

C-6776

Sub. Code

90313

DIPLOMA EXAMINATION, APRIL 2022

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 is PPE and it's type?
2. List out types of helmets.
3. What is injury?
4. What is ventilation and its types?
5. What is first aid?
6. List out the non respirator type PPE?
7. What is 5S?
8. Where barriers creams are used?
9. What is fall arresters?
10. What is Illumination?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write about Classification of respiratory PPE.

Or

- (b) Explain about eye protection.

12. (a) Explain about ear protection.

Or

- (b) Explain emergency measures on eye protection with checklist.

13. (a) Explain about type of hand protections.

Or

- (b) Explain about skin and body protection PPE.

14. (a) List out the cartridges and their colour codes.

Or

- (b) Explain about Fresh air breathing apparatus.

15. (a) Explain about WAH.

Or

- (b) Explain – Mechanical / Thermal / Chemical hazards.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain about head protection.

Or

- (b) Explain Eye and Ear protection.

17. (a) Explain about respiratory protection PPE.

Or

(b) Explain the points for successful implementation of an effective PPE programme.

18. (a) Explain about Health and safety at work act 1974.

Or

(b) Discuss management responsibilities in PPE selection and maintenance.

C-6778

Sub. Code

90321

DIPLOMA EXAMINATION, APRIL 2022

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. Define Material handling.
2. What is Cryogenic Liquid?
3. Define Cranes.
4. What is JSA?
5. What are load ratings?
6. What is the use of hoist limit switch?
7. Illustrate: Fatigue.
8. What are the defects in wire rope?
9. Define : Powered industrial trucks.
10. List out the ergonomic Hazards.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) List out the Manual handling accessories.

Or

- (b) Explain :

- (i) Steel strapping
- (ii) Sacking and Glass.

12. (a) List out the types of cranes.

Or

- (b) Mention the reasons for Cable damage.

13. (a) Explain briefly about floating cranes.

Or

- (b) Explain in detail about off road vehicles.

14. (a) Define abrasive and Abrasive Wear for wire ropes.

Or

- (b) List the difference Hooks and Shackles.

15. (a) Explain performance test for industrial trucks.

Or

- (b) List out the safety devices and brakes in elevators, truck and hoists.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about hazardous material storage.

Or

- (b) Explain in details about the risk in Unsafe Hooks.

17. (a) Explain in details about conveyor safety.

Or

- (b) Explain about :

- (i) Strength of wire rope,
- (ii) Fatigue of wire rope,
- (iii) Rated capacity of sling

18. (a) Explain in detail about safety precautions used in gasoline operated trucks.

Or

- (b) Discuss in detail about PPE and its types.

C-6779

Sub. Code

90322

DIPLOMA EXAMINATION, APRIL 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. Define: Globally harmonized system (GHS).
2. Define: SDS.
3. What is PPE and its type?
4. Define :Cryogen.
5. Define: HAZCHEM code.
6. Define: Process Hazards Analysis (PHA).
7. What is mechanical integrity?
8. Define: SOP.
9. What is 5S?
10. Define Auto claving.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about LD50 and LC50.

Or

- (b) Write all sections in MSDS.

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

Or

- (b) Explain in details about the hierarchy of risk control.

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

Or

- (b) Explain the safety procedure to be followed in compressed gas cylinders.

14. (a) Explain about safety education and training.

Or

- (b) Explain in details about PPE and its types.

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

Or

- (b) Explain about housekeeping and 5S.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain about atmospheric monitoring and health surveillance.

Or

- (b) Draw the pictogram given in Globally Harmonized System (GHS) for chemical.

17. (a) What are the safety precautions to be followed during transportation of hazardous chemicals?

Or

- (b) Draw Emergency Information Panel (EIP) and explain it.

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

Or

- (b) Discuss in details about Emergency Preparedness plan.

C-6780

Sub. Code

90323

DIPLOMA EXAMINATION, APRIL 2022.

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 safety inspection?
2. Define: safety policy.
3. What is safety audit?
4. What is checklist?
5. Define: UA and U C.
6. What is Accident?
7. Define: temporary total disabilities.
8. Explain the various cost involved in an accident.
9. List out some important domestic safety topics.
10. Distinguish between role of Government agencies and private agencies.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about Safety inspection and its types.

Or

- (b) Explain about evaluation of performance of supervisors on safety.

12. (a) Explain about all types of safety audit.

Or

- (b) Create checklist for safety audit conduct.

13. (a) What is NCR? Explain in detail. Develop NCR formats and use it for OSHAS — 18001 Audit.

Or

- (b) Explain about domino sequence.

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

Or

- (b) Explain one methodology to identify Root Cause of an Accident (RCA).

15. (a) Explain about safety training methods.

Or

- (b) What is importance of training.

Part C

(3 × 10 = 30)

Answer **all** questions.

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

Or

- (b) What is Job Safety analysis? Explain the steps involved in job safety analysis.

17. (a) Explain temporary total disability and permanent partial disability.

Or

- (b) A company has 17 full time employees and 3 part time employees that each work 20 hours per week. If the company experience 2 recordable injuries and 5 lost workdays. Calculate IR and SR.

18. (a) Explain the role of Government and Private consulting agencies in safety training.

Or

- (b) Explain domestic safety and training.

C-6781

Sub. Code

90324

DIPLOMA EXAMINATION, APRIL 2022

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. Non renewable resource
2. Deforestation
3. Exploitation
4. Soil erosion
5. Food Chain
6. Aesthetic value
7. Ex- situ
8. Oil pollution
9. Acid rain
10. Radiation

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write the importance of environmental studies.

Or

- (b) Why need the public awareness on environment? Explain.

12. (a) Write a note on benefits and problems of Dams.

Or

- (b) Give an account on fertilizer and pesticides problems.

13. (a) Write the concepts of ecosystem

Or

- (b) Briefly explain about diversity of ecosystem.

14. (a) Reason out for species becoming endangered in India.

Or

- (b) Explain the effects of soil pollution.

15. (a) How do you control and measures the impact of nuclear hazards? Explain.

Or

- (b) Write about a local polluted site and their effects.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss on over exploitation of minerals and their future impacts.

Or

- (b) Give an account on man induced land slides and soil erosion.

17. (a) Explain Hot spots of Biodiversity.

Or

- (b) Describe the *in situ* and *ex situ* conservation of biodiversity.

18. (a) Discuss on causes and effects of Air pollution.

Or

- (b) Write in detail about simple ecosystem from your filed visit.
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C-6782

Sub. Code

90331

DIPLOMA EXAMINATION, APRIL 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 × 2 = 20)

Answer **all** questions.

1. List few responsibilities of safety engineers.
2. Classify accidents.
3. Define maintenance.
4. Write the causes of building fire.
5. What is called fatigue?
6. Define noise pollution.
7. Write about the static electricity.
8. Name any four tools used in industries
9. Write the importance of leadership.
10. What is called benchmarking?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss the objectives of safety inspection.
Or
(b) Discuss major emergency planning in detail.
12. (a) Classify NDT.
Or
(b) List the precautions for fire hazard.
13. (a) Write short notes on industrial toxicology.
Or
(b) Discuss about worker's welfare facilities.
14. (a) Write short notes on chemical hazards.
Or
(b) Explain the term manual material handling.
15. (a) Write short notes on 5S concept.
Or
(b) Explain 5 GEM BA principles in detail.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the need for safety audit and its merits in detail.
Or
(b) Explain the causes of building collapse and its prevention method.

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

Or

(b) Explain the need for safe work environment in detail.

18. (a) Explain ISHIKAWA diagrams with suitable example.

Or

(b) Enumerate any two lean concepts with examples.

C-6783

Sub. Code

90332

DIPLOMA EXAMINATION, APRIL 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. What is called hygiene?
2. Write few precautions for skin protection.
3. List few guidelines for firing.
4. Write the causes of accident.
5. Explain MEWP.
6. Define the term manual handling.
7. What is called Guard rails?
8. Write short notes on electrode.
9. Define ergonomics.
10. Write any four tools used in construction works.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on Risk to health at work.

Or

- (b) Write few general precautions for working at height.

12. (a) Describe about disposal of explosives.

Or

- (b) Write short notes on Tunnelling safety.

13. (a) Explain about road making.

Or

- (b) Classify cranes. Justify your ideas about its inspection and maintenance.

14. (a) Discuss the scaffolding hazards.

Or

- (b) Discuss safe procedures to handle acids.

15. (a) Write about the importance of ergonomics.

Or

- (b) Elaborate the safe measures for hot working.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the scope of construction safety in detail.

Or

- (b) Explain eye and ear protection techniques in detail.

17. (a) Write short notes on :
- (i) Traffic management.
 - (ii) Lifting techniques.

Or

- (b) Explain about safe erection procedures in detail.
18. (a) Explain any one accident case study and the lessons learnt.

Or

- (b) List out any twenty rules for safe construction works.
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C-6784

Sub. Code

90333

DIPLOMA EXAMINATION, APRIL 2022.

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. What is called hazardous process?
2. List the benefits of factory act.
3. What is called Pollutant?
4. Write the importance of NOC.
5. Define authorities.
6. Write about onsite emergency plan.
7. What is called SMPV?
8. What the objectives of electricity act?
9. Define HASAWA.
10. List the consequences of occupational hazard.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Describe the scope of factory act 1948.

Or

(b) Write short notes on Factory rules 1950.

12. (a) List any five responsibilities of safety officer.

Or

(b) Write short notes on Air act 1981.

13. (a) Discuss about safety reports in detail.

Or

(b) What are the safety requirements while handling hazardous chemicals?

14. (a) Describe briefly about mines act 1952.

Or

(b) What are the safety requirements as per workman compensation act?

15. (a) What is OHSAS 18000? Explain in detail.

Or

(b) Explain about ANSI.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about IBR act 1923.

Or

(b) Explain in detail about Import of hazardous chemical rules 1989.

17. (a) Explain in detail about the building and construction workers act 1996.

Or

(b) Explain the safe disposal of hazardous waste.

18. (a) Explain OSHA 1974 in detail.

Or

(b) Explain in detail about the scope and objectives of ISO 14000.

C-6785

Sub. Code

90334

DIPLOMA EXAMINATION, APRIL 2022

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. What are the causes of accident.?
2. Justify the importance of accident reporting
3. Write short notes on shell model.
4. Explain Accident proneness theory.
5. Write the benefits of Engineering control.
6. Write short notes on PPE
7. Explain SCAT.
8. Differentiate FTA and ETA
9. Brief man hours worked.
10. Define frequency rate.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on Accident reporting to internal management.

Or

- (b) Discuss accident record monitoring.

12. (a) Discuss about the energy transfer theory.

Or

- (b) Explain the behavioural theory.

13. (a) What are the objectives of administrative control?

Or

- (b) Sketch any two PPE used for leg protection.

14. (a) Describe the root cause analysis.

Or

- (b) List the merits and demerits of SCAT.

15. (a) Write short notes on partial disablement.

Or

- (b) Discuss the assessment of work injury.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the accident reporting as per factories act 1948.

Or

- (b) Discuss Heinrich domino theory and its merits and demerits.

17. (a) Discuss the hierarchy of accident prevention and control.

Or

(b) Discuss the process of accident investigation in detail.

18. (a) Discuss the IS 3786 methods for computation of frequency rates.

Or

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

C-6786

Sub. Code

90341

DIPLOMA EXAMINATION, APRIL 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. What are the Fire fighting techniques?
2. Explain about conduction
3. What is Fire extinguisher used for?
4. Example for passive Fire protection
5. What liquid is in a sprinkler head?
6. Explain about fire pump room
7. What is the purpose of Fire tender?
8. Which chemical used as clean agent?
9. How many types of Fire alarm?
10. How does Fire alarm work?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain Fire Load.

Or

(b) Explain NBC classification used on occupancy.

12. (a) Draw Checklist for Fire extinguisher - Maintenance.

Or

(b) Explain about active and passive fire protection system.

13. (a) Explain the installation of Fire hydrant system.

Or

(b) Explain the detail installation of fire pump room.

14. (a) Explain about installation of CO₂ floating system

Or

(b) Explain about installation of foam suppression system.

15. (a) Write the communication techniques for Fire techniques.

Or

(b) Explain emergency plan.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write about types of fire based on size measuring.

Or

- (b) Explain about audit and passion fire product system with example.

17. (a) How to install the fire extinguisher?

Or

- (b) Explain about fire hydrant system and its types.

18. (a) Explain the detail about water storage tank with specification

Or

- (b) Explain about CO₂ suppression system.

C-6787

Sub. Code

90342

DIPLOMA EXAMINATION, APRIL 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. What is upper and lower explosion limits?
2. What is ventilation?
3. List out two training documentation.
4. Define prestart up review.
5. What is compliance audit?
6. What is First aid accident?
7. Define Risk.
8. Define contractor worker.
9. Give the types of ERP.
10. Define hot work permit.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about system design.

Or

(b) Explain about design code and standards.

12. (a) Explain about

(i) Ignited training

(ii) Intermittent training.

Or

(b) Explain detail about FTA.

13. (a) What is purpose of management of charge?

Or

(b) Explain about safety induction training.

14. (a) Explain about track secrets.

Or

(b) Do and points in accident investigation interview.

15. (a) How to select contractor in work place?

Or

(b) Create model sample for hot work permit.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain about equipment definition and quality awareness.

Or

- (b) Explain about the management of change.

17. (a) Explain about investigation methodologies.

Or

- (b) Explain about principle employer responsibilities.

18. (a) Explain about emergency planning and response.

Or

- (b) Explain about piping and instrumentation diagrams.
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C-6788

Sub. Code

90343

DIPLOMA EXAMINATION, APRIL 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. Give the uses of Quantitative Hazard analysis.
2. What is SIL?
3. Write about SIL Standards.
4. What is FEMA?
5. Write about automated FEMA Concepts.
6. What is PHA?
7. What is functional safety?
8. Give the need for risk analysis.
9. Give the objectives of risk assessment.
10. What is Qualitative Hazard analysis?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write about safety instrumentation.

Or

(b) Explain the types of industrial hazards.

12. (a) Explain: Risk assessment.

Or

(b) Write about risk management.

13. (a) Explain: Checklist analysis.

Or

(b) Explain: The advantages and disadvantages of Fault tree analysis.

14. (a) Explain: Risk priority number.

Or

(b) Explain: Intelligent HAZOP.

15. (a) Write about third party certification of instruments.

Or

(b) Explain: Combustible/Flammable gas detection.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain: Computer Hazop.

Or

(b) Write about layer of protection analysis.

17. (a) Write about plant hazard analysis preliminaries.

Or

(b) Explain: What if analysis?

18. (a) Write about human reliability analysis.

Or

(b) Explain: FMEA/FMECA detection, controls and recommended actions.

C-6789

Sub. Code

90344

DIPLOMA EXAMINATION, APRIL 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. Write about frequency of safety inspection.
2. What is work place inspection record?
3. Write the types of audits.
4. Write the post audit activities.
5. What is LCA?
6. Define : EMS.
7. Give the features of OSHAS 18001.
8. Give the key changes in ISO 45001.
9. How to initiate OS & H audit?
10. How to collect evidence in the audit?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain: Workplace inspection report.

Or

- (b) Give the duration and importance of workplace inspection.

12. (a) Write the objectives of safety audit.

Or

- (b) Explain the pre-audit activities.

13. (a) Explain the Documentation requirements and Levels of documentation of ISO 14000 based EMS.

Or

- (b) Explain: ECO labelling.

14. (a) Give the contents of OH&S policy.

Or

- (b) Give the objectives and gargets of OH&S policy.

15. (a) How to execute the OS&H audit explain?

Or

- (b) What are the types of records to be examined during the safety audit? Explain.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Give the guidelines for implementing OSHAS 18001.

Or

- (b) Explain: EIA and its types, and EIA methodology.

17. (a) How to evaluate audit evidence? Explain.

Or

- (b) Explain the onsite activities of safety audit.

18. (a) Give the comparison between ISO 45001 and OSHAS 18001.

Or

- (b) Explain EIS in detail.
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C-6790

Sub. Code

90351

DIPLOMA EXAMINATION, APRIL 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. Classify industrial equipment.
2. Write the merits of online monitoring expert systems.
3. Define NEC.
4. What do you mean by Emission degree?
5. List the application of nitrogen.
6. Define the term corona discharge.
7. Define the term hermetic sealing.
8. Mention the uses of fiber optics.
9. Write the intrinsic safety advantages.
10. What is called barriers?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the types of hazardous zones.
Or
(b) Discuss about the expert system for maintenance.
12. (a) Describe the design regulations for explosive proof equipments.
Or
(b) Write short notes on IEC.
13. (a) Write short notes on nitrogen filled equipment.
Or
(b) Explain in detail about final report of investigation.
14. (a) Explain in detail about restricted breathing.
Or
(b) List the merits of explosion proof enclosure.
15. (a) Write short notes on Ionizing radiation.
Or
(b) Explain intrinsic safety principle.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write short notes on:
(i) Explosion proof equipment.
(ii) Flame proof equipment.
Or
(b) Explain about OSHA and NFA in detail.

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 one accident case study and its prevention method.

Or

(b) Enumerate NFPA standards and its merits and demerits.

C-6791

Sub. Code

90352

DIPLOMA EXAMINATION, APRIL 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. List few responsibilities of safety engineers.
2. Classify human error.
3. Explain Job safety analysis.
4. Define HAZOP.
5. What is called Risk picture?
6. Write the causes of Glomar java sea drill ship accident.
7. Write about group factor.
8. Give you recommendation to reduce fatal accidents.
9. Explain Accident data analysis.
10. What is called corrective measures?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss the objectives of safety management principles.

Or

- (b) Discuss accident causation theory.

12. (a) Explain preliminary hazard analysis.

Or

- (b) List the merits and demerits of ETA.

13. (a) Write short notes on piper alpha accident.

Or

- (b) Discuss offshore worker situation concept.

14. (a) Write short notes on human factors that affect safety in oil and gas industry.

Or

- (b) Write short notes on oil field fatality analysis.

15. (a) Write the standards and acts associated with gas safety.

Or

- (b) Write the lessons learned from Bhopal gas tragedy.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the need for safety and safety engineers in oil and gas industry.

Or

- (b) Explain the consequences of human error and its classification.

17. (a) Describe the methods of reliability analysis.

Or

- (b) Explain ocean ranger accident in detail.

18. (a) Write in detail about recommendation to reduce fatal accidents in oil and gas industry.

Or

- (b) Write short notes on safety management and mitigation.

C-6792

Sub. Code

90353

DIPLOMA EXAMINATION, APRIL 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 × 2 = 20)

Answer **all** questions.

1. Write the need of plant layout.
2. Define safety system.
3. Differentiate LPG and CNG.
4. What is called NDT?
5. Define TQM.
6. Write short notes on Facility design.
7. Write the types of lighting.
8. Define the term preventing maintenance.
9. Define Rigging.
10. List few hazards in material handling.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss about the plant layout design.
Or
(b) Sketch a safe layout for process industry.
12. (a) Write short notes on Plant inspection.
Or
(b) Discuss the merits and demerits of NDT.
13. (a) Write short notes on CIM.
Or
(b) Explain the Quantitative model in detail.
14. (a) Discuss the 5 S principles.
Or
(b) Write short notes on good ventilation principles.
15. (a) Write about manual material handling.
Or
(b) Mention the necessity of lifting tools inspection.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the facilities required for safe effluent disposal.
Or
(b) Sketch and explain the safe layout for construction sites.

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

Or

(b) Discuss about the computerized layout and its limitations.

18. (a) Describe the role of preventive maintenance in safety and health.

Or

(b) Explain the general safety consideration in material handling.

C-6798

Sub. Code

90361

DIPLOMA EXAMINATION, APRIL 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** questions.

1. Brief MIS.
2. What is called near miss incident.
3. Write any four unsafe acts.
4. List the modes of communication.
5. What is called Induction training
6. Mention the roles of a supervisor.
7. Define the term Safety incentives.
8. What do you mean by Collective Bargaining?
9. List any four safety promotion techniques.
10. Explain the term Safety performance.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the theories of accident occurrences

Or

- (b) Write the principles of OSHAS.

12. (a) Write short notes on Managerial communication.

Or

- (b) Discuss the Attributes of safety officer.

13. (a) Write short notes on Job instructions Vs Safety instructions.

Or

- (b) Write the importance of induction training?

14. (a) Give short note on Employee participation.

Or

- (b) Explain Safety promotion techniques.

15. (a) Write short notes on Human factors contributing to accidents.

Or

- (b) Elaborate safety culture system.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Describe economic evaluation and methods in safety promotion.

Or

- (b) Discuss the use of modern methods of programming in SHE System.

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

Or

- (b) Explain Environmental education and training in detail.

18. (a) Describe the history and roles of trade union in safety.

Or

- (b) Describe the physiological aspects need for safety management.

C-6799

Sub. Code

90362

DIPLOMA EXAMINATION, APRIL 2022

Sixth Semester

Fire and Industrial Safety

COMPUTER AIDED HAZARD ANALYSIS

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Mention the procedure for risk estimation.
2. Differentiate voluntary and involuntary risk.
3. Write few merits of DSC.
4. Define Friction sensitiveness test.
5. What is called FETI? -
6. Write the effects of heat and radiation.
7. List few PPE to prevent chemical hazard.
8. What is meant by FTA.
9. Explain convey report.
10. Write the lesson learnt from Bhopal disaster.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write the Hazard assessment procedures.

Or

- (b) Explain types of risk with examples.

12. (a) Distinguish impact and friction testing methods.

Or

- (b) Write short notes on Safety Testing of explosives.

13. (a) Write short notes on Various indices.

Or

- (b) Mention few merits and demerits of reliability software's.

14. (a) Write short notes on chemical inventory analysis.

Or

- (b) Mention the need of good plant layout.

15. (a) Describe port Hudson disaster in detail.

Or

- (b) Write short notes on Feyzin disaster.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss HAZOP in detail.

Or

- (b) Elaborate the construction of differential scanning calorimeter.

17. (a) Discuss fire explosion and toxicity index.

Or

(b) Explain about HARGARS modules on heat radiation in detail.

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

Or

(b) Discuss in detail Ramussen Masses report.

C-6800

Sub. Code

90363

DIPLOMA EXAMINATION, APRIL 2022.

Sixth Semester

Fire and Industrial Safety

**BEHAVIOUR BASED SAFETY AND INDUSTRIAL
ERGONOMICS**

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Write the types of learners.
2. Define Attitude.
3. Mention the importance of team building.
4. What is called group dynamics?
5. Explain the term safety culture.
6. Write the Objectives of ABC model.
7. Justify the importance of Ergonomics in safety process.
8. Name few occupational hazards
9. Define Fatigue.
10. Mention the personalised risk factors.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss various factors influencing personality.

Or

- (b) Write short notes on: Emotional intelligence.

12. (a) Discuss about the organization structure.

Or

- (b) Explain the group decision making techniques.

13. (a) What are the objectives of BBS in the work place?

Or

- (b) Explain safety management system.

14. (a) Describe the application of ergonomic principle in the shop floor.

Or

- (b) Explain the principles of motion economy.

15. (a) Write short notes on safety education and induction training.

Or

- (b) Discuss the Man machine interface in detail.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain various learning theory in details.

Or

- (b) Discuss the importance of communication and its types.

17. (a) Discuss the challenges in implementation of BBS.

Or

- (b) Discuss the components of safety culture in detail.

18. (a) Discuss the methods to eliminate recognised Ergonomic hazards.

Or

- (b) Write the guideline for safe design and postures in detail.
