C–8921	Sub. Code
	90322

DIPLOMA EXAMINATION, APRIL 2023.

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. Differentiate reactive and explosive hazards

3. Write the properties: LC50 and LD50

4. Write short notes on HAZCHEM code

5. Write the objectives of labeling

6. Define the term corrosive substance

7. Mention any two safety precautions for handling LPG.

8. Define Compliance audit.

9. List the importance of good housekeeping

10. What is called personal safety?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Differentiate flammable and explosive hazards.

Or

(b) Write short notes on health surveillance.

12. (a) Write the importance of the risk assessment.

Or

(b) Discuss the inventory and tracking of chemicals.

13. (a) Write short notes on water – reactive substances.

Or

(b) Discuss the design consideration of chemical storage tanks.

14. (a) Mention the safe practices of LPG storage.

Or

(b) Write short notes on process hazard analysis.

15. (a) Write about the waste minimization techniques.

Or

(b) List the general lab rules related to safety.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Discuss the types of Biohazards and its prevention methods.

Or

(b) Enumerate the transportation of hazardous chemicals in detail.

17. (a) Describe the design consideration of the chemical storage tank in detail.

Or

(b) List the recommended practices for the handling of LPG.

18. (a) Enumerate the safety associated with lab instruments in detail.

Or

(b) Describe the waste disposal methods in detail.

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C–8920	Sub. Code
	90321

DIPLOMA EXAMINATION, APRIL 2023.

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** the questions.

1. Write the methods to prevent common injuries.

2. Define material handling.

3. List the reasons for the crane accident.

4. What is called job hazard analysis?

5. Brief the term Derricks.

6. Write the guidelines for using highway trucks.

7. Define the term rigging.

8. What do you mean by unsafe act?

9. State the advantages of power elevators.

10. Write the types of drives.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write short notes on personal protection.

Or

(b) Explain the safe storage methods for cryogenic liquids.

12. (a) Brief the importance of third-party inspection.

Or

(b) Draw and explain various hand signals.

13. (a) Write about the functions of hoists.

Or

(b) Discuss the guidelines for using powered conveyors.

14. (a) Classify ropes and explain its selection procedures.

Or

(b) Differentiate hooks and shackles.

15. (a) Write short notes on power elevators.

Or

(b) Explain the importance of ergonomics in safety aspects.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Explain the safe storage of specific hazardous materials in detail.

Or

(b) Discuss various reasons for crane accidents and its prevention methods.

17. (a) Discuss the derricks inspection and testing methods in detail.

Or

(b) Describe rigging operation with suitable sketches.

18. (a) Discuss safety requirements for powered industrial trucks in detail.

Or

(b) List the roles and responsibilities of a safety officer for safe material handling at the construction site.

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C–8922	Sub. Code
	90323

DIPLOMA EXAMINATION, APRIL 2023

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** the questions.

1. Define job safety analysis.

2. What is called safety survey?

3. List the major causes of accidents.

4. Brief unsafe condition.

5. Write the principles of accident prevention.

6. List the roles of safety committee.

7. What is called partial disabilities?

8. Define frequency rate.

9. What do you mean by a safety campaign?

10. Name few safety promotion techniques.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write short notes on safety budget.

Or

(b) Discuss the safety sampling method in detail.

12. (a) Write short notes on audit checklist.

Or

(b) How do you identify unsafe acts in the shop floor?

13. (a) Differentiate reportable and nonreportable accidents.

Or

(b) Discuss the term domino sequence.

14. (a) Explain the term safety 't' score.

Or

(b) Write the types of disabilities.

15. (a) Discuss the role of private consulting agencies in safety training.

Or

(b) Brief the safety incentive schemes.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Discuss the history of safety movement in detail.

Or

(b) Discuss the components of the safety audit.

17. (a) Describe the accident investigation and analysis in detail.

Or

(b) Enumerate ANSI recommended practices for compiling work injury experience.

18. (a) Discuss the importance of safety education in detail.

Or

(b) Discuss various methods to promote safe practice.

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C–8923	Sub. Code
	90324

DIPLOMA EXAMINATION, APRIL 2023

Second Semester

Fire and Ind. Safety

ENVIRONMENTAL STUDIES

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Biological elements of environment.

2. Cultural elements of environment.

3. Consumer.

4. Ecosystem.

5. Species biodiversity.

6. Hot-spots.

7. Fume.

8. Nuclear hazards.

9. Food web of desert ecosystem.

10. Food Chain.

Part B (5 × 5 = 25)

Answer **all** the 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 notes on dams and their effects on forest and tribal people.

Or

(b) Write notes on energy flow in the ecosystem.

14. (a) Write notes on food chain of grassland ecosystem.

Or

(b) Prove "India as a mega-diversity nation".

15. (a) Write short notes on Man- Wildlife Conflicts.

Or

(b) Write note on in-situ conservation of Biodiversity.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (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 on local polluted site.

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

Or

(b) Write an essay on threads to biodiversity.

18. (a) Draw a detailed account on uses of forest resources and threads caused to forest resources.

Or

(b) Write an essay on public awareness regarding environmental protection.

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C–8924	Sub. Code
	90331

DIPLOMA EXAMINATION, APRIL 2023

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 an 'Accident'.

2. Write the principle of accident prevention.

3. Under which act safety inspection is carried?

4. What are the causes of building failure?

5. What do you understand by industrial toxicology?

6. Mention the types of welfare facilities.

7. What is OSHA definition of confined space?

8. List the types of industrial hazards.

9. Define 'Leadership' in lean?

10. What is the need for benchmarking?

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

Answer **all** questions

11. (a) Indicate the causes and types of accidents.

Or

(b) Explain the terms: Safety audit, Safety inspection, Safety training.

12. (a) Elaborate on the causes of building collapse.

Or

(b) Write short notes on storage of hazardous materials.

13. (a) Explain the control technologies for noise pollution.

Or

(b) Write about the risk factors causing ergonomic hazard.

14. (a) Write, briefly about the 'route of entry' of chemical hazards.

Or

(b) What is the principle of manual handling? List the steps involved.

15. (a) Explain the 5'S' methodology.

Or

(b) Illustrate the procedure for ISHIKAWA diagram.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Write in detail about the cost of an accident.

Or

(b) Draft a plan for major emergency in a production unit.

17. (a) Explain about the types, sources and impacts of vibration.

Or

(b) Explain about the types and uses of PPE'S.

18. (a) Elaborate on the design considerations for fire safety in structures.

Or

(b) Describe about the engineering and administration control of radiation hazard.

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C–8928	Sub. Code
	90341

DIPLOMA EXAMINATION, APRIL 2023.

Fourth Semester

Fire and Industrial Safety

FIRE DESIGN ENGINEERING

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. Classify the level of fire hazards.

2. What is 'Fire load'?

3. What is called fireball?

4. State the uses of modular fire extinguishers.

5. List out the requirements of 'Hydrant'.

6. List the responsibilities of a fire officer.

7. What do you mean by 'fire brigade'?

8. List out the application of the CO_2 suppression system.

9. Write the working principle of fire alarm.

10. Write the purpose of MCP.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write about the Fire theory.

Or

(b) Explain the modes of Heat transfer.

12. (a) Discuss the types of fire extinguishers.

Or

(b) Explain the installation of fire extinguishers.

13. (a) Write down the general requirements for a fire sprinkler system.

Or

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

14. (a) Explain the foam suppression system with a neat sketch.

Or

(b) Why CO_2 flooding system required? Brief your view.

15. (a) Stress the requirements of Fire safety training.

Or

(b) List out the procedure for installation of emergency lighting.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Discuss the fundamentals of Fire Safety in detail.

Or

(b) Elaborate on active fire protection systems in detail.

17. (a) Explain the fire hydrant installation method with a neat sketch.

Or

(b) Discuss the basics of fire engines in detail.

18. (a) Elaborate on the communication techniques for fire technicians.

Or

(b) State the importance of providing emergency fire exits in college buses.

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C–8929	Sub. Code
	90342

DIPLOMA EXAMINATION, APRIL 2023

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 'Inventory'.
2. List out the types of hazards.
3. What is 'HAZOP'?
4. What are the elements of the operating procedure?
5. Write the objective of the pre-start-up review.
6. Draw any two safety signs.
7. List the responsibilities of employees.
8. Mention the types of investigation.
9. Write down the importance of hot work permit.
10. Mention any two safety slogans.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write about the safety system in detail.

Or

(b) Describe the term process chemistry.

12. (a) List out the merits and demerits of FMEA.

Or

(b) Give a short note on training documentation.

13. (a) Explain the concepts of quality assurance.

Or

(b) Discuss compliance audits and its merits.

14. (a) Brief the contractor selection procedures.

Or

(b) Write about the trade secrets in detail.

15. (a) Write short notes on offsite emergency planning.

Or

(b) Discuss the term emergency response.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the ventilation system design in detail.

Or

(b) Explain the methods for conducting PHA in detail.

17. (a) Describe the concepts of mechanical integrity and its limitations.

Or

(b) Describe various investigation questionnaires for process safety.

18. (a) Discuss the contractor employer responsibilities in detail.

Or

(b) Elaborate on various safety training and its benefits in detail.

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C–8930	Sub. Code
	90343

DIPLOMA EXAMINATION, APRIL 2023.

Fourth Semester

Fire and Industrial Safety

HAZARD IDENTIFICATION, RISK ASSESSMENT AND RISK CONTROL

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. Define hazard.

2. What is risk ranking?

3. Brief HAZID.

4. Write the objectives of risk PHA.

5. Mention the limitations of event tree analysis.

6. Write the layer of protection analysis.

7. Differentiate computer and intelligent hazard

8. Write the merits of FMEA.

9. List the objectives of maintenance.

10. Write the benefits of third-party certification.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write short notes on 'ALARP'.

Or

(b) Describe the term plant ageing.

12. (a) Write short notes on 'Risk estimation'.

Or

(b) Write the comparison of various PHA Methods.

13. (a) Differentiate qualitative and quantitative analysis.

Or

(b) Discuss the data collection method in detail.

14. (a) Brief FMECA methodology.

Or

(b) Discuss the SIL calculation for the safety instrument.

15. (a) Discuss the explosion protection methods.

Or

(b) Write short notes on the safety life cycle.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Describe the functional safety in detail.

Or

(b) Discuss the evolution of plant hazards selection techniques.

17. (a) Discuss the human reliability analysis in detail.

Or

(b) Discuss the key points of SIL standards in detail.

18. (a) Sketch and explain flammable gas detection methods.

Or

(b) Discuss the erection and commissioning of the safety instrumentation system.

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C–8931	Sub. Code
	90344

DIPLOMA EXAMINATION, APRIL 2023

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** the questions.

1. Write the required duration for inspection.

2. Write the basic qualification of an auditor.

3. List the pre-audit activities.

4. Brief the term audit evidence.

5. State the principles of environmental audit.

6. Write the benefits of ISO certification.

7. List out the key changes in ISO 45001.

8. Write the structures of OSHAS 18001.

9. List out the major audit documents.

10. Write the elements of OH and S system.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write about the planning of workplace place.

Or

(b) Prepare an inspection report for construction sites.

12. (a) List out the background information to be gathered for the safety audit.

Or

(b) Write short notes on management systems.

13. (a) Write the steps in ISO 14004 in detail.

Or

(b) Discuss the rules for eco-labeling.

14. (a) Explain the features of OSHAS 180001.

Or

(b) Describe the objectives of the short-term action plan.

15. (a) Discuss the audit objectives and responsibilities in detail.

Or

(b) Discuss the implementation of audit reports in detail.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Enumerate hazards in the workplace and its protection methods.

Or

(b) Discuss the methodology to conduct a safety audit in detail.

17. (a) Discuss the contents in ISO 14021 and 14024 in detail.

Or

(b) Describe the scope and features of ISO 45001 in detail.

18. (a) Discuss the types of records to be examined during the safety audit.

Or

(b) Describe the IS 14489:1998 code of practice on occupational safety in detail.

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C–8932	Sub. Code
	90351

DIPLOMA EXAMINATION, APRIL 2023.

Fifth Semester

Fire and Industrial Safety

SAFETY IN HIGH HAZARDOUS AREAS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. What is non sparking equipment?

2. What is zone two hazardous industrial areas?

3. What is flammable substance?

4. Elaborate OSHA and NEC

5. What are the ignition sources for industrial electrical equipment?

6. What are the sources of dust, fibers and flying's?

7. Define temperature class

8. What is conduit and cable seals?

9. Mention the methods that are used to limit the use of available energy

10. Mention two methods of isolating hazard

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) How is explosion controlled?

Or

(b) Write a note on design feature of increased safety equipment.

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

Or

(b) Write a note on identification of emission sources.

13. (a) Write a note on pressurized equipment's.

Or

(b) Write a note on permissible hot spot temperature.

14. (a) Write a short note on explosion proof enclosure.

Or

(b) Write a short note on Isolation of Hazard.

15. (a) Write a short note on Hazardous locations.

Or

(b) Write a short note on advantages of Intrinsic safety

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe in brief on type "P" installation.

Or

(b) Explain briefly on online monitoring expert systems.

17. (a) Write briefly on class 1,2,3 intrinsic safety principle.

Or

(b) Explain 'Pressurization and Purging".

18. (a) Write brief on NFPA Standards.

Or

(b) Write briefly on intrinsic safe barrier types.

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C–8933

Sub. Code
90352

DIPLOMA EXAMINATION, APRIL 2023

Fifth Semester

Fire and Industrial Safety

SAFETY IN OIL AND GAS INDUSTRIES

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. What is occupational stress?
2. Explain the need of safety at oil and gas industry.
3. Mention two methods for performing safety analysis.
4. Mention three safety concerns that are important in the offshore oil and gas industry?
5. Explain offshore industrial sector risk picture.
6. Mention two human factor that affect safety.
7. Mention the importance of 'temperature class".
8. What is offshore rig accident analysis?
9. Mention two control measure for oil and gas industry accident.
10. What are the two lessons learnt from the landmark offshore oil and gas accident?

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

Answer **all** questions.

11. (a) Write a note on safety management principles.

Or

(b) Write a note on common causes of work injuries.

12. (a) Write a note on Job safety analysis.

Or

(b) Write a note on Markov method for performing safety and reliability analysis.

13. (a) Explain Industrial sector risk picture.

Or

(b) Write a note on piper alpha accident.

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

Or

(b) Write a short note on oil field fatality analysis.

15. (a) Write a short note on accident data collection sources.

Or

(b) Write a short note on emergency control measure on offshore oil and gas accidents.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Describe in brief on consequences of human error.

Or

(b) Describe briefly on common causes of occupational stress injuries.

17. (a) With a support of case study, brief on offshore industry accidents.

Or

(b) Explain Bohai two oil accident.

18. (a) What are the recommendations to be considered to reduce fatal accidents at oil and gas industries?

Or

(b) Brief on categories of human factors accident caution in oil and gas industry.

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C–8934

Sub. Code
90353

DIPLOMA EXAMINATION, APRIL 2023

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** the questions.

1. Define 'Plant'.
2. State the purpose of 'Hydrant'.
3. Why location is important?
4. Brief LNG and CNG.
5. What is ALDEP and CRAFT?
6. Write about the uses of Conveyors.
7. List out the facilities required for a good working environment.
8. What is 'Glare'?
9. Why Material Handling is important?
10. Point out the hazards during Material Handling

Part B (5 × 5 = 25)

Answer **all** the questions

11. (a) Write about Safe Layout.

Or

(b) What are the facilities required for safe effluent disposal?

12. (a) How plant location is selected?

Or

(b) Why waste treatment and disposal are significant in plant location?

13. (a) Write short notes on the Computerized layout.

Or

(b) What do you mean by Facility design and its procedure for planning strategies?

14. (a) Explain ventilation in brief.

Or

(b) Describe Glare and its effect.

15. (a) Write in details about the hazards during Material Handling.

Or

(b) How you maintain the Rope and Chain in good condition.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions

16. (a) What are the factors to be considered for a good plant layout?

Or

(b) Discuss various NDT testing in detail.

17. (a) Write briefly about plant inspection and requirements for a good layout.

Or

(b) Discuss about the role of preventive maintenance on safety and health.

18. (a) Elaborate 5S principles with suitable examples.

Or

(b) Describe the significance of ergonomics in safe material handling.

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C–8935	Sub. Code
	90354

DIPLOMA EXAMINATION, APRIL 2023.

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 logistic system.

2. What is the meaning of warehouse?

3. What is warning symbol? Give example.

4. What is static electricity?

5. Mention any four criteria ton select drivers.

6. What is safety to be considered for workers on foot at work place?

7. Mention any two hazards due to chain defects at workplace.

8. What is manual material handling?

9. Define explosion.

10. Write few slogans, that can be written in driver cabin regarding safety.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a short note on storage and distribution system.

Or

(b) What is the functions of warehouses?

12. (a) Write a short note on road transport Act and rules.

Or

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

13. (a) Explain briefly on safety to be associated in driving a forklift.

Or

(b) Explain briefly on risk associated with driving a forklift.

14. (a) Write a short note on chain pulley block safety.

Or

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

15. (a) Write briefly on design of tanker lorries.

Or

(b) Write briefly on TREM.

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 Transportation of Hazardous waste.

Or

(b) Write briefly on Accident Reporting.

18. (a) Explain in brief on Inspection and maintenance of vehicles.

Or

(b) Explain in brief on "handling and storage of compressed gas cylinders".

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C–8936	Sub. Code
	90355A

DIPLOMA EXAMINATION, APRIL 2023.

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 Spinning and combing.

2. Define Fiber and Fabric.

3. Define Knitting and winding.

4. What is spinning, bleaching?

5. What is shearing and wrapping?

6. Explain Dying and punting

7. Mention types of cutting machines used in the garment industry.

8. Mention any two the hazard associated with cooking vessels.

9. What is bleaching?

10. What is ring frames?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write a short note on short staple spinning.

Or

(b) Write a short note on guarding of machinery and safety precaution during winding Process.

12. (a) What are the hazards in cooking vessels?

Or

(b) Explain briefly on Knitting Machines and hazard associated with the same.

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 Mechanical finishing operations?

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

Or

(b) Write a short note on occupational health hazard control measures.

15. (a) Explain in detail about working environment in spinning industries.

Or

(b) Explain in detail about working environment in Ginning industries.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Write short notes on Musculoskeletal disorders, exposure to chemical agents and exposure to dust and fiber at textile industry.

Or

(b) Explain briefly on accidental hazard associated at loom shed and its control measures.

17. (a) What are the salient features on Indian legislation for protecting the safety and health of workers based on a common structure?

Or

(b) Explain in detail on Process flow chart of textile industry.

18. (a) Write in detail with an example on need of health and welfare measures that should be taken at the work place for the employees.

Or

(b) Write in detail about handling and disposal of waste generated at textile industry.

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C–8937	Sub. Code
	90355(B)

DIPLOMA EXAMINATION, APRIL 2023

Fifth Semester

Fire and Industrial Safety

DUST EXPLOSION

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Define dust.

2. Which dust can burn explosively?

3. Mention the health hazards of nano powder handling.

4. Define UFL.

5. What are the sources of dust in a coal plant?

6. What is the size of respirable dust?

7. When does dust exposure occur?

8. What is the burning point of dust?

9. How does housekeeping help in preventing dust explosion?

10. State the mitigation techniques for dust explosion.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Describe the sources of ignition of dust.

Or

(b) Write short notes on primary dust explosion.

12. (a) Explain about dust separator with a neat diagram.

Or

(b) What are the precautions to be taken before electroplating?

13. (a) Write about the engineering control methodology for dust hazard.

Or

(b) Explain the methods of dust sampling.

14. (a) Describe the combustibility test for dust at room temperature.

Or

(b) How do you conduct an impact sensitivity test? What is its need?

15. (a) Write short notes on automatic suppression dust explosion.

Or

(b) Illustrate the parts of dust removal device outside process equipments.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the dust fire with the help of an explosion pentagon.

Or

(b) Describe about any two types of dust filters.

17. (a) Explain the various sources of electrical hazards in a dust handling plant.

Or

(b) Write in detail about the selection and use of particulate respirator.

18. (a) Define smoulder temperature. Write the steps to calculate smoulder temperature of silica dust.

Or

(b) Explain the administrative control methods implemented in dust hazard prevention.

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C–8938

Sub. Code
90355C

DIPLOMA EXAMINATION, APRIL 2023

Fifth Semester

Fire and Industrial Safety

SAFETY IN MINING INDUSTRIES

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Define opencast mining.

2. Name the heavy machineries used in open mining.

3. What are the disadvantages of underground mines?

4. Mention the environmental impacts of underground mining.

5. What is tunneling?

6. Mention the permissible noise level.

7. Define risk.

8. State the methods of mining risk assessment.

9. What are reportable accidents?

10. Write the benefits of accident analysis.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the hazards involved in drilling in open cast mines.

Or

(b) Explain the factors causing explosion in open cast mines.

12. (a) Write short notes on water flowing hazards in underground mines.

Or

(b) Explain the occupational hazards involved in underground mining.

13. (a) Briefly discuss the illumination system in tunneling.

Or

(b) What are the necessary requirements for ventilation in tunneling?

14. (a) Write about the elements to be considered in risk assessment.

Or

(b) Discuss the five steps of FMEA process.

15. (a) How do u prepare for an emergency in a mine?

Or

(b) Describe about the steps involved in accident analysis.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Draft an accident report for an open cast mine.

Or

(b) Write an essay on the hazards and precautions for heavy machineries in open cast mines.

17. (a) Write in detail about the causes, control and prevention of explosion in mines.

Or

(b) Explain the factors causing roof fall and methods to prevent them.

18. (a) Elaborate on the various hazards in tunneling.

Or

(b) Discuss about the steps involved in risk assessment procedure in mining industry.

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C–8939	Sub. Code
	90355(D)

DIPLOMA EXAMINATION, APRIL 2023

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. Name the health hazards of working in a shipyard.

2. What is dock door used for?

3. What is IMDG code?

4. Define chipping.

5. Mention the factors causing rope deformation.

6. What is a transtainer on ship?

7. State the disadvantages of container inspection.

8. What does 'loose gear' mean?

9. Define wheelmark.

10. What are the types of ergonomic hazard in shipyard?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) List the functions of safety and advisory committee in a shipyard.

Or

(b) Write short notes on the training of dock workers.

12. (a) Explain the safety precautions in handling hatch beams and covers.

Or

(b) Write short notes on deck illumination.

13. (a) Write the steps involved in testing of lifting appliances.

Or

(b) How do you maintain ropes and loose gears on ships?

14. (a) Define stacking of cargo. How should the container be stacked ashore?

Or

(b) List the restrictions of stacking operation in shipping industry.

15. (a) Describe the hazards of dangerous goods spillage on ship and sea.

Or

(b) Write the features of conveyor and dock railways under Dock Worker Rules and Regulations.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the responsibilities of safety, health and welfare agencies in dock work.

Or

(b) Write an essay on the hazards of bulk cargo on ships.

17. (a) Explain the preventive measures taken during painting operation onboard.

Or

(b) Explain in detail about the care, maintenance and uses of derrick.

18. (a) Prepare a checklist for the operation of Fort lift truck and cranes on ship.

Or

(b) Define shipboard emergency plan. Prepare an onsite emergency plan for an explosion onboard.

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C–8940	Sub. Code
	90361

DIPLOMA EXAMINATION, APRIL 2023

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. Define 'Safety'.

2. Expand OSHAS.

3. What is your 'Safety Policy'?

4. Give few objectives of Management

5. Why training is required?

6. How you motivate workers?

7. Stress the role of employee in safety.

8. What do you mean by the term SHE?

9. State the purpose of Behavioural safety.

10. How the organizational behaviour affects safety?

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write few words about 'need for Safety'.

Or

(b) Explain the factors that are enhanced the accident occurrence.

12. (a) How safety policy improves safety concepts?

Or

(b) Discuss about the role of management in safety.

13. (a) How the needs for safety are assessed?

Or

(b) Differentiate in plant and out-of-plant training programmes.

14. (a) Who is employee? How his participation is important in safety improvement?

Or

(b) Explain shortly the uses of safety incentive and promotional schemes to motivate safe working environment.

15. (a) Write about Behavioural safety.

Or

(b) List out the human behaviours contributing to accident.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Role of management is more effective in safety consideration – Why?

Or

(b) How one can prevent accident?

17. (a) Point out the Safety department functions and responsibilities to improve safety.

Or

(b) Why periodical motivation is required to develop safety concept and how?

18. (a) Explain few motivational methods for safety enhancement.

Or

(b) Discuss about various ethical issues for safety development.

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C–8941	Sub. Code 90362

DIPLOMA EXAMINATION, APRIL 2023.

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** the questions.

1. Define 'Hazard'.
2. Why Hazard analysis is required?
3. What do you mean by 'Risk'?
4. List out few computer aided instruments.
5. What 'deflagration' represents?
6. Name few risk analysis soft wares.
7. What is the use of consequence analysis?
8. Point out the hazards due to Chemicals.
9. Brief BLEVE.
10. Give a short explanation for 'Flash fire'.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) What is societal risk and individual risk?

Or

(b) Write about the methodology of hazard assessment.

12. (a) Why advanced equipments and instruments are needed for hazard analysis?

Or

(b) Write short notes on Explosives and Ignition tests.

13. (a) Explain the fault tree analysis with an example.

Or

(b) Draw few logic symbols with their indications.

14. (a) What is heat radiation and state its effects with remedies?

Or

(b) Brief pool and Jet fires with their control measures.

15. (a) How the past accident analysis help to improve safety? Give an example.

Or

(b) Describe the Mexico Disaster.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) State the importance of Hazard analysis with its methodology.

Or

(b) Describe human error analysis.

17. (a) What are the computer-aided techniques and instruments used in Traffic control?

Or

(b) Differentiate Fault and Event tree analysis.

18. (a) Describe the hazard identification based on the properties of chemicals.

Or

(b) Write about the after effect of a War.

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C–8942	Sub. Code 90363

DIPLOMA EXAMINATION, APRIL 2023.

Sixth Semester

Fire and Industrial Safety

BEHAVIOUR BASED SAFETY AND INDUSTRIAL ERGONOMICS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. Define 'Personality'.
2. List out the types of misbehaviour.
3. What is 'Group Behaviour'?
4. Group behaviour affects worker's performance.How?
5. Expand BBS.
6. State the function of BBS.
7. Give the meaning of 'Ergonomics'.
8. Mention the purpose of 'Ergonomics'.
9. Write down few job risk factors.
10. Differentiate the terms Static and Dynamic.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write about the factors influencing Personality.

Or

(b) Describe various misbehaviours which affect work performance.

12. (a) List out the different group in an organization.

Or

(b) Give a short note on group decision making techniques.

13. (a) Explain the concepts of behaviour based safety.

Or

(b) Discuss about safety coaching through observation and feedback.

14. (a) Brief Ergonomic principle and its uses.

Or

(b) How ergonomics improve safety in work places?

15. (a) Write short notes on job risk and personal risk factors.

Or

(b) Elaborate various types of Controls.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) How behaviour based safety help to provide safe environment?

Or

(b) Explain the importance of Personality to improve safety.

17. (a) Why group behaviour plays an unique role on industrial activities?

Or

(b) Describe the effects of Observation and Feedback for safety development.

18. (a) Brief the applications of Ergonomic principles in shop floor.

Or

(b) As a Safety Officer give your suggestions to improve safety in shop floor.

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