C–7904

Sub. Code
90312

DIPLOMA EXAMINATION, NOVEMBER 2022

First Semester

Fire and Industrial Safety

FIRE PREVENTION AND PROTECTION

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. What is called heat transfer.
2. List few hazardous materials.
3. Classify fire detectors.
4. Write the merits of fire alarm.
5. Define Fire Extinguisher.
6. Write short notes Fire hydrant.
7. Differentiate flammable and combustible liquid.
8. Write the objectives of National electric code.
9. Define Hot work.
10. Write ant two safety slogans.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Differentiate Fire protection and prevention.

Or

(b) Write short notes on physics of combustion.

12. (a) Write the merits of Smoke detectors.

Or

(b) Classify fire alarm system.

13. (a) Write short notes on Sprinkler system inspection.

Or

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

14. (a) Discuss the roles of national testing laboratory.

Or

(b) Write short notes on Explosive limits.

15. (a) Write about Electrostatic spray operations.

Or

(b) Mention the importance of ventilation.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss about the roles and responsibilities of fire department.

Or

(b) Explain the construction and working of firefighting systems.

17. (a) Discuss the inspection and maintenance of fire extinguishers in detail.

Or

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

18. (a) Describe the precaution methods for special hazards in detail.

Or

(a) Enumerate any one major fire accident and the lessons learnt in detail.

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C–7905	Sub. Code
	90313

DIPLOMA EXAMINATION, NOVEMBER 2022

First Semester

Fire and Industrial Safety

PERSONAL PROTECTIVE EQUIPMENTS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Write the causes of accidents.

2. Define hearing loss.

3. Write the types of hand protection.

4. Differentiate direct and indirect hazard.

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

6. Brief ventilation.

7. Define oxygen deficiency.

8. Differentiate spray and mist.

9. Write the objective of the factories act 1948.

10. What are the responsibilities of safety officer?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write about different type of hearing protection aids.

Or

(b) List out the different types of eye protection.

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 term machine guard.

14. (a) Illustrate SCBA.

Or

(b) Explain the term harmful contaminants.

15. (a) Write the features of factory act 1964.

Or

(b) Write about the MSIHC rules.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Write about the responsibilities of a safety manager in detail.

Or

(b) Explain IR and UV radiation prevention method.

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) Sketch any two respiratory devices and explain how it works?

Or

(b) Explain about various international standards for safety.

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C–7906	Sub. Code
	90314

DIPLOMA EXAMINATION, NOVEMBER 2022

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 types of electric fault.

2. Define Ohm's law.

3. List the importance of lightening arrestor.

4. Write the first aid procedures for electrical shock

5. Justify any two consequences in grounding of electrical systems

6. Brief ELCB.

7. Define LOTO.

8. Write the uses of portable tools.

9. Indicate the significance of the hazardous zones.

10. List the application of barrier tapes.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss the scope and objectives of Indian Electricity rule

Or

(b) Explain the importance on first aid in applying the cardio pulmonary Resuscitation (CPR).

12. (a) What are primary hazards and how to prevent?

Or

(b) Write short notes on Earth pit maintenance.

13. (a) Write the importance of FRLS insulation.

Or

(b) Explain the types of PPE used in electrical safety.

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

Or

(b) Discuss the necessity of Permit to work in detail.

15. (a) Describe the equipment selection procedure based on zones.

Or

(b) Classify the hazardous location.

Part C (3 × 10 = 30)

Answer **all** questions.

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

Or

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

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

Or

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

18. (a) Describe the safe and explosion proof electrical apparatus.

Or

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

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C–7907	Sub. Code
	90321

DIPLOMA EXAMINATION, NOVEMBER 2022

Second Semester

Fire and Industrial Safety

SAFETY IN MATERIAL HANDLING

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. What is Material handling?

2. List out some accessories for material handling

3. What is crane and its types?

4. What is over loading?

5. Defines conveyor

6. What is hoist?

7. List out types of sling

8. What is hook?

9. Expand LPG, LNG

10. What is fork lift?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain in detail about accessories for material handling.

Or

(b) Explain about handling specify shape machine and other heavy objects.

12. (a) Explain about 3rd party inserter in crane.

Or

(b) List out all types of crane.

13. (a) Explain about safety in conveyor.

Or

(b) How to ingrate hoist.

14. (a) Explain about hook and shackles

Or

(b) Explain about U bolts with diagram.

15. (a) Write short notes on safety in LPG trunk.

Or

(b) Write short notes on safety in Electrical trunk.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain about storage and handling of cryogenic liquids.

Or

(b) Explain about manual material handling.

17. (a) Explain about reason for crane accident.

Or

(b) Explain about conveyor safety.

18. (a) Explain about hoist safety.

Or

(b) Explain about rigging and rigger safety.

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C–7908	Sub. Code
	90322

DIPLOMA EXAMINATION, NOVEMBER 2022

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. Explain about (a) LC5O (a) LD 50
2. List out some biological hazards
3. List out some hazard out chemical
4. List out control method in hierarchy
5. Why cryogen are used?
6. List out flammable chemical
7. Expand LPG. What color LPG is?
8. Define incident
9. What is 5s?
10. Define Housekeeping

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about labelling of Chemical.

Or

(b) Explain about CLP Hazard pictogram.

12. (a) Explain in detail about emergency information panel with diagram.

Or

(b) Explain about chemical explosive risk assessment.

13. (a) Write down safety precaution for storage and handling of chemicals.

Or

(b) Write short notes on compress gas cylinder safety

14. (a) Explain in details about compliance audit.

Or

(b) Explain in detail about employee and contractor training.

15. (a) Explain about waste categories (DG - Classification)

Or

(b) Explain about autoclaving.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain about transportation of Safety in hazardous chemicals.

Or

(b) Explain about classification of hazardous substance.

17. (a) Explain about operating procedure and practice in chemical process safety.

Or

(b) Explain about supervision responsibility in laboratory.

18. (a) Briefly explain about waste disposal in laboratory.

Or

(b) List of some personal safety tips chemical laboratory.

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C–7909	Sub. Code 90323

DIPLOMA EXAMINATION, NOVEMBER 2022

Second Semester

Fire and Industrial Safety

BASICS OF SAFETY MANAGEMENT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define IRT?
2. Differentiate: safety audit and safety survey
3. What is NCR?
4. Differentiate: audit check list and report
5. What is accident?
6. What is reportable accidents?
7. What is non- reportable accidents?
8. Define accident indices
9. Define
   (a) Safety education
   (b) Safety training
10. What is 5 W?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain 5 E.

Or

(b) Explain roles and responsibility of safety officer?

12. (a) Explain safety and its types?

Or

(b) Explain accident investigation and analysis?

13. (a) What is safety audit and types of audit?

Or

(b) What is NCR? Types of NCR with benefits?

14. (a) Explain the disadvantages of safety performance indicators?

Or

(b) Explain frequency rate, severity rate, incident rate, accident rate and safety -t- score

15. (a) Explain safety training methods.

Or

(b) Explain safety tips for kitchen.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain about safety policy and its procedure with one safety policy as example.

Or

(b) Explain about safe audit check list by drawing one check list as example.

17. (a) Explain

(i) Domino sequence

(ii) 55

(iii) CA, PA with example

Or

(b) How to create awareness in safety explain with examples?

18. (a) Explain about training and types of training?

Or

(b) Explain about roles and responsibilities of safety officers in Industry?

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C–7910	Sub. Code 90324

DIPLOMA EXAMINATION, NOVEMBER 2022

Second Semester

Fire and Industrial Safety

ENVIRONMENTAL STUDIES

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** the questions.

1. SACON
2. WII
3. Decomposer
4. Ecosystem
5. Species biodiversity
6. Hot-spots
7. Fume
8. Nuclear hazards
9. Food web of river ecosystem
10. Food chain

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write notes on definition and scope of environmental studies

Or

(b) Explain the multidisciplinary nature of environmental studies.

12. (a) Write notes on use of alternate energy resources.

Or

(b) Comment on Equitable use of resources for sustainable lifestyle.

13. (a) Write an outline on Biogeographical classification of India.

Or

(b) Write short notes on biodiversity at global, national and local levels.

14. (a) Write notes on simple pond ecosystem of your local area.

Or

(b) Write notes on simple hill slope ecosystem of your local area.

15. (a) Write notes on causes, effects and control measures of air pollution.

Or

(b) Write notes on causes, effects and control measures of noise pollution.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Write an essay on need for public awareness regarding environmental protection.

Or

(b) Draw a detailed account on uses of forest resources and threads caused by over exploitation, deforestation timber extraction, mining and dams.

17. (a) Write an essay on threads to biodiversity.

Or

(b) Write an essay on causes, effects and control measures of soil pollution.

18. (a) Write an essay on your visit to a local area regarding documentation of environmental assets.

Or

(b) Write a detailed account on your visit to local polluted site.

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C–7911	Sub. Code
	90331

DIPLOMA EXAMINATION, NOVEMBER 2022

Third Semester

Fire and Industrial Safety

INDUSTRIAL SAFETY MANAGEMENT AND CONTINUOUS IMPROVEMENT CONCEPTS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define safety.
2. What is a domino sequence?
3. List the uses of non destructive testing.
4. State the types of hazards in a site.
5. Define ergonomics.
6. What is the permissible noise level?
7. What is meant by housekeeping?
8. Define static electricity.
9. What is a war room approach?
10. Write the advantages of quality circle.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the needs and types of safety audit.

Or

(b) Distinguish between unsafe acts and unsafe conditions.

12. (a) State the methodology of hazard analysis procedure.

Or

(b) List the various types, uses and limitations of NDT.

13. (a) Explain the types of industrial ventilation.

Or

(b) Write about heat stress and indicate its preventive measures.

14. (a) Explain the entry procedure for confined spaces.

Or

(b) What are the factors for operational safety of cranes?

15. (a) Describe the 5 'Why's' of lean for a root cause analysis.

Or

(b) Elaborate on the steps in eliminating MUDA.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Draft an accident investigation report to the Government.

Or

(b) Elaborate on the types and prevention of industrial accident.

17. (a) Explain about the types of audiometric test and their procedure.

Or

(b) Illustrate the areas of application of ergonomics in workplace.

18. (a) Design a checklist for plant inspection and maintenance for a coolant manufacturing plant.

Or

(b) Describe the hazards involved in Welding, Grinding, wood working machinery, Power tools.

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C–7912	Sub. Code
	90332

DIPLOMA EXAMINATION, NOVEMBER 2022

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. Mention the sources of noise in construction site.
2. Define first aid.
3. List the different types of soil.
4. What is mucking?
5. Who is a signaler in construction?
6. Define SWL.
7. State the limitations of using ladder.
8. What is OSHA definition for ‘working at height?
9. Name some portable electric tools.
10. What is static safety factor?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short note on the occupational health hazards in construction site.

Or

(b) Describe the proper method for housekeeping and movement of materials.

12. (a) What are the sources of electrical hazards in tunneling?

Or

(b) State the guidelines for storage and disposal of explosives.

13. (a) Develop a checklist for MEWP operation.

Or

(b) Explain about the causes of accidents during mechanical lifting.

14. (a) What are the safe practices for structural steel erection?

Or

(b) Write short note on scaffolding accidents.

15. (a) Describe about the different working postures.

Or

(b) Write the steps for fist aid treatment for shock.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain the different methods to prevent collapse in a construction site.

Or

(b) Illustrate the techniques involved in soft ground tunneling.

17. (a) Write an essay on the hazards involved inroad mucking.

Or

(b) Explain in detail about fall protection system.

18. (a) Explain about the stages of safe manual material handling.

Or

(b) What are the hazards in a mechanic shop? How do you prevent them?

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C–7913	Sub. Code
	90333

DIPLOMA EXAMINATION, NOVEMBER 2022

Third Semester

Fire and Industrial Safety

EHS LAWS AND ACTS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define Health and Define Safety.

2. What are the welfare facilities to be provided to the workers at workplace?

3. Define environment and environment pollutant.

4. Define hazardous substance with examples

5. Mention two powers of safety inspector

6. Mention any two reasons for penalties

7. Mention the waste management Hierarchy

8. What are the four types of hazardous waste?

9. Who are called as inspecting authority?

10. Mention two accidents involving personal injury due to gas cylinders?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a note on need for safety at work place.

Or

(b) Write a note on consequences of human error.

12. (a) Write a note on preliminary hazard analysis.

Or

(b) Explain Fault Tree Analysis.

13. (a) Write a note on "Offshore Industry Accident Reporting Approach"

Or

(b) Write a brief note on Safety Reports.

14. (a) Write a short note on storage requirement of hazardous waste.

Or

(b) Write briefly on hazardous waste classification.

15. (a) Write a short note on Handling major leaks and emergencies.

Or

(b) Write a short note on color coding and marking of gas cylinder.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Write briefly on general safety precautions for storage of Cylinders.

Or

(b) Brief on preparation of Offsite and Onsite Plans.

17. (a) Write briefly on prevention and control of Air pollution.

Or

(b) Brief on Water Act 1974.

18. (a) Write briefly on OHSA of USA.

Or

(b) Write briefly on Air Act 1981.

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C–7914	Sub. Code
	90334

DIPLOMA EXAMINATION, NOVEMBER 2022.

Third Semester

Fire and Industrial Safety

ACCIDENT INVESTIGATION, CONTROL INVESTIGATION AND REPORTING

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** the questions.

1. Mention the causes of accidents.

2. Write the purpose of form no 18.

3. List out the merits of Domino's theory.

4. Brief Birds triangle.

5. What is called administrative control?

6. List few duties of a safety officer.

7. Define SCAT.

8. Write the scope of the event tree analysis.

9. Define severity rate.

10. List the types of injuries.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Discuss the accident reporting as per the BOCW act 1996.

Or

(b) Write short notes on accident record maintenance.

12. (a) Write about Human factors theory.

Or

(b) List out the main features of the shell model.

13. (a) Describe the Hierarchy of accident prevention and control.

Or

(b) Discuss the importance of engineering control in accident prevention.

14. (a) Write about Fault tree analysis and its limitations.

Or

(b) Discuss the Root cause analysis with an example.

15. (a) Write short notes on Scheduled charges for disabilities.

Or

(b) Elaborate assessment of work injury in detail.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Elaborate on the process of accident reporting as per the factories act 1948.

Or

(b) Discuss the Heinrich industrial safety principles in detail.

17. (a) Discuss the necessity of PPE in accident prevention.

Or

(b) Elaborate on the process of accident investigation in detail.

18. (a) Describe the types of industrial accidents and its prevention methods.

Or

(b) Discuss the Accident analysis and barrier function method in detail.

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C–7915	Sub. Code
	90341

DIPLOMA EXAMINATION, NOVEMBER 2022

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 the types of fire.

2. Define Fire growth.

3. Write the causes of fire accident.

4. Define fire blanket.

5. Mention few components of fire hydrants.

6. Write short notes on Fire pump room.

7. What is called fire brigade?

8. Write short notes on “Fire tender”.

9. Define flame detector.

10. List few major roles of fire service.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss firefighting techniques.

Or

(b) Classify the types of fire hazards.

12. (a) List the importance of active fire protection system.

Or

(b) Explain the working principle of fire extinguishers.

13. (a) Explain hydrant fitting methods.

Or

(b) Explain the working principle of fire sprinkler system.

14. (a) Discuss the CO_2 suppression system.

Or

(b) Explain the safety awareness methods in any industry.

15. (a) Write the concepts of fire alarm.

Or

(b) Write few safety methods used by other countries.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the NBC classification based on occupancy.

Or

(b) Discuss about the PPE used for fire protection.

17. (a) Describe the maintenance and service of fire extinguisher.

Or

(b) Explain the principle and construction of fire sprinkler system.

18. (a) Discuss the communication techniques for fire technicians.

Or

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

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C–7916	Sub. Code 90342

DIPLOMA EXAMINATION, NOVEMBER 2022

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. Define process safety.
2. Write few occupational diseases.
3. What is called check list?
4. Explain refresher training.
5. Write short notes on mechanical integrity.
6. Define the term quality assurance.
7. What is called incident?
8. Write short notes on unsafe condition.
9. Explain Emergency planning.
10. What is called permit system?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on Relief system design.

Or

(b) Write few general precautions to be taken for safe working process.

12. (a) Describe about emergency preparedness.

Or

(b) Write short notes on HAZOP.

13. (a) Explain about prestart up review.

Or

(b) Write short notes on compliance audit.

14. (a) Prepare a check list for safety audit.

Or

(b) Write short notes on trade secrets.

15. (a) Write about the principle employer responsibilities.

Or

(b) Elaborate the contractor selection guidelines.

Part C (3 × 10 = 30)

Answer **all** questions.

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

Or

(b) Explain the elements of operating procedure.

17. (a) Discuss FMEA in detail with an example.

Or

(b) Describe various investigation methodologies in detail.

18. (a) Explain the roles and responsibilities of safety manager in process safety.

Or

(b) Write the lessons learnt from Bhopal gas tragedy.

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C–7917	Sub. Code
	90343

DIPLOMA EXAMINATION, NOVEMBER 2022

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 risk ranking.

2. Define Risk matrix.

3. What are the benefits of risk management?

4. List few potential hazards in construction site.

5. Define Fault tree analysis.

6. Write short notes on data collection.

7. Write the purpose of AIR.

8. Write any two unsafe act?

9. What is Safe activity rate?

10. Classify maintenance.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about hazard identification.

Or

(b) Write short notes on plant ageing.

12. (a) Explain steps of PHA in detail.

Or

(b) Write short notes on responsible person.

13. (a) Explain in detail about check list Analysis.

Or

(b) Explain in detail about SOP.

14. (a) Differentiate corrective action and preventive action.

Or

(b) Explain the following:

(i) SIL calculation

(ii) Risk priority number

15. (a) Write short notes calculation of accident indices.

Or

(b) Write short notes on explosion protection.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Conduct HIRA for any six activities at a Construction site.

Or

(b) Discuss human reliability analysis in detail.

17. (a) Describe the importance of HAZOP.

Or

(b) What is meant by accident investigation and reporting? What are the steps involved in AIR?

18. (a) Explain in detail about "Tsunami" case study.

Or

(b) Explain in detail about the following:

(i) Causes of Accidents.

(ii) Scope of the safety professional.

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C–7918	Sub. Code
	90344

DIPLOMA EXAMINATION, NOVEMBER 2022

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. How to prepare a report in safety inspection?

2. List few hazards in the workplace.

3. What are the objectives of safety audit?

4. Write few post audit activities

5. Write the benefits of EMS.

6. List the merits of EIA.

7. Explain the principle of OSHAS 18001.

8. Define record retention.

9. Write few benefits of Health audit.

10. Brief Safety records.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain in detail about the planning of workplace inspection.

Or

(b) Describe about Inspection monitoring.

12. (a) Describe the audit checklists and reports.

Or

(b) Explain the methodology to conduct safety audit.

13. (a) Explain the structure and features of OHSAS 18001: 2007.

Or

(b) Write short notes on Eco labeling.

14. (a) Write short notes on short term plan.

Or

(b) Describe the auditing ISO 14000.

15. (a) Discuss the scope of health audit.

Or

(b) Write short notes on "records management'.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the general inspection procedures.

Or

(b) What are the various steps involved in developing an "Inspection Report"? Make a sample report.

17. (a) Explain the implementation of audit indications.

Or

(b) Distinguish between ISO 14001 : 1996 and ISO 9001 : 1994.

18. (a) Discuss the qualification and responsibilities of a safety auditor.

Or

(b) Explain the structure and features of OHSAS 18001 : 2007.

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C–7919	Sub. Code
	90351

DIPLOMA EXAMINATION, NOVEMBER 2022

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. What is zone 0 hazardous industrial area?

2. What is explosion proof equipment?

3. Elaborate NFA and NEC.

4. What is explosion?

5. Define Oxidizer.

6. What is flameproof enclosure?

7. Mention any two faults in electrical equipment.

8. Define Intrinsic safety.

9. Define static electricity.

10. What is hazardous location?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Describe in brief on frame proof equipment's

Or

(b) Write a note on online monitoring expert system

12. (a) Write a note on hazardous area classification

Or

(b) Write a note on procedure for classification of hazardous area.

13. (a) Write a note on oil immersed equipment.

Or

(b) Write a note on safety hazard of electrical faults.

14. (a) Write a short note on hermetic sealing.

Or

(b) Write a short note on conduit and cable seals.

15. (a) Write a short note on NFPA standards

Or

(b) Write a short note on safe barrier type

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe in brief on Class of flammable gases and vapors.

Or

(b) Write briefly on explosion proof equipment.

17. (a) Write briefly on Pressurized equipment/ enclosures.

Or

(b) Write briefly on permissible hot spot temperature.

18. (a) Write briefly on Intrinsic safety principle.

Or

(b) Write briefly on Passive barriers.

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C–7920	Sub. Code 90352

DIPLOMA EXAMINATION, NOVEMBER 2022

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. What are the common cause of mechanical injuries?
2. Mention two classification of human error.
3. Mention two accident caution theories.
4. Mention two methods for performing safety analysis.
5. What is meant by hazard identification technique?
6. Elaborate FMEA. Mention any two strengths of FMEA.
7. Mention two organization factors that affect safety?
8. Mention two group factors that affect safety.
9. Define ERP?
10. Mention any two case studies offshore industrial accidents.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a note on need for safety at work place.

Or

(b) Write a note on consequences of human error.

12. (a) Write a note on preliminary hazard analysis.

Or

(b) Explain Fault Tree Analysis.

13. (a) Write a note on "Offshore industry Accident Reporting Approach"

Or

(b) Explain Kielland Accident.

14. (a) Write a short note on individual factors contributing to accidents.

Or

(b) Brief on recommendations to reduce fatal oil and gas industry accidents.

15. (a) Write a short notes on performance measurement.

Or

(b) Write a short note on rigs accident.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe in brief on product hazard classification.

Or

(b) Explain bath tub hazard curve.

17. (a) Explain Piper Alpha case study Accident.

Or

(b) Explain Glomar Java Sea Drillship Accident.

18. (a) Briefly explain on Root Cause Analysis.

Or

(b) Explain on failure and lessons learnt from landmark offshore oil and gas accidents.

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C–7921	Sub. Code
	90353

DIPLOMA EXAMINATION, NOVEMBER 2022

Fifth Semester

Fire and Industrial Safety

SAFETY ASPECTS IN INDUSTRIAL PLANT LAYOUT DESIGN

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define facility.

2. What is fire and fire Safety?

3. What is the importance of codes and standards in plant/layout?

4. Define Eddy current with an example.

5. Elloborate ALDEP and CORELAP?

6. What are the factors considered while plant layout design procedure?

7. Define illumination and its need.

8. Explain Ergonomics.

9. Define good housekeeping and its need.

10. Define Inspection and its types.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain in brief on "safe layout".

Or

(b) Explain in detail on Fire Hydrant System.

12. (a) Explain Plant inspection.

Or

(b) Explain 5 main principles of JIT Management.

13. (a) Write a note on "Quantitative models".

Or

(b) Write briefly on ALDEP.

14. (a) Write a short note on principles of good ventilation.

Or

(b) What are the benefits of good housekeeping?

15. (a) Write a short note on general safety associated with lubrication.

Or

(b) What are the general safety to be considered during handling of ropes and chains?

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain in brief on Safe Effluent Disposal and treatment tanks.

Or

(b) Brief on safe layout for process industry.

17. (a) Write briefly on CRAFT – Warehouse operation.

Or

(b) Brief on Die penetration test.

18. (a) Explain briefly on JIT and TQM.

Or

(b) Brief on storage of LPG and LNG.

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C–7922	Sub. Code 90354

DIPLOMA EXAMINATION, NOVEMBER 2022

Fifth Semester

Fire and Industrial Safety

SAFETY IN LOGISTICS AND WAREHOUSE SAFETY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define logistics.

2. What are the types of warehouses?

3. What is TREM?

4. What is warning symbols?

5. What is forklift safety?

6. What are the safety rules in a warehouse?

7. What are the electric forks safety challenges?

8. What is emergency planning?

9. Mention any 2 transport precaution.

10. Elaborate EOT.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a short note on logistics management.

Or

(b) What is the role of warehouse manager?

12. (a) Write a short note on driver competency and driver training during transportation of hazardous waste.

Or

(b) What are the emergency planning to be made during transportation of hazardous waste?

13. (a) Write a note on 'Forklift safety".

Or

(b) Write briefly on safe movement of cranes.

14. (a) Explain the difference between checking loads and moving loads.

Or

(b) What are the safety precautions to be considered for wire rope sling?

15. (a) Write briefly on FIRE.

Or

(b) What are different type of firefighting extinguishers?

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Write briefly on warehouse Management System.

Or

(b) Write briefly on need of warehousing management.

17. (a) Write briefly on driver safety.

Or

(b) Write briefly on forklift inspection and maintenance.

18. (a) Explain in brief on SAFE WORKING LOAD.

Or

(b) Explain in brief on "Chain Defects".

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C–7923	Sub. Code
	90355A

DIPLOMA EXAMINATION, NOVEMBER 2022

Fifth Semester

Fire and Industrial Safety

SAFETY IN TEXTILE INDUSTRIES

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define Knitting and Weaving.

2. Define Fiber and Fabric.

3. What is ginning?

4. What is shearing, scouring and carding?

5. Explain the individual system for garment assembly.

6. Mention any three types of cutting machines used in the garment industry.

7. Mention any 2 the hazards due to steam.

8. What is dyeing and bleaching?

9. Mention any 2 health hazards related to dust.

10. Mention any 2 control measures specific to textile industry.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a short note on Spun and filament yarn to fabric manufacture.

Or

(b) Write a short note on hazards associated with steaming unit.

12. (a) What are the hazards associated with bleaching unit?

Or

(b) Explain briefly on noise generation in textile industry.

13. (a) Explain in detail about characteristics (parameters) and their desirable limits of the effluent from textile process.

Or

(b) What are hazardous associated with dyeing unit?

14. (a) Explain in detail about the Occupation Health Hazard associated in Textile industry.

Or

(b) Write a short note on health hazard associated with dust.

15. (a) Explain few rules and statues applicable to textile industry.

Or

(b) Explain in detail about winding and warping.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Write short notes on Musculoskeletal disorders, exposure to chemical agents and its control measures.

Or

(b) Write short notes on exposure to dust at textile industry.

17. (a) Explain briefly on hazards in loom shed and its control measures.

Or

(b) With neat diagram, explain Process flow chart of textile industry.

18. (a) Explain in detail rules and regulation for textile industry according to factories act.

Or

(b) Explain in brief on waste generated at textile industry.

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C–7924	Sub. Code
	90355B

DIPLOMA EXAMINATION, NOVEMBER 2022

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. Draw a explosion pentagon.

2. Define corona discharge.

3. State the condition required for dust explosion.

4. What are the types of dust collection systems?

5. Define DHA.

6. Name the two dust sampling methods.

7. What is a combustible test?

8. State the cubic law for dust explosion.

9. What are the different types of air bag filters?

10. Mention the prevention methods of dust explosion.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on the MIE of dust.

Or

(b) State the factors causing secondary dust explosion.

12. (a) With the help of a neat diagram, explain about cyclones.

Or

(b) Write short notes on nano powder handling.

13. (a) What are the factors influencing the selection of particulate respirators?

Or

(b) Write short notes on safe work practices to prevent dust hazard.

14. (a) How do you determine the thermal sensitivity of dust?

Or

(b) Describe about the combustibility test for dust at elevated temperature.

15. (a) Explain the working of explosion vent.

Or

(b) Sate the advantages of dust control by addition of liquid.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write an essay on the factors influencing dust explosion.

Or

(b) Explain the evaluation procedure for different types of dust in a coal mine.

17. (a) Explain the various hazards in a dust handling plant? How do you prevent them?

Or

(b) Describe about the principle and working of any one dust sampling apparatus with diagram.

18. (a) Write about the principle, working and advantages of ESP.

Or

(b) Describe the harmful effects of electroplating industry.

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C–7925	Sub. Code 90355C

DIPLOMA EXAMINATION, NOVEMBER 2022

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. What are the advantages of open cast mining?

2. Define stripping ratio.

3. Mention the underground mining hazards.

4. Define trapping?

5. Mention the environmental impacts of underground mining.

6. What is the need for mining risk assessment?

7. What are the advantages of tunneling?

8. Define FR and SR.

9. What is meant by statistical risk analysis?

10. How are accidents classified?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on the safe transportation in open cast mines.

Or

(b) Write the control measures for dust hazard in open mining.

12. (a) Write about the risks faced by underground mines workers.

Or

(b) Explain the causes of fire and explosion in underground mines.

13. (a) Write short notes on: Ground collapse, Inundation, and collapse of tunnel face.

Or

(b) Describe about the sources of noise and vibrations in tunneling.

14. (a) Write the advantages and disadvantages of FTA.

Or

(b) Write notes on the fuzzy model of risk assessment.

15. (a) Write about the methods for improving safety in mines.

Or

(b) Explain about the cost of an accident.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Elaborate on the various hazards and risks in open mining.

Or

(b) Give a detailed explosion prevention plan for open mines.

17. (a) Discuss the various instruments used in analysis, measurement and detection of mine gases.

Or

(b) Explain about the adverse effects of water flooding in underground mines.

18. (a) Explain about the sources of tunneling accidents and their remedial measures.

Or

(b) Discuss about the modern engineering developments for mines safety.

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C–7926	Sub. Code 90355D

DIPLOMA EXAMINATION, NOVEMBER – 2022

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. Mention the general hazards in shipyard.

2. Define competent person.

3. What are the hot works done onboard?

4. Define marine safety cards.

5. Name the lifting appliances on ships.

6. Define SWL shipping.

7. What are the different types of cargo?

8. State the advantages of self loading container.

9. Write the different types of slings.

10. Define 'Devanning' of containers.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What are the rules to be followed by dock workers?

Or

(b) Explain the terms: Owner of ship, Agent of ship.

12. (a) List the steps to be taken before accessing an area onboard.

Or

(b) Describe the five precautions to be taken while carrying dangerous goods.

13. (a) Write the characteristics of ropes used in ship.

Or

(b) What are the safety measures followed in operating transtainer and top lift truck?

14. (a) Explain about the loading and unloading of cargos on ships.

Or

(b) Write the SOP for handling chemical container.

15. (a) What are the sources of gas leakage on ships? How do you prevent them?

Or

(b) How do you prevent the collapse of lifting appliances?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Mention the salient features of Dock Workers (Safety, Health and Welfare) Act, 1986.

Or

(b) Write an essay on the general requirements for lifting equipments onboard.

17. (a) Define chipping. Write about the tools used, precaution and protection measures during chipping.

Or

(b) Describe the causes of electrical hazards onboard. How do you manage them?

18. (a) Explain in detail about the testing, examination and inspection of containers.

Or

(b) What is a ship emergency response plan? Develop an ERP for fire onboard.

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C–7927	Sub. Code 90361

DIPLOMA EXAMINATION, NOVEMBER 2022

Sixth Semester

Fire and Industrial Safety

SAFETY MANAGEMENT SYSTEM

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Brief OSHAS.

2. State the purpose of SHE System.

3. Write Haddon's principle.

4. List the barriers in communication.

5. What is called E learning?

6. Mention the roles of a supervisor.

7. Define the term Trade union.

8. What do you mean by Collective Bargaining?

9. List the human factor contributing to accidents.

10. Expand the term Acceptance of risk.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Explain MIS with suitable example.

Or

(b) Write the principles of accident prevention.

12. (a) Write short notes on modes of communication.

Or

(b) Discuss the Organization structure.

13. (a) Give details about the tool box talk.

Or

(b) Write the importance of induction training?

14. (a) Give short note on Safety competition.

Or

(b) Explain Safety promotion techniques.

15. (a) Write short notes on Organizational behavior.

Or

(b) Elaborate Theories of motivation.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Describe the history of safety management in India.

Or

(b) Discuss the use of IT tools in managing SHE System.

17. (a) Explain strategic planning for ensuring safety in an organization.

Or

(b) Explain Modern methods of safety training in detail.

18. (a) Describe the importance of employee participation in safety.

Or

(b) What is Safety culture? How to implement in an organization?

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C–7928	Sub. Code 90362

DIPLOMA EXAMINATION, NOVEMBER 2022

Sixth Semester

Fire and Industrial Safety

COMPUTER AIDED HAZARD ANALYSIS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. What do you mean by human error analysis?

2. Differentiate group risk and societal risk.

3. Explain the application of thermo calorimetry.

4. Define Impact Sensitiveness Test.

5. Draw any to logic symbols.

6. Explain pool fire.

7. Give few examples for Chemical toxicants.

8. What is meant by ETA.

9. List the merits of past accident analysis.

10. Write the lesson learnt from feyzin disaster.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write about safety audit and safety review.

Or

(b) Describe PHA.

12. (a) Describe any one explosive testing method with suitable sketch.

Or

(b) Write the application and advantages of TGA.

13. (a) Write short notes on Failure Mode and Effect Analysis.

Or

(b) Differentiate Fault Tree Analysis and Event Tree Analysis.

14. (a) Write short notes UVCE and BLEVE.

Or

(b) Mention the importance of consequence analysis.

15. (a) Describe flix borough disaster in detail.

Or

(b) Write short notes on rijimond report.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Discuss safety warning system in detail.

Or

(b) Elaborate the construction of reactive calorimeter.

17. (a) Discuss about various software used in risk analysis.

Or

(b) Explain the procedure for chemical inventory analysis.

18. (a) Recall Bhopal disaster and its effects.

Or

(b) Discuss in detail reactor safety study on nuclear power plant.

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