

C-1160

Sub. Code

30611

M.Sc. DEGREE EXAMINATION, NOVEMBER 2019

First Semester

Health Safety Environment

SAFETY IN FACILITY DESIGN

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Name any two hazards of acetylene.
2. Define ETP & STP.
3. What is meant by layout?
4. Define fire hydrant.
5. Define LEV.
6. Define glaring.
7. what is 5 S?
8. What are the types of slings?
9. What are the types of cranes?
10. Name any two safety devices of cranes.

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) What are the safe storage requirements of LPG?

Or

- (b) What are the safe storage requirements of ammonia?

12. (a) Discuss about selection and placement of fire extinguisher in process industry.

Or

- (b) Discuss about layout requirements to construct STP.

13. (a) Explain about 5 S principles.

Or

- (b) Explain about types of LEV.

14. (a) Write down the safety guidelines to store hazardous materials.

Or

- (b) Discuss about ergonomic related hazards while doing manual material handling.

15. (a) Explain about hazards and control measures of powered industrial trucks.

Or

- (b) Explain about hazards and control measures of gasoline powered industrial trucks.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain about safety requirement in location selection and layout design of fireworks industries.

Or

- (b) List down the tools and tackles required for lifting and explain its maintenance procedures.

17. (a) Discuss about selection and operation of cranes.

Or

- (b) Explain about emergency procedures of a chemical industry.

18. (a) Prepare a checklist for crane.

Or

- (b) Prepare a training points which are to be discussed with rigging team before lifting.

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Sub. Code

30612

M.Sc. DEGREE EXAMINATION, NOVEMBER 2019

First Semester

Health Safety Environment

HUMAN FACTORS IN ENGINEERING

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is meant by body mechanics?
2. Define MSD.
3. What is meant by anatomy?
4. What is accident proneness? -
5. Define motivation.
6. Define attitude.
7. What is meant by anthropometry?
8. What are the sources of human variability?
9. Name any 2 examples for repetitive works.
10. Define WRULD

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) Explain about applications of ergonomics.
Or
(b) Explain about behavioral aspects of posture
12. (a) Discuss about the principles of learning and forgetting
Or
(b) Discuss about factors contributing to personality
13. (a) Explain about the applications of anthropometry
Or
(b) Explain about fundamental aspects of standing and sitting work.
14. (a) How to reduce and control MSD in workplace?
Explain
Or
(b) Discuss about biomechanics of manual handling
15. (a) Give some guidelines for design of static work
Or
(b) What are the principles for the design of visual displays?

Part C**(3 × 10 = 30)**

Answer all questions.

16. (a) Write in detail about history of ergonomics and future direction for ergonomics.
Or
(b) Explain in detail about job enrichment theory.

17. (a) Discuss about emotion, frustration and motivation

Or

(b) Explain about principles of applied anthropometry

18. (a) Explain about human factors engineering

Or

(b) Explain in detail about prevention and control of manual handling injuries in workplace

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30613

M.Sc. DEGREE EXAMINATION, NOVEMBER 2019

First Semester

Health, Safety Environment

BASICS OF SAFETY ENGINEERING

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define safety.
2. How to increase the productivity without compensate the safety?
3. What is meant by unsafe act?
4. What is meant by unsafe condition?
5. What is meant by AIR?
6. What are the documents are required while accident happen?
7. What is meant by frequency rate?
8. What is meant by safety "T" score?
9. What is the objective of safety training?
10. What is the difference between tool box talk and pep talk?

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) What is meant by “IRT”?

Or

(b) What is the objective of safety inspection?

12. (a) What is meant by Non Conformity Reporting (NCR)?

Or

(b) What is the main objective of safety auditing and how to conduct that?

13. (a) How to record the accident in the industry?

Or

(b) Explain the term “COST OF ACCIDENT”.

14. (a) Explain about the safety activity rate

Or

(b) Explain about the terms safety activity rate.

15. (a) What is the role of government agencies in the safety?

Or

(b) What is the objective of safety celebration in the industry?

Part C**(3 × 10 = 30)**Answer **all** questions.

16. (a) Explain the following terms
- (i) Safety sampling
 - (ii) Safety survey.

Or

- (b) How to identify the unsafe act and unsafe condition and write some UA and UC?
17. (a) How to document the accident and what is the objective of that?

Or

- (b) What is the importance of training and what are the types of training methods?
18. (a) Explain the following terms.
- (i) Domino sequence.
 - (ii) Safety pledge.
 - (iii) National safety day.

Or

- (b) What is the need to report the accident to the government and how to report that?
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30621

M.Sc. DEGREE EXAMINATION, NOVEMBER 2019

Second Semester

Health Safety Environment

BEHAVIOUR BASED SAFETY

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What are the types of motivation?
2. What are types of misbehavior?
3. Define group dynamics.
4. Define organizational structures.
5. What is ABC behavior model?
6. What is the feedback processes involved in BBS?
7. Define Safety training.
8. What are the types of training?
9. Define safety leadership.
10. What are the MYTHS of BBS?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about the emotional intelligence.

Or

- (b) Explain about the components and characteristics of attitudes.

12. (a) Explain about the group decision making techniques.

Or

- (b) Explain about the groups in organization.

13. (a) Explain about the safety culture.

Or

- (b) Explain about the ABC model of behavior changes.

14. (a) Explain about the INSITU safety involved in brainstorming.

Or

- (b) What are the stages involved in brainstorming?

15. (a) Explain about the keys to getting the best from behavior based safety coaching.

Or

- (b) Explain about the how to sustain employees involvement in occupational safety?

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Describe in details about the brainstorming as a tool for training in safety.

Or

- (b) Describe in details about the learning and its process.

17. (a) Describe in details about the BBS.

Or

- (b) Explain about the emergence of informal leaders and working norms.

18. (a) Explain about the ten leadership qualities for total safety culture.

Or

- (b) Describe in details about the occupational safety and health training.

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30622

M.Sc. DEGREE EXAMINATION, NOVEMBER 2019

Second Semester

Health Safety Environment

LEGAL ASPECTS OF HEALTH AND SAFETY

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define factory.
2. Define artificial humidification.
3. Define muster roll
4. Define accident.
5. Define water pollution.
6. Define air pollution.
7. Define hazardous waste.
8. Define E waste.
9. Define noise.
10. Define pressure vessels.

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) Briefly discuss about welfare facilities.

Or

- (b) Briefly discuss about ventilation requirement.

12. (a) Briefly discuss about dangerous occurrence.

Or

- (b) Briefly discuss about occupational diseases.

13. (a) Briefly discuss about water pollution control.

Or

- (b) Briefly discuss about air pollution control.

14. (a) Briefly explain about bio waste management.

Or

- (b) Briefly explain about E Waste management.

15. (a) Briefly explain about dangerous machine act.

Or

- (b) Briefly explain about Indian boilers act.

Part C**(3 × 10 = 30)**Answer **all** questions.

16. (a) Describe in detail about factory licensing.

Or

- (b) Describe in detail about public liability insurance act 1991.

17. (a) Describe in detail about batteries management and handling rules 2001.

Or

- (b) Describe in details about bio medical waste management rules 1998.

18. (a) Describe in details about workmen's compensation act, 1923.

Or

- (b) Describe in detail about noise rules 2000.

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30623

M.Sc. DEGREE EXAMINATION, NOVEMBER 2019

Second Semester

Health Safety environment

ELECTRICAL SAFETY ENGINEERING

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is meant by electrostatics?
2. What is meant by first aid?
3. What is meant by over current?
4. What is the resistivity for earthing?
5. What is FRLS insulation?
6. What are the types of fuse?
7. What is meant by PTW?
8. What is meant by preventive maintenance?
9. List out some equipment certifying agencies.
10. What are the types of gases?

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) What is meant by first aid? Explain in brief.

Or

- (b) Write short notes on EMI.

12. (a) Write about classes of insulation.

Or

- (b) What is static electricity and write some causes of static electricity?

13. (a) Explain the following terms :

- (i) Safe limit of amperage
- (ii) System grounding.

Or

- (b) What are the safety precautions while handling portable electrical appliances?

14. (a) Explain sequence interlock.

Or

- (b) Explain discharge rod.

15. (a) Explain intrinsically safe equipment.

Or

- (b) Explain fire barriers.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the Indian electricity act 1956.

Or

(b) Explain the electrical hazards.

17. (a) Explain lightning and its effects.

Or

(b) Explain about ELCB.

18. (a) Explain classification of hazardous areas.

Or

(b) Explain about insulation and continuity test.

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30624

M.Sc. DEGREE EXAMINATION, NOVEMBER 2019

Second Semester

Health Safety Environment

CHEMICAL SAFETY ENGINEERING

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is the use of pressure relief device?
2. What is meant by over pressure protection?
3. What is the use of plant inspection?
4. What is meant by acoustic emission?
5. What is the importance of PTW?
6. What is format in plant operation?
7. Define APELL.
8. What are the hazards related in the plant maintenance?
9. What are the hazards related in the LPG storage?
10. What is meant by vacuum valves?

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) How to disposal the chemical wastages?

Or

(b) Explain the importance of design process.

12. (a) Explain post-commissioning documentation.

Or

(b) Explain the performance monitoring in the plant commissioning.

13. (a) Explain detail about trip systems

Or

(b) Explain detail about operating discipline.

14. (a) Write short notes on preparation for maintenance.

Or

(b) Write short notes on tank cleaning.

15. (a) Explain shortly about chlorine storage.

Or

(b) Explain shortly about fire prevention and protection.

Part C**(3 × 10 = 30)**Answer **all** questions.

16. (a) Explain detail about loading and unloading facilities.

Or

- (b) Explain detail about ON-site and OFF-site emergency plan.

17. (a) Explain the following terms.

(i) Hot works

(ii) Leak testing

Or

- (b) Explain about reaction hazard evaluation.

18. (a) Explain detail about commissioning problem.

Or

- (b) How to handle the LPG and LNG?

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Sub. Code

30625B

M.Sc. DEGREE EXAMINATION, NOVEMBER 2019

Second Semester

Health and Safety Environment

APPLIED INDUSTRIAL ERGONOMICS

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. Define : Ergonomics.
2. What do you mean by Productivity?
3. What do you mean by Accident?
4. Give one example of incident.
5. What are the Characteristics of good work?
6. What is PPE?
7. Define : Invisible Protective Barriers.
8. What is Hazard?
9. Write about types of Hazards.
10. What are the types of Control?

Part B**(5 × 5 = 25)**Answer **all** the questions.

11. (a) Explain the Principles of Motion Economy.
Or
(b) Write a short note on Fatigue.
12. (a) What are the Human Factors Contributing to accidents in work?
Or
(b) Explain the applications of Ergonomics.
13. (a) Write about the Ergonomics Considerations in PPE design.
Or
(b) Explain Types of PPE.
14. (a) Briefly discuss about Machine Guarding.
Or
(b) Write about Operator Training.
15. (a) Explain the job and Personal Factors.
Or
(b) Write a short note on Types of Displays.

Part C**(3 × 10 = 30)**Answer **all** questions.

16. (a) Write a short note on Invisible Protective Barriers.
Or
(b) Explain in detail about Physical and mental Strain.

17. (a) Discuss in detail about Physiology of Workers.

Or

(b) Write about Process and Equipment Design.

18. (a) Give the guidelines for Safe Design and Postures.

Or

(b) Explain in detail about Selection and Training.

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Sub. Code

30631

M.Sc. DEGREE EXAMINATION, NOVEMBER 2019

Third Semester

Health, Safety Environment

SAFETY IN CONSTRUCTION

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. What is meant by quality assurance?
2. Which form is used to record the accident in (BOCW ACT 1996) the construction site?
3. What is meant by air contamination?
4. What are the types of scaffolding?
5. How to test the safety net in the construction site?
6. What is meant by safe access?
7. What is the use of concrete vibrators?
8. What are the types of cranes?
9. What is meant by demolition?
10. What is the use of pre survey inspection?

Part B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Explain about causes of fatal accidents.
Or
(b) Write short notes on “PTW”.
12. (a) What are the hazards related to the work over water?
Or
(b) Write short notes on “FALSE WORK”.
13. (a) What are the points are remember while inspect the ladder?
Or
(b) What are the points are consider during scaffolding inspection?
14. (a) How to inspect the mobile cranes.
Or
(b) How the construction machinery reduce the manual work in the construction?
15. (a) How the fire occur in the demolition work?
Or
(b) What is the importance of first aid in the demolition field?

Part C

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Explain the stages of construction.
Or
(b) Explain about confined space and what are the hazards related in the confined space.

17. (a) What are the hazards related to the during scaffolding recreation work and how to control it.

Or

- (b) What is the safety precautions followed while using electrical portable tools?

18. (a) What are the hazards related during demolition process and write some control measure.

Or

- (b) Explain about power plant construction.
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Sub. Code

30632

M.Sc. DEGREE EXAMINATION, NOVEMBER 2019

Third Semester

Health Safety Environment

INDUSTRIAL SAFETY ENGINEERING

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. Define zero mechanical state (ZMS).
2. What are the types of guarding?
3. List out the hazards in hot work.
4. What is flashback arrestor.
5. What is LPG?
6. What is CNG?
7. Define electroplating.
8. Define radiography.
9. What is hydro testing?
10. List out the physical and chemical properties of acetylene.

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) Explain the safe location of chemical storage.
Or
(b) Explain the welding process and its types.
12. (a) Explain the electroplating process.
Or
(b) Explain dynamic balancing.
13. (a) What are the industrial gases and mention its colour coding?
Or
(b) Explain the storage and handling of gas cylinders.
14. (a) Explain inspection and testing.
Or
(b) Explain hydro testing.
15. (a) Explain the structure of OHSAS 18001.
Or
(b) Explain continual improvement.

Part C**(3 × 10 = 30)**Answer **all** questions.

16. (a) Explain in detail about plant location and layout.
Or
(b) Explain in detail about performance measurement and monitoring.

17. (a) Explain in detail about internal audit.

Or

(b) Explain the OHSAS certification process.

18. (a) Explain detail about the principles of machine guarding.

Or

(b) Discuss the occupational health and safety management systems specification and scope.

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30633

M.Sc. DEGREE EXAMINATION, NOVEMBER 2019

Third Semester

Health Safety Environment

DISASTER MANAGEMENT AND RESPONSE

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **All** the questions.

1. What are the types of marine disaster?
2. What is disaster management?
3. What is APELL?
4. What is atmospheric pollution?
5. Name some eco friendly products.
6. Define nuclear waste.
7. What is event analysis?
8. What is environmental protection?
9. What is risk assessment process?
10. What is vulnerability?

Part B**(5 × 5 = 25)**Answer **all** the questions.

11. (a) Explain the control methods of geological disaster.

Or

- (b) Explain mass movement and land disaster.

12. (a) Explain crisis management groups.

Or

- (b) Explain environmental policies.

13. (a) Write short notes on

(i) Ozone depletion

(ii) Environmental impact assessment

Or

- (b) Explain eco friendly products

14. (a) Explain control of fires.

Or

- (b) Explain marine pollution and control.

15. (a) Explain natural resources conservation.

Or

- (b) Briefly explain about public liability insurance

Part C

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Explain detail about the hydrological, coastal and marine disasters.

Or

- (b) Explain wind and water related disasters.

17. (a) Explain detail about ONSITE and OFFSITE emergencies.

Or

- (b) Explain OFFSHORE and ONSHORE drilling method.

18. (a) Discuss about the policy initiatives and future prospects.

Or

- (b) Write short notes on
- (i) Forecasting and warning
 - (ii) Land use planning.
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Sub. Code

30634

M.Sc DEGREE EXAMINATION, NOVEMBER 2019

Third Semester

Health, Safety Environment

HAZARD ANALYSIS

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. What is PPE?
2. Define FTA.
3. What do you mean by ETA?
4. What is FMEA?
5. What is card gap test?
6. What is flash fire?
7. What do you mean by risk acceptance level?
8. Define voluntary risk.
9. Define plotting.
10. Define Pool fire.

Part B**(5 × 5 = 25)**Answer **all** the questions

11. (a) Explain the risk matrix.

Or

(b) Explain the advantages of checklist.

12. (a) Explain the steps of HIRA.

Or

(b) Write the methods to identify the hazards.

13. (a) Write about human error analysis.

Or

(b) Explain technological risk.

14. (a) Explain the effects of explosion.

Or

(b) Explain the two phase release.

15. (a) Explain impact sensitiveness test.

Or

(b) Write the properties of chemical.

Part C**(3 × 10 = 30)**Answer **all** the questions.

16. (a) Explain about FMEA.

Or

(b) Explain in detail about ETA.

17. (a) Explain in Detail About HIRA.

Or

(b) Explain in detail about FTA.

18. (a) Explain in detail about HAZOP.

Or

(b) Explain in detail about HAZAN.

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Sub. Code

30642

M.Sc. DEGREE EXAMINATION, NOVEMBER 2019

Fourth Semester

Health Safety Environment

EHS MANAGEMENT STANDARDS

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define OHSAS.
2. Define ISO 9001.
3. What are the general principles of OHSAS 18001?
4. What are the objectives of OHSAS 18001?
5. What is proactive monitoring system?
6. What are the measurement techniques involved in OHSAS 18001?
7. Define EMS.
8. Define environmental audit.
9. Define EIA.
10. Define Eco-label.

Part B**(5 × 5 = 25)**Answer **all** questions.

11. (a) Discuss about the benefits of OHSAS 18001 certification.

Or

- (b) Discuss about the salient features of OHSAS 18001.

12. (a) Describe about the methodology planning of OHSAS 18001.

Or

- (b) Write about the clauses of OHSAS 18001.

13. (a) Describe about the responsibilities of top management in OHSAS 18001.

Or

- (b) Discuss about the documentation of OHSAS 18001.

14. (a) Discuss about the importance of ISO 14000 to the management.

Or

- (b) Discuss about the environmental audit plan.

15. (a) Describe about the benefits of EIA.

Or

- (b) What are the stages involved in ISO 14040?

Part C**(3 × 10 = 30)**Answer **all** questions.

16. (a) Discuss about the scope, elements and specification of OH & S management system.

Or

- (b) Discuss about the general principle, strategy and planning of OH & S policy.

17. (a) Discuss about the proactive and reactive monitoring system.

Or

- (b) Describe about the ISO 14000 audit and steps are involved in the audit.

18. (a) Describe in detail about the ISO 14020.

Or

- (b) Describe about the ISO 14040.
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