C–5249	Sub. Code 30611

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

First Semester

Industrial Safety and Hygiene

SAFETY IN FACILITY DESIGN

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Expand LNG, CNG, LPG and PNG.

2. Define territorial parameters.

3. Define plant layout.

4. What is the difference between sewage and effluent disposal?

5. Why we need LEV in a company?

6. Write down the types of lighting.

7. Define cryogenic liquids.

8. Define ergonomics.

9. Write down the types of cranes.

10. What is material handling and list out types of material handling?

Part B (5 × 5 = 25)

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

11. (a) Explain about solution of plant locations.

Or

(b) Write about of location of chemical storages.

12. (a) Explain about various types of layouts.

Or

(b) Describe safe effluent disposal of treatment tanks.

13. (a) Write about housekeeping and 5S?

Or

(b) Define various types of ventilations.

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

Or

(b) Write about design factors and rated capacity of handling equipment.

15. (a) Write the help of neat sketch and explain about hand signal used in Cranes?

Or

(b) What is meant by inspection checklist with example?

Part C (3 × 10 = 30)

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

16. (a) Illustrate selection consideration of plant site for water treatment plant.

Or

(b) Draw a safe layout for process industries.

(i) Thermal power station.

(ii) Nuclear power station

17. (a) Explain in detail about various types of lightning and its advantages and disadvantages.

Or

(b) Write about psychological and comport level for summer and winter air conditioning.

18. (a) Explain in-detail about safe handling and disposal of hazardous materials.

Or

(b) Explain lifting and types of lifting accessories with diagram.

———————

C–3887	Sub. Code 30612

M.Sc. DEGREE EXAMINATION

INDUSTRIAL SAFETY AND HYGIENE

NOVEMBER 2021 EXAMINATION

First Semester

WORK STUDY AND ERGONOMICS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Ergonomics.

2. What are the economics benefits of ergonomics?

3. Expand FJM and FMJ.

4. What is the maximum load to be carried by man, woman, adolescent, boy and girl?

5. List out the emergency control design for fast actions.

6. What is Anatomy and Human factor engineering?

7. Write the importance of ergonomics.

8. What is musculoskeletal disorder?

9. Define : (a) Postural stability (b) Postural adaptation.

10. Define anthropometry.

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

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

11. (a) Explain with neat diagram FOCUS OF ERGONOMICS.

Or

(b) Brief note on basic body mechanics.

12. (a) Write a brief note on / history of Ergonomics.

Or

(b) Give note on application of ergonomics in workplace.

13. (a) List out the ergonomics problems associated in standing work.

Or

(b) Write about the ergonomics body posture during sitting work with example.

14. (a) Write a brief note on material handling storage.

Or

(b) Share your view of future direction for ergonomic.

15. (a) Explain job stress and its effects.

Or

(b) Explain Auditory controls and design of controls.

Part C ($3 \times 10 = 30$)

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

16. (a) Explain Ergonomics areas of application in the work system.

Or

(b) Write about the risk factors for musculoskeletal disorder in workplace.

17. (a) List out the hand tools along with their ergonomic importance.

Or

(b) Detail note on effective and cost effectiveness of human factor engineering.

18. (a) List out the action associated with manual lifting and corrective manual lifting methods.

Or

(b) Give the principals of applied Anthropometry in Ergonomics.

———————

C–3888	Sub. Code
	30613

M.Sc. DEGREE EXAMINATION

INDUSTRIAL SAFETY HYGIENE

NOVEMBER 2021 EXAMINATION

First Semester

SAFETY CONCEPTS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define safety.

2. What is safety audit?

3. What is safety inspection?

4. What is UA and UC?

5. What is meant by near miss?

6. Sketch domino sequence.

7. What is severity Rate?

8. What is permanent total disabilities?

9. What is the difference between safety training and safety education?

10. List out some safety training methods.

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

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

11. (a) Write short note on Incident recall technique.

Or

(b) Write short note on JSA.

12. (a) What is meant by audit? Explain in detail about types of audit.

Or

(b) What is non-conformity reporting? Explain its types.

13. (a) Write short note on Reportable accidents and non-reportable accident.

Or

(b) Write down the roles of safety committee.

14. (a) Write short note on all safety performance indicator with formulas.

Or

(b) What are the procedure for reporting statutory authorities?

15. (a) Write about safety sign, display, signals and barricade.

Or

(b) Write short notes on safety pledge.

Part C ($3 \times 10 = 30$)

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

16. (a) Write a short notes on history of safety moments.

Or

(b) Explain in detail about of safety audit.

17. (a) Explain detail about AIR.

Or

(b) Write short notes on :

(i) Permanent total disabilities

(ii) Permanent partial disabilities

(iii) Temperature partial disabilities

(iv) Temperature total disabilities.

18. (a) Explain in detail about principles of accident prevention.

Or

(b) Discuss in detail about the role of government and private agencies in safety training.

———————

C–3889	Sub. Code
	30614

M.Sc. DEGREE EXAMINATION

INDUSTRIAL SAFETY AND HYGIENE

NOVEMBER 2021 EXAMINATION

First Semester

FIRE SAFETY – DESIGN, INSTALLATION AND MAINTENANCE

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define fire point.

2. Expand BLEVE.

3. What is meant by flammable and combustible?

4. What is fire extinguishers?

5. Give any two merits of heat detectors.

6. Define detection zone and detection loop.

7. What is fire pump?

8. What is fire hydrant risers?

9. What is occupant load as per NBC 2005?

10. What is fire load and write its formula?

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

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

11. (a) What is fire and explain about class of fire as per BIS?

Or

(b) What is fire triangle? Explain about fire tetrahedron.

12. (a) Explain about fire extinguisher parts with diagram.

Or

(b) Create maintenance and inspection checklist for fire extinguisher.

13. (a) Write short notes on smoke detector with types.

Or

(b) Discuss about maintenance procedure for fire alarm systems.

14. (a) Explain about types of sprinkler systems.

Or

(b) Explain about fire hydrant point with diagram.

15. (a) Describe maintenance procedure for hydrant sytem.

Or

(b) Explain in detail about NBC 2005.

Part C

($3 \times 10 = 30$)

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

16. (a) Explain in detail about classification of fires and its extinguishers method.

Or

(b) Illustrate in detail about fire control measures in Educational buildings.

17. (a) Explain in detail about fire extinguishers with types.

Or

(b) Explain in detail about fire detection system.

18. (a) Explain in detail about processes involved in installation of fire fighting equipment and its requirement.

Or

(b) outline in detail about fire hydrant systems.

———————

C–3836	Sub. Code
	30715A/ 30615A

M.B.A. DEGREE EXAMINATION

ENVIRONMENT AND INDUSTRIAL SAFETY

NOVEMBER 2021 EXAMINATION

First Semester

OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT

(Common for M.B.A. (E & IS)/M.Sc. (ISH))

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define the term “Wind hill Index”.
2. Mention few effects of Noise at Work.
3. Classify the Hazardous Chemicals.
4. Define TLV.
5. Write the causes of Back Injury.
6. Name few diseases caused by Parasitic Agents.
7. What do you understand by from Toxicology?
8. Write the purpose of Audiometry test.
9. List the importance of Hygiene Practises.

10. Write few uses of Rest Pauses.

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

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

11. (a) Discuss the Hearing Conservation Programme Components.

Or

(b) Explain Ionizing radiation types, sources, application and effects.

12. (a) Explain the Chemical Hazard Control Methods briefly.

Or

(b) Differentiate exposure and dose.

13. (a) Explain the Bio Hazard Control Programme.

Or

(b) Discuss the role of Ergonomics in Preventing Work Related. Musculskeletal disorders.

14. (a) Explain the Pre-Employment testing and Post Employment testing of Occupational Health Services.

Or

(b) Discuss the causes of Occupational diseases and its effects with suitable examples.

15. (a) Discuss Aerobic work and Anaerobic Work with suitable illustration.

Or

(b) Discuss the types, causes of Fatigue and is effects with suitable examples.

Part C ($3 \times 10 = 30$)

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

16. (a) Write an essay on importance of occupational health and safety management.

Or

(b) Discuss the cold and hot working ambience and how these could be controlled.

17. (a) Write in detail on Field survey and sampling Methodology for chemical hazards.

Or

(b) Distinguish biological and ergonomics hazards with explanation and example.

18. (a) Write an essay on industrial toxicology.

Or

(b) Why occupational physiology is an integral part of OSH in industries?

———————

C–3890	Sub. Code
	30616

M.Sc. DEGREE EXAMINATION

INDUSTRIAL SAFETY HYGIENE

NOVEMBER 2021 EXAMINATION

First Semester

INDUSTRIAL HYGIENE I : RECOGNITION OF HAZARDS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write any four causes of fatigue.

2. Define Confine space.

3. What is the importance of HCP?

4. Illustrate: ESOP.

5. What are the hazards exist in equipment's?

6. Write down the legislations for electrical safety.

7. What is Ergonomics?

8. What are the hazards in loading and unloading?

9. What is entanglement hazard?

10. Write any four biological wastes?

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

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

11. (a) Define Housekeeping and 5'S concepts.

Or

(b) What are the safe work conditions at work place?

12. (a) What are the responsibilities of staff at occupational health centre?

Or

(b) Explain the different occupational diseases.

13. (a) Write down the importance of checking and maintenance in electric safety.

Or

(b) What are the key activities for machinery?

14. (a) Explain the different hazards in manual handling.

Or

(b) How do you control the vehicle movement hazards?

15. (a) What are the methods to control the mechanical hazards?

Or

(b) What are the main causes of respiratory disease?

Part C ($3 \times 10 = 30$)

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

16. (a) Elaborate the major requirements to perform hot work in confine spaces.

Or

(b) How to conduct medical check-up programme for chemical industry.

17. (a) Explain in detail about Hearing conservation programme.

Or

(b) Explain the guarding types and importance of guarding.

18. (a) Conduct a detailed risk assessment for manual handling hazards.

Or

(b) Explain biological hazards and its control measures.

———————

C–2230	Sub. Code 30621

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Second Semester

Industrial Safety Hygiene

BEHAVIOUR BASED SAFETY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Personality.
2. Define Motivation.
3. What is mean by Formation?
4. List out organization structure.
5. Why BBs need?
6. List out the demerits of feedback.
7. Define Health training.
8. List out the stages of brainstorming.
9. What is Leadership?
10. How to improve an employee involvement.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What are the factors to be considered for an influencing personality?

Or

(b) How to effectively motivate an employee in work places?

12. (a) Write short notes on "Groups in Organizations".

Or

(b) Explain in brief about Group Dynamics.

13. (a) Draw an "ABC Behaviour model" and explain.

Or

(b) Briefly explain about safety culture.

14. (a) Write the critical impact of social comparison feedback.

Or

(b) Write don'ts at a brainstorming session.

15. (a) Write the barriers to breakthrough performance.

Or

(b) Describe ten myths of behaviour based safety.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail (i) Learning process (ii) Learning theories.

Or

(b) Explain in detail about "Emotions".

17. (a) Write in detail about emergence of informal leaders and working norms.

Or

(b) Detail explanation for BBS.

18. (a) Explain in detail about Behaviour based recognition and celebration.

Or

(b) List out Ten Leadership qualities for total safety culture.

———————

C–2231	Sub. Code 30622

M.Sc. DEGREE EXAMINATION,NOVEMBER 2021

Second Semester

Industrial Safety Hygiene

LEGISLATIONS : ENVIRONMENT, HEALTH AND SAFETY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is mean by inspection?

2. Write some name of hazardous related to process industry.

3. What is mean by bio-medical waste?

4. Define water act 1974.

5. What is mean by safety report?

6. Define on-site plan.

7. What is mean by HWM?

8. Expand ANSI.

9. What is mean by OS and H?

10. Expand HASAWA.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about statutory authorities.

Or

(b) Explain about Tamil nadu factories rule 1950.

12. (a) Write short notes about noise pollution.

Or

(b) What is mean by penalties and its procedure?

13. (a) Explain the following terms :

(i) Safety report,

(ii) Safety data sheet.

Or

(b) Write short notes about the responsibilities of occupier.

14. (a) Write short notes about motor vehicles rule.

Or

(b) Explain about workman compensation act.

15. (a) What is mean by ISO 14000?

Or

(b) What is mean by OSHAS 18000?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the factories act 1948.

Or

(b) Explain about the prevention and control of air pollution and water pollution.

17. (a) Explain detail about preparation of off site and on site plans.

Or

(b) Explain about accounts and audit, penalties, and procedure.

18. (a) Explain about SMPV Rule.

Or

(b) Explain about health and safety work act.

———————

C–2232

Sub. Code
30623

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Second Semester

Industrial Safety Hygiene

ELECTRICAL SAFETY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define current.
2. What is known as voltage?
3. What are types of burns?
4. Define short circuit.
5. What is known as circuit breaker?
6. Define earthing.
7. List out the portable tools.
8. Define PTW.
9. List out the classification of hazardous zone.
10. Define barriers.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the types of electrical fault.

Or

(b) Discuss the IE Rules.

12. (a) Explain the electrical Hazard.

Or

(b) Write short notes on safety in the use of electricity.

13. (a) Discuss the various type of PPE.

Or

(b) How the Earth fault protection is work?

14. (a) Write short notes on cables and its type.

Or

(b) Explain the preventive maintenance.

15. (a) Explain Intrinsically safe Technique.

Or

(b) Explain the temperature classification.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the International Standard on Electrical Safety.

Or

(b) What is Static Electricity and its Hazards and explain the Preventive Measures?

17. (a) Explain Briefly about ELCB.

Or

(b) Discuss the types of PPE used for Electrical Hazards.

18. (a) Explain in detail about the CORONA EFFECT.

Or

(b) Discuss in briefly about self diagnostic features and fail safe concept.

———————

C–2233

Sub. Code
30624

M.Sc. DEGREE EXAMINATION,NOVEMBER 2021

Second Semester

Industrial Safety Hygiene

INDUSTRIAL HYGIENE II – EVALUATION AND CONTROL OF HAZARDS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define accident.
2. What is mean by hazard assessment?
3. What is mean by radiation hazards?
4. Write some workplace violence.
5. What is mean by IITS?
6. Define machine guarding.
7. What is mean by TREM card?
8. Define current.
9. What is mean by HIRA?
10. Define risk.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What is mean by safety audit?

Or

(b) Explain short notes on hierarchy of control measures.

12. (a) How to avoid the pedestrian hazards?

Or

(b) Explain the causes of workplace violence.

13. (a) Write short notes on types of mechanical handling.

Or

(b) Explain about preventive maintenance and its uses.

14. (a) Explain about routes of entry to the human body.

Or

(b) Write some health hazards related to chemicals.

15. (a) Write short notes on personnel hygiene.

Or

(b) What is the need to perform the HIRA before start any work?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain about FTA with suitable example.

Or

(b) Do HIRA for the welding work.

17. (a) Explain about electrical hazards.

Or

(b) What are the precautions taken while transport the hazardous substance?

18. (a) Explain about PHA.

Or

(b) Briefly explain about machine guarding.

———————

C–2234

Sub. Code
30625B

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Second Semester

Industrial Safety Hygiene

HAZARD AND RISK ANALYSIS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is known as Hazard?

2. Write the abbreviation of CAPA.

3. Explain about Frequency rate.

4. What are the types of Accidents?

5. Draw the Henrich Triangle.

6. Write about Hierarch of controls.

7. What is known as Near Miss?

8. Explain about HAZOP.

9. Write about Hazard identification.

10. Who is competent person?

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

Answer **all** questions

11. (a) What is Hazard? What are the types of Industrial Hazards?

Or

(b) Write the levels of consequences and severity?

12. (a) Explain about the risk matrix and draw the Risk Matrix table.

Or

(b) List out the key elements in preparing of JSA.

13. (a) Write about ETA.

Or

(b) What are the basic steps in AIR?

14. (a) Give the explanation about SAFE "T" SCORE.

Or

(b) Write a short note on SHELL MODEL.

15. (a) What is known about Report preparation?

Or

(b) Explain about ALARP.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Briefly explain about JSA.

Or

(b) Write short notes on Hazard.

17. (a) Explain about SOP?

Or

(b) Explain about FMEA

18. (a) Write some words about Accident Investigation Report.

Or

(b) Briefly explain about Risk matrix

———————

C–2236	Sub. Code 30626

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Second Semester

Industrial Safety Hygiene

INTERNATIONAL HEALTH AND SAFETY STANDARDS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is ISO 14000?

2. Who is competence of auditor?

3. Define accident reports.

4. How to identify training needs to workers?

5. What are the general duties of employer?

6. What is health and safety at WORK ACT 1974?

7. What is ILO?

8. Define IMS software.

9. Write the features of IMS.

10. Develop the report and review in integrated management system.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What are the some examples of criteria for determining that an environmental aspect is significant?

Or

(b) Explain managing audit programme and audit activities.

12. (a) What are the developments of ISO 45001?

Or

(b) Explain about investigation corrective action.

13. (a) Explain power of inspector.

Or

(b) What are the general duties of employees?

14. (a) What are the maximum hours of work per week allowed, under ILO standard for shift worker?

Or

(b) Does compulsory overtime constitute forced labour?

15. (a) Write the stages of LCA.

Or

(b) Explain general principle of LCA.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) What is the inlet of the phrase "continual improvement of the EMS to enhance the environmental performance?

Or

(b) Draw the structure and write the features of ISO 45001.

17. (a) Explain about function of authority responsible for maintaining service.

Or

(b) Write briefly about ANSI, AIAHA.

18. (a) What is IMS certification process and explain briefly.

Or

(b) Write the development of ISO 45001 standard.

———————

C–3898	Sub. Code 30631

M.Sc. DEGREE EXAMINATION

INDUSTRIAL SAFETY HYGIENE

NOVEMBER 2021 EXAMINATION

Third Semester

CONSTRUCTION SAFETY ANALYSIS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. What is timber?

2. What is occupational health and hygiene?

3. Write down the different soil types.

4. What is the purpose of safety fuse?

5. How many safety devices used in goods hoists?

6. Illustrate MEWP.

7. Define erection.

8. What are the hazards in scaffolding?

9. What is the safe weight to lift for a human?

10. Define CPR for electrical shock.

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

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

11. (a) Explain the PPE's used in Head, eye and ear protection.

Or

(b) Explain the respiratory diseases and respiratory protection.

12. (a) Explain the supervisor responsibility on excavation.

Or

(b) Explain the hazards in tunneling and control measures.

13. (a) Write short notes on safety measures in tower cranes.

Or

(b) Explain the lifting and carrying technique in manual handling.

14. (a) Explain the hazards in handling acid, acetylene and coals.

Or

(b) Explain the safe use of ladders.

15. (a) Write short hint on use of maintenance of hand tools.

Or

(b) Explain the different hazards involved in hot work.

Part C ($3 \times 10 = 30$)

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

16. (a) Explain the various legal requirements on BOCW act 1996.

Or

(b) Explain the confine space hazards and safety precautions.

17. (a) Explain in detail about guidelines for storage of explosives.

Or

(b) Explain the different types of cranes and its hazards.

18. (a) Elaborate the safe sitting and standing positions with neat posture diagram.

Or

(b) Explain the various treatment procedure for electrical shock.

———————

C–3899	Sub. Code 30632

M.Sc. DEGREE EXAMINATION

INDUSTRIAL SAFETY AND HYGIENE

NOVEMBER 2021 EXAMINATION

Third Semester

INDUSTRIAL SAFETY ENGINEERING

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Define plant layout.

2. Expand LPG and CNG.

3. List out the types of guarding.

4. What is flywheel?

5. What is meant by flash back arrestor?

6. Define brazing.

7. Define sand blasting.

8. Write down the safety precautions in radiography.

9. What is meant by steam testing?

10. Define PDCA cycle.

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

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

11. (a) Explain the facilities for safe effluent disposal and treatment plants.

Or

(b) Give outline on safe layout for refineries.

12. (a) Write down the authorized entry to hazardous installations.

Or

(b) Discuss hazards in rotating parts and importance of guarding.

13. (a) Write about gas welding and oxygen cutting.

Or

(b) Write down the safety precautions for brazing.

14. (a) Give short notes on electro plating.

Or

(b) Write down the radiation hazards.

15. (a) How to develop the OHS policy?

Or

(b) Write down the features of OSHAS policy.

Part C ($3 \times 10 = 30$)

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

16. (a) Explain in detail about safe location of ammonia, explosives and propellants.

Or

(b) Explain the safe layout for fireworks and match works.

17. (a) Explain in detail about selection and suitability of various machines.

Or

(b) Explain in detail about distribution and handling of industrial gases.

18. (a) Elaborate the personal monitoring devices in radiography.

Or

(b) Explain in detail about short term action plan and development of action plan.

———————

C–3900	Sub. Code
	30633

M.Sc. DEGREE EXAMINATION

INDUSTRIAL SAFETY AND HYGIENE

NOVEMBER 2021 EXAMINATION

Third Semester

EVOLUTION OF MODERN SAFETY CONCEPT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is IRT?

2. What is safety survey?

3. What is permissible autocrat?

4. What is the purpose of management theories?

5. Differentiate FTA and ETA.

6. Differentiate quantitative and qualitative analysis.

7. Define heinrich's theory.

8. What is gross hazard analysis?

9. Define O.C curves.

10. What is hazard rate?

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

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

11. (a) Explain the evaluation of performance of supervisors in safety.

Or

(b) Explain briefly about safety inspection.

12. (a) Write short notes on contingency theory.

Or

(b) Explain about directive democrat and directive autocrat.

13. (a) Explain risk analysis and procedures.

Or

(b) Explain the procedure of FMEA.

14. (a) Explain about behavior theory.

Or

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

15. (a) Explain series parallel and mixed configuration.

Or

(b) Explain in detail about product life cycles.

Part C ($3 \times 10 = 30$)

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

16. (a) Explain briefly about line and staff functions for safety.

Or

(b) Explain in details about FTA and ETA.

17. (a) Explain in detail about human factors theory.

Or

(b) Explain briefly about multilinker event sequencing method.

18. (a) Explain in detail about PHA.

Or

(b) Explain the various safety warning systems.

———————

C–3901	Sub. Code 30634

M.Sc. DEGREE EXAMINATION

INDUSTRIAL SAFETY HYGIENE

NOVEMBER 2021 EXAMINATION

Third Semester

COMPUTER AIDED HAZARD ANALYSIS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List out any four societal risks.

2. What is human error analysis?

3. Illustrate RSST.

4. What is the purpose of deflagration test?

5. What is FETI?

6. Draw explosion pentagon.

7. Differentiate pool fire and jet fire.

8. What is plant layout?

9. What is the major issue in Bhopal disaster?

10. What was the impact due to port Hudson disaster?

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

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

11. (a) Explain in detail about PHA.

Or

(b) Explain the different types of safety warning systems.

12. (a) Write short notes on TGA.

Or

(b) How do you conduct the impact and friction sensitiveness test?

13. (a) Explain the role of software usage in risk analysis.

Or

(b) Explain the various indices on FETI.

14. (a) Explain the effect of heat radiation.

Or

(b) Explain in detail about the causes of gas and vapour release.

15. (a) Give short hint on seveso disaster.

Or

(b) Give short hint on Mexico disaster.

Part C ($3 \times 10 = 30$)

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

16. (a) Explain briefly about individual, group, societal, voluntary and involuntary risks.

Or

(b) Explain in detail about card gap test.

17. (a) Explain the procedure used in FETI.

Or

(b) Explain short notes on FMEA for mechanical and electrical systems.

18. (a) Explain in detail about Bhopal disaster.

Or

(b) Explain in detail about reactor safety study of nuclear power plant.

———————

C–3904	Sub. Code
	30635C

M.Sc. DEGREE EXAMINATION

INDUSTRIAL SAFETY AND HYGIENE

NOVEMBER 2021 EXAMINATION

Third Semester

HAZARDOUS WASTE MANAGEMENT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define manifest system.
2. What is Hazardous waste?
3. Write down the characterization of waste.
4. Write any four categories of bio medical waste.
5. Define waste management.
6. What is radioactive waste?
7. Define Landfill.
8. What is incineration?
9. What are the chemicals used for treatment process?
10. Write down any four toxic wastes.

Part B (5 × 5 = 25)

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

11. (a) Explain the safety precautions to transport hazards waste.

Or

(b) Explain the SDS with short example.

12. (a) Explain the 3R concept for plastic waste.

Or

(b) Give short hint on fly ash rules.

13. (a) Give short notes on solid waste management.

Or

(b) Explain the disposal procedure for nuclear waste.

14. (a) Write short notes on importance of landfill design.

Or

(b) Explain the infected waste and disinfection methods.

15. (a) Explain the water contamination and remediation.

Or

(b) Write short notes on slurry phase bio reactor.

Part C ($3 \times 10 = 30$)

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

16. (a) Explain in detail about hazardous waste storage, treatment and disposal.

Or

(b) Explain in detail about municipal solid waste rules.

17. (a) Explain in detail about MSIHC rules 1989.

Or

(b) Discuss the sources of radioactive and its health effects.

18. (a) Explain in detail about landfill covers and incineration.

Or

(b) Explain the composting concept and principles of bio degradation of toxic waste.

———————

C–5250	Sub. Code
	30641

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Fourth Semester

Industrial Safety And Hygiene

ENVIRONMENTAL SAFETY MANAGEMENT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is DEFORESTRATION?

2. Write the safe limits of oxygen in any working atmosphere.

3. What is the safe limits (TDS) of drinking water?

4. Write down three sources for water pollution in residential areas.

5. What are the different categories of waste?

6. Who are all responsible waste management?

7. What is dust and their classification at work place of an employee?

8. What is sampling and why it is performed?

9. Which part environment is affected by cement industry?

10. Which parts of environment is affected by dying and pigment industry?

Part B (5 × 5 = 25)

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

11. (a) Explain classification and properties ot air pollutants.

Or

(b) How quality of air is measured and what is Air Index?

12. (a) What are the industrial waste and operation pose major threat to water pollution?

Or

(b) Explain purpose of advanced waste water treatment and benefits.

13. (a) Explain the term BIO hazard and mention industries involved.

Or

(b) Explain the methods of collection of liquid waste and disposal.

14. (a) What is dust monitor and explain any one dust monitor operating principle?

Or

(b) What is Lux meter and explain the operating principle?

15. (a) Explain the term eco-friendly energy in brief.

Or

(b) Explain the benefits of pollution control in textile industries.

Part C (3 × 10 = 30)

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

16. (a) Explain how automobile industry is one of the causes for air pollution?

Or

(b) What are the different industrial effluents and their treatment and disposal?

17. (a) Explain 4 R (reduce, reuse, recycle and recover) in waste management process.

Or

(b) What is pollution control board and write the salient features of pollution control law?

18. (a) Explain the effect on environment and natural resources from the process of thermal power station?

Or

(b) Explain the OZONE layer, its importance and depletion of ozone layer from industrial activity.

———————

C–5251	Sub. Code 30642

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Fourth Semester

Industrial Safety And Hygiene

EHS MANAGEMENT STANDARDS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. ISO 9001:1994 is deals with?

2. Who is the certification agency for EMS?

3. Explain the term strategy and planning.

4. Define short term plan.

5. Define the purpose of review and reporting.

6. What are the different ways of communication of information in an organization?

7. What do you understand Audit plan?

8. What is the difference between internal and external audit?

9. Explain Eco labeling.

10. Explain the term continual improvement.

Part B (5 × 5 = 25)

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

11. (a) Explain the structures and features of OSHAS 18001.

Or

(b) Explain OH and S management system elements, specification and scope.

12. (a) Explain the methodology for developing action plan and priorities.

Or

(b) Explain the purpose of objectives and setting targets.

13. (a) What do you understand by proactive and reactive monitoring?

Or

(b) What are the factors you will consider prior to making a training program?

14. (a) What is Environmental policy, explain the general principles?

Or

(b) Explain the clauses of 4.1 to 4.5 of ISO 14004.

15. (a) Explain ISO 18002 and its salient principles.

Or

(b) Explain the ISO 14040 and its principles.

Part C (3 × 10 = 30)

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

16. (a) Explain the benefits of certification of various ISO's for an organization.

Or

(b) Explain the contents of OH and S policy in detail.

17. (a) How does the performance is measured, explain the measurement techniques and measuring equipment?

Or

(b) Explain documentation requirements, 3 level of requirements for a ISO 14000 based EMS.

18. (a) Explain the eco labels of ISO 14021, ISO 14024 type I labels, type II labels in detail.

Or

(b) Explain the purpose of records, records management, investigation, and information.

———————

C–5252	Sub. Code 30643B

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Fourth Semester

Industrial Safety And Hygiene

SAFETY IN LOGISTICS AND WAREHOUSE

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define the term logistics management.

2. Why we need store items in stock?

3. Why we need to train the tanker lorry driver?

4. What is tachograph?

5. Name any four mechanical handling equipment used in ware house.

6. What is grease rack and wash rack operation?

7. What is factor of safety?

8. How should we store wire rope slings?

9. Define fire in simple term with a diagram.

10. What is toxicity index?

Part B (5 × 5 = 25)

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

11. (a) Define the minimum and maximum Inventory control system.

Or

(b) What is the role of a ware house manager?

12. (a) What are the requirements of hazardous goods transport vehicle?

Or

(b) Describe decanting and make procedure for decanting.

13. (a) List out the requirement of gasoline handling manually.

Or

(b) How do you ensure the safety of workers on foot in a ware house where motorized equipments are used?

14. (a) Describe the sequence and procedure for manual lifting.

Or

(b) What are all the defects not acceptable in wire rope slings?

15. (a) Explain DOW fire and explosion index.

Or

(b) Explain the special safety measures for control of fire and explosion in handling.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the different types of ware houses, functions, and ware using cost.

Or

(b) What is the accident reporting and investigation procedure for hazardous goods carrying vehicle?

17. (a) Explain the necessity of forklift inspection and maintenance and prepare daily inspection checklist.

Or

(b) Describe the sequence of manual lifting and what is statutory requirements for manual lifting.

18. (a) What is firefighting systems, different types, and explain any type in detail?

Or

(b) Explain importance of driver relaxation and rest pauses.

———————

C–5246	Sub. Code
	30741/30641

M.Sc./M.B.A. DEGREE EXAMINATION, NOVEMBER 2021.

Fourth Semester

ENVIRONMENTAL SAFETY MANAGEMENT

(Common for M.Sc., (HSE) / M.B.A. (E & IS))

(2016 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is the need for desalination?

2. Comment on different types of waste generated.

3. What is remote sensing?

4. Comment on GMOs.

5. Comment of Bhopal gas tragedy.

6. Comment on Chipko movement.

7. What are hazardous wastes?

8. What is Red data book?

9. What is silent valley? Comment on its importance.

10. How Mathura and TajMahal are important in relation to environmental protection.

Part B (5 × 5 = 25)

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

11. (a) Give an account of mineral resources and its management.

Or

(b) Give an account of the impact of ecotourism.

12. (a) Explain the measures to be taken to monitor the environmental quality.

Or

(b) Explain the need for Environmental monitoring.

13. (a) Discuss about Hazards due to Bio process Dilution.

Or

(b) Elaborate the need and the relevance of Environmental impact assessment.

14. (a) Explain the role of Green Peace Movement in the protection of environment.

Or

(b) Give a General Account of Environment with emphasis on Lithosphere.

15. (a) Biovillages are example for sustainable development. Justify.

Or

(b) Discuss the impact of nuclear radiations.

Part C (3 × 10 = 30)

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

16. (a) Discuss in detail forest and wildlife resources.

Or

(b) Write an essay on biomedical waste management.

17. (a) Discuss the problems associated with river cleaning projects.

Or

(b) Explain the importance of biosensors in environmental monitoring

18. (a) Write notes on the following:

(i) Composition of Atmosphere

(ii) Bio-accumulation

(iii) Acid Rain

Or

(b) Describe Ozone Layer Depletion and its impact on plants and animals.

———————