractor selection.

Or

(b) Elaborate the emergency planning.

## Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) List any twenty responsibilities of a safety professional.

Or

(b) Explain the scope and objectives of process safety management.

17. (a) Describe the importance of safety training and documentation.

Or

(b) Discuss FMEA in detail with an example.

18. (a) Discuss the standards and regulations for process safety.

Or

(b) Explain any one accident case study and list the lessons learnt.

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| C–5419 | Sub. Code 90343 |
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**DIPLOMA EXAMINATION, NOVEMBER 2021**

**Fourth Semester**

**Fire and Industrial Safety**

**HAZARD IDENTIFICATION, RISK ASSESSMENT AND RISK CONTROL**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Define ALARP
2. Define Severity Rate with Formula.
3. What are the key elements of JSA?
4. List few potential hazards in Fireworks.
5. Define HAZAN
6. Write the merits of ETA
7. Define risk priority number.
8. What is called root cause analysis?
9. What is Safety life cycle?
10. Define risk management

## Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about hierarchy of accident prevention.

Or

(b) Write the five steps of HIRA.

12. (a) Why JSA is requires? Write the benefits of JSA

Or

(b) Explain about HAZID with examples.

13. (a) Explain in detail about the effects of FMEA.

Or

(b) Explain in detail about what if Analysis.

14. (a) Explain about HAZOP. Mention any six keywords with examples.

Or

(b) Explain the following:

(i) Safety calculation.

(ii) Non reportable accidents

15. (a) Write short notes on third party certifications of instruments.

Or

(b) Write the types of disabilities with example.

## Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss about the evaluation of hazard and risk analysis.

Or

(b) Prepare a checklist of JSA with suitable example.

17. (a) Describe the importance of safety management tools in risk management.

Or

(b) Discuss safety instrumentation system in detail

18. (a) Explain in detail about "Bhopal Gas Tragedy" case study.

Or

(b) Explain in detail about the Safety professional roles and responsibilities.

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| C–5420 | Sub. Code |
|---|---|
| | 90344 |

**DIPLOMA EXAMINATION, NOVEMBER 2021.**

**Fourth Semester**

**Fire and Industrial Safety**

**SAFETY INSPECTION AND AUDIT**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Write the purpose of workplace inspection.

2. Define the frequency of inspection.

3. List out the elements of safety audit.

4. What do you mean by interviewing?

5. Explain the principles of LCA.

6. Define continual improvement.

7. Define Short term action plan.

8. Mention the features of OSHAS 18001.

9. Write a short note on audit goals.

10. Mention the qualification of a safety auditor?

## Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain in detail about safety inspection.

Or

(b) Discuss about the types of hazards in work place.

12. (a) What are procedures to identity the unsafe condition of workers?

Or

(b) Write short notes on post audit activities.

13. (a) What are the benefits of ElS?

Or

(b) Explain in detail about ISO 14001.

14. (a) Explain the term HLS.

Or

(b) Explain briefly the structure of OSHAS 18001.

15. (a) Explain in detail about the implementation of audio report.

Or

(b) Write in detail about audit objectives and responsibilities.

## Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Write short notes on:

(i) Inspection report

(ii) Inspection team.

Or

(b) Describe the safety audit procedure for a construction site.

17. (a) What is EMS? Discuss about EMS in detail.

Or

(b) Describe about ISO 9001 in detail.

18. (a) Describe the occupational safety and health audit.

Or

(b) Explain the certificate procedures and certification benefits

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| C–5421 | Sub. Code |
|---|---|
| | 90351 |

**DIPLOMA EXAMINATION, NOVEMBER 2021.**

**Fifth Semester**

**Fire and Industrial Safety**

**SAFETY IN HIGH HAZARDOUS AREAS**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Name any four hazardous gases.

2. Define Explosion proof equipment.

3. Define IEC.

4. What do you mean by Emission degree?

5. Explain the purpose of investigation.

6. Define the term corona discharge.

7. Define the term purging.

8. Mention the uses of fiber optics.

9. Write the intrinsic safety advantages.

10. What is called static electricity?

**Part B** (5 × 5 = 25)

Answer **all** questions.

11. (a) Classify hazardous industrial zones.

Or

(b) Discuss about the expert system for safety assurance.

12. (a) Describe the National electric code.

Or

(b) Write short notes on OSHA.

13. (a) Write short notes on Pressurized equipments

Or

(b) Explain in detail about final report of investigation.

14. (a) Explain in detail about intrinsic safety.

Or

(b) List the merits of explosion proof enclosure.

15. (a) Write short notes on Ionizing radiation.

Or

(b) Classify the barriers in detail.

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) Write short notes on:

(i) Non sparkling equipment.

(ii) Flame proof equipment

Or

(b) Explain about online monitoring expert system

17. (a) Discuss identification of hazardous area in detail.

Or

(b) What is intrinsically safety equipment? Explain its merits and application.

18. (a) Explain any two protection methods in hazardous area with example.

Or

(b) Enumerate scope and objectives of NFPA standards.

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| C–5422 | Sub. Code 90352 |
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**DIPLOMA EXAMINATION, NOVEMBER 2021**

**Fifth Semester**

**Fire and Industrial Safety**

**SAFETY IN OIL AND GAS INDUSTRIES**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Write the importance of safety in oil and gas industry.

2. List few consequences of human error.

3. Explain root cause analysis.

4. Define FMEA.

5. Differentiate onshore and offshore.

6. Write the Lessons learnt from piper alpha accident.

7. Write major factors contributing to accident.

8. Give your recommendation to reduce fatal accidents.

9. What are the sources available for collecting accident data?

10. What is called mitigation?

## Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain bath tub curve.

Or

(b) Discuss the causes of work injuries and mechanical injuries.

12. (a) Explain the methods for performing reliability analysis.

Or

(b) List the merits and demerits of FTA.

13. (a) Write short notes on offshore accident reporting approach.

Or

(b) Enumerate anyone case study of offshore accident and list the preventive measures.

14. (a) List the major factors contributing to accidents in oil and gas industry.

Or

(b) Describe oil field fatality analysis.

15. (a) Write short notes on worldwide accident data bank.

Or

(b) Write the lessons learnt from landmark offshore oil and gas accident.

## Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe product hazard classification in detail.

Or

(b) Discuss the importance of laws and standards in oil and gas industry.

17. (a) Describe sea crest drillship accident.

Or

(b) Explain human factors causation in oil and gas industry.

18. (a) List the general precautions to be considered in oil and gas industry to avoid accidents.

Or

(b) Explain the lessons learned from land mark offshore oil and gas accident.

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| C–5423 | Sub. Code |
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| | 90353 |

**DIPLOMA EXAMINATION, NOVEMBER 2021**

**Fifth Semester**

**Fire and Industrial Safety**

**SAFETY ASPECTS IN INDUSTRIAL PLANT LAYOUT DESIGN**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Write the need of safe layout.

2. Define fire hydrant.

3. Differentiate LNG and CNG.

4. What is called Radiography test?

5. Define CIM.

6. Write short notes on Facility design.

7. Write the need of ventilation.

8. Define the term housekeeping.

9. Define Ergonomics.

10. List few hazards in material handling.

## Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss about the plant layout blue print.

Or

(b) Sketch a safe layout for engineering industry.

12. (a) List the Safety consideration for chemical storage.

Or

(b) Discuss the ultrasonic method and its limitations.

13. (a) Write short notes on ALDEP.

Or

(b) Explain the Quantitative model in detail.

14. (a) Discuss the 5 S principles.

Or

(b) Write short notes on purpose of Lighting.

15. (a) Write about Mechanical material handling.

Or

(b) Mention the necessity of lifting tools inspection.

## Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the importance of standards and codes for plant layout.

Or

(b) Sketch and Explain the safe layout for nuclear power plant.

17. (a) Describe the plant location selection procedure in detail.

Or

(b) Discuss about the TQM in detail.

18. (a) Enumerate the hazards in material handling and its prevention methods.

Or

(b) Explain the inspection and maintenance of lifting tools and tackles.

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| C–5424 | Sub. Code 90354 |
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**DIPLOMA EXAMINATION, NOVEMBER 2021**

**Fifth Semester**

**Fire and Industrial Safety**

**SAFETY IN LOGISTICS AND WAREHOUSE SAFETY**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** the questions.

1. Define 'Logistics'.

2. What is WMS?

3. State the purpose of TREM card.

4. List out the responsibilities of Driver.

5. Why crane is required?

6. Differentiate crane and conveyor.

7. Write few hazards during material handling.

8. Classify cranes.

9. What is 'Fire'?

10. What are fire fighting systems?

## Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write short notes on 'Logistics system'.

Or

(b) What are the functions of Warehouses?

12. (a) Brief warning symbols and their purposes.

Or

(b) Explain the importance of inspection and maintenance of vehicles.

13. (a) What are transport precautions?

Or

(b) Write about grease rack operation and water rack operation.

14. (a) Discuss about the hazards during material handling.

Or

(b) Point out the precautions to be taken on crane operation.

15. (a) How design of a building affects fire safety?

Or

(b) Elaborate the salient features of fire ,explosion and toxicity index.

## Part C

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Brief the purpose of Logistics.

Or

(b) Discuss about MMS.

17. (a) Elaborate the responsibilities of driver and public.

Or

(b) How we motivate the efficiency of drivers?

18. (a) What are the steps to be followed to improve forklift safety?

Or

(b) Describe the methods to increase chain life.

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| C–5425 | Sub. Code |
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| | 90355A |

**DIPLOMA EXAMINATION, NOVEMBER 2021**

**Fifth Semester**

**Fire and Industrial Safety**

**SAFETY IN TEXTILE INDUSTRIES**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. What is called warping?
2. Explain Rayon.
3. List out the causes for accident.
4. State 'punting' in textile industry.
5. Why bleaching is required?
6. What do you mean by 'Effluent'?
7. Write few safety promotion methods.
8. Name few PPE used in textile industry.
9. Write the need of Safety in textile industry.
10. Differentiate act and rules.

## Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What is Jute? Explain its manufacturing process flow charts.

Or

(b) Explain the safety precautions to be considered during rotor spinning.

12. (a) Explain the Hazards in Textile processes.

Or

(b) Discuss the roles of safety officer in textile industry.

13. (a) Brief the reasons for chemical pollution in different stages of textile processes.

Or

(b) Explain the hazards involved in bleaching process.

14. (a) Explain health hazards associated with dust in textile industries.

Or

(b) What are the Health and Welfare measures in textile industries?

15. (a) Brief the various textile wastes and it managements.

Or

(b) Write down the effluent treatment process sequence in textile sectors.

## Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the detail process flow chart for filament yarn to fabric manufacturing industry.

Or

(b) Predict how the sizing process helpful to reduce the industrial accident in terms of its safety and health standards.

17. (a) Illustrate the effects of health hazardous in a dyeing of garments in textile industry in detail.

Or

(b) List the control measures of occupational diseases in a textile industry and its personal protective equipment.

18. (a) Explain the relevance of factories act and rules for a modern textile industry in detail.

Or

(b) Determine the factors involved in the effluent treatment process and also the textile industry waste disposal with a case study.

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| C–5426 |
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| Sub. Code |
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| 90355B |

**DIPLOMA EXAMINATION, NOVEMBER 2021**

**Fifth Semester**

**Fire and Industrial Safety**

**DUST EXPLOSION**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. What is 'Dust explosion'?
2. Classify dust zones.
3. Brief Electrostatics.
4. Differentiate gases and vapour.
5. What do you mean by 'Labeling'?
6. Specify the uses of 'Warning sign'.
7. Define flammability.
8. What is called burning rate?
9. List out the benefits of housekeeping.
10. Write about Explosion isolation.

## Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on 'Dust explosion'.

Or

(b) Write about MIE.

12. (a) List the Electro static hazards.

Or

(b) Discuss the types of discharge.

13. (a) Describe the term 'Environmental protection'.

Or

(b) List the uses of particulate respirators.

14. (a) Brief burning behavior.

Or

(b) Differentiate Friction and thermal sensitivity.

15. (a) Write short notes on mitigation of dust explosion.

Or

(b) Elaborate cyclone method.

## Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe any two dust prevention methods.

Or

(b) Discuss the functions of dust handling plants with suitable sketches.

17. (a) Enumerate any two dust controlling strategies.

Or

(b) Explain the evaluation procedures for repairable particulates.

18. (a) Describe the scope of material safety specification for dust layers.

Or

(b) Discuss Explosion venting in detail.

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| C–5427 | Sub. Code |
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| | 90355C |

**DIPLOMA EXAMINATION, NOVEMBER 2021.**

**Fifth Semester**

**Fire and Industrial Safety**

**SAFETY IN MINING INDUSTRIES**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Write few causes of accident in mines industry.

2. Explain the term Safe transportation.

3. Name few occupational hazards in mines industry.

4. Categorize the different type of sensors used in mines.

5. Define Trapping.

6. List the importance of proper lighting.

7. What are the elements of risk assessment?

8. Define the term Reliability.

9. What do you mean by Frequency rates?

10. Explain the term cost of accident.

## Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a short note on Handling explosives.

Or

(b) Write in detail about Fire prevention system in mines.

12. (a) Write briefly about water flooding.

Or

(b) Discuss about Electrical hazards in mines.

13. (a) Discuss the sources of hazards in tunnelling.

Or

(b) Write short notes on tools and machines used in mines.

14. (a) Write short notes on Fuzzy model.

Or

(b) Differentiate fault tree and event tree analysis.

15. (a) Discuss the objectives of accident analysis.

Or

(b) Describe disaster management.

## Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the recent developments in mines safety.

Or

(b) Explain the procedures for safe transportation in mines.

17. (a) Write short notes on noise and vibration hazards.

Or

(b) Describe the FMEA with examples

18. (a) Discuss mines act in detail.

Or

(b) Explain the importance of accident analysis in detail.

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| Sub. Code |
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| 90355D |

**DIPLOMA EXAMINATION, NOVEMBER 2021**

**Fifth Semester**

**Fire and Industrial Safety**

**SAFETY IN AIRPORT AND SHIPYARD**

**(2019 onwards)**

Duration : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. What is called Dock safety?
2. Define the term Owner of ship master.
3. Give types of hazardous cargo.
4. Explain safety in chipping.
5. Brief Rigging.
6. Write the uses of slings.
7. Write few safety tips to use fork lifts.
8. Differentiate conveyors and cranes.
9. What is called emergency action plan?
10. Define dock railways.

## Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What are the objectives of Environmental protection act 1989?

Or

(b) Write the functions of Advisory committee.

12. (a) Describe the safe handling of transport equipment.

Or

(b) Explain the safety precautions for electrical works.

13. (a) Write about the safe handling of containers.

Or

(b) Classify the lifting appliances.

14. (a) Explain safe use of special trucks in detail.

Or

(b) List out the safe procedure for loading dangerous goods.

15. (a) Give details about the Dock workers rules 1990.

Or

(b) Brief the onsite Emergency plan.

## Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe the Indian history of dock safety statues.

Or

(b) Discuss the scope and objectives of Dock safety act 1986.

17. (a) Describe the safety in storage of hazardous goods.

Or

(b) Elaborate the testing examination and inspection of containers.

18. (a) Describe the collapse of lifting appliances in detail.

Or

(b) Explain the dock workers rules and regulations 1990.

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