

CP-9559

Sub. Code

30712

M.B.A. DEGREE EXAMINATION, NOVEMBER 2018

First Semester

Environment and Industrial Safety

ORGANIZATIONAL BEHAVIOR AND MANAGEMENT

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define organizational behavior.
2. Define individual behavior.
3. Define attitudes.
4. Write about work satisfaction.
5. What are the types of transactions?
6. Define ego.
7. Define formal and informal groups.
8. What are the norms involved in group?
9. Write about organizational culture.
10. List out the types of teams.

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

11. (a) Write a short note on
- (i) individual behavior
 - (ii) values
 - (iii) personality
 - (iv) perception.

Or

- (b) Write short notes on manager's roles and skills.

12. (a) Explain the applications of transactional analysis.

Or

- (b) Define organizational behavior and explain the behaviors at work.

13. (a) Explain about managerial interpersonal styles.

Or

- (b) Explain the concept of group and group dynamics.

14. (a) Explain in detail about group decision making.

Or

- (b) Differentiate the concept of group and group dynamics.

15. (a) Write about human resource management policies.

Or

- (b) Write short notes on diversity at work.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Draw the flow chart of factors affecting values and explain in detail.

Or

- (b) Explain the theories of job satisfaction.

17. (a) Explain the process of developing interpersonal trust and understanding.

Or

- (b) Define team building and explain its process.

18. (a) Write in detail about the factors affecting for organizational behavior.

Or

- (b) Explain the key ideas involved in transactional analysis.
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CP-9560

Sub. Code

30713

M.B.A. DEGREE EXAMINATION, NOVEMBER 2018

First Semester

Environment and Industrial Safety

BASICS OF SAFETY MANAGEMENT

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is meant by productivity?
2. Define job safety analysis.
3. What are the components of safety audit?
4. Write any two safety records.
5. What is non-reportable accidents?
6. What is meant by safety committee?
7. List out the different types of disabilities?
8. What is incident rate?
9. Write any two training methods.
10. Define motivation.

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

11. (a) Briefly explain the evolution of modern safety concept.

Or

- (b) Write about IRT in detail.

12. (a) Explain about NCR in detail.

Or

- (b) What are implementation of audit indication?

13. (a) Write the principles of accident prevention.

Or

- (b) Write short notes on Domino sequence.

14. (a) Write the calculation of accident indices.

Or

- (b) Explain safety activity rate with suitable example.

15. (a) Write the various training methods.

Or

- (b) Explain about domestic safety and training.

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

16. (a) Write details about line and staff functions for safety.

Or

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

17. (a) Explain the identification of unsafe acts of workers and unsafe condition in the shop floor.

Or

- (b) What are the unsafe act and condition? Explain in detail.

18. (a) Enumerate the methods of promoting safe practice.

Or

- (b) Briefly explain about communication.
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CP-9561

Sub. Code

30714

M.B.A. DEGREE EXAMINATION, NOVEMBER 2018

First Semester

Environment and Industrial Safety

**FIRE SAFETY – DESIGN, INSTALLATION AND
MAINTENANCE**

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define fire point.
2. What are the classification of fire?
3. Mention the different size of fire extinguisher.
4. How will you maintenance the records?
5. What is meant by detection zone?
6. Write any two requirements of optical beam detectors.
7. What is the use of hose reel?
8. Define hydrant installation.
9. What are the arrangement need to exists?
10. What is fire load?

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

11. (a) Briefly explain about mode of heat transfer.

Or

- (b) What are the fire safety have to be consider in public places?

12. (a) Write the procedure for inspection and maintenance of fire extinguishers.

Or

- (b) Write and explain the classification of hazards.

13. (a) Explain about optical smoke detector with neat sketch.

Or

- (b) What are the requirements need for aspirating types of detection system?

14. (a) Explain about fire pump and pump house.

Or

- (b) Write short notes on pumping arrangement.

15. (a) Explain about the capacity and arrangement of exists.

Or

- (b) Write the classification of building based on occupancy.

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

16. (a) Write the building design procedure as per national building code.

Or

- (b) Write the procedure for installation of fire extinguishers.

17. (a) Explain about UV flame detector.

Or

- (b) Write and explain about typical fire fighting installations.

18. (a) What are testing is required for installing fire extinguishers?

Or

- (b) Explain about arrangements of exists.

CP-9558

Sub. Code

30711

M.B.A. DEGREE EXAMINATION, NOVEMBER 2018

First Semester

Environment and Industrial Safety

RELIABILITY ENGINEERING

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define hazard and risk.
2. Difference between voluntary and involuntary risk.
3. What is calorimeter?
4. What is card gap test?
5. Define VCE and its types.
6. Define hazard identification.
7. Define BLEVE.
8. What is convey report?
9. What is detonation test?
10. Define effects of explosion.

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

11. (a) Write a short note on hazard operability analysis.
- Or
- (b) Write a short note on hazard monitoring.
12. (a) Write the short note on differential scanning calorimeter.
- Or
- (b) Write a short note on thermo gravimetric analyzer.
13. (a) Write about the HAZAN.
- Or
- (b) Write about software on risk analysis.
14. (a) Write a short note on chemical inventory analysis.
- Or
- (b) Write a short note on BLEVE.
15. (a) Explain about flixborough disaster.
- Or
- (b) Write about seveso disaster.

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

16. (a) Explain detail about hazard assessment.
- Or
- (b) Explain in detail about the sensitiveness test and its types.

17. (a) Explain the steps involved in conducting FMEA study in detail.

Or

- (b) Explain in detail about fire explosion and toxicity index.

18. (a) Discuss in detail about Reaction System Screening Tool (RSST).

Or

- (b) Explain in detail about past accident analysis as information sources for hazard analysis and consequences analysis of chemical accident.
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CP-9562

Sub. Code

30715a

M.B.A. DEGREE EXAMINATION, NOVEMBER 2018

First Semester

Environment and Industrial Safety

**OCCUPATIONAL HEALTH AND SAFETY
MANAGEMENT**

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define occupational damage.
2. What is meant by wind chill index?
3. Differentiate between exposure and dose.
4. What is the measurement procedure of air sampling instrument?
5. Define parasitic agents.
6. List some building design work related to musculo skeletal disorders.
7. What is meant by occupational health services?
8. What are the vital function tests?
9. Define efficiency.
10. What is meant by fatigue?

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

11. (a) Briefly explain about hearing conservation programs.

Or

- (b) Write detail about control measures.

12. (a) Write short notes on sampling methodology.

Or

- (b) Explain about engineering control and its design specification.

13. (a) Write and explain classification of biohazardous agents.

Or

- (b) What are the works to be ensure for musculoskeletal disorder?

14. (a) Explain about occupational related diseases.

Or

- (b) What are the tests to be conducted for cardio pulmonary resuscitation?

15. (a) Briefly explain about occupational work capacity.

Or

- (b) Write detail about categorization of job heaviness.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain about OSHA standards.

Or

(b) Write about TLV with suitable hygiene calculation.

17. (a) Describe about CTS in detail.

Or

(b) Enumerate the gas poisoning.

18. (a) Briefly explain about aerobic and anaerobic work.

Or

(b) Enumerate the noise control program.

CP-9563

Sub. Code

30715b

M.B.A. DEGREE EXAMINATION, NOVEMBER 2018

First Semester

Environment and Industrial Safety

SAFETY IN MINING INDUSTRY

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Write any two prevention of accident.
2. What are the different types of hand tools?
3. Define water flooding.
4. What is meant by noise-electrical hazard?
5. What is gas detectors?
6. Write any two personal protective equipment.
7. Define control chart.
8. Explain about activity relationship analysis.
9. What are the different types of accident analysis?
10. What is meant by cost of accident?

Part B**(5 × 5 = 25)**Answer **all** questions, choosing either (a) or (b).

11. (a) What are the causes and prevention of accident from belt and bucket conveyors?
Or
(b) Explain about accident reporting system.
12. (a) Write short notes on gas detector.
Or
(b) Describe about winding and transportation.
13. (a) Write detail about trapping.
Or
(b) Explain about atmospheric pollution.
14. (a) Write and explain about statistical method.
Or
(b) Enumerate the appraisal of advanced techniques.
15. (a) Briefly explain about accident analysis.
Or
(b) What are the emergency preparedness?

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

16. (a) What are the elements of risk assessments?
Or
(b) Explain about activity of failure mode and effect analysis.

17. (a) Explain about inundation and collapse of tunnel face.

Or

(b) Briefly explain about accident occurrence investigation.

18. (a) What is meant by occupational hazard? Explain in detail.

Or

(b) Illustrate with neat sketch of hand tools.

CP-9564

Sub. Code

30715 C

M.B.A. DEGREE EXAMINATION, NOVEMBER 2018

First Semester

Environment And Industrial Safety

SAFETY IN FIRE WORKS INDUSTRY

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Write the fire properties and calcium nitrate(CaNO_3).
2. What are the types of fires?
3. Write the features of lighting arrestor.
4. What are the disadvantages of PPE?
5. What are the types of layout?
6. Write the power of inspector.
7. Define the term "Competence Driver".
8. What are the hazards presence in loading into automobiles?
9. Define the term "Consumer Anxiety".
10. Write the process of spoilages.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) What are the safety measures to be consider while using borax?

OR

- (b) Write notes on
- (i) Fire properties of phosphorous.
 - (ii) Fire properties of metal powder.

12. (a) Write short notes on Earthing.

Or

- (b) Briefly explain the term “Pollution Prevention”.

13. (a) Write notes on (i) Drying (ii) Packing.

Or

- (b) Discuss the methods of fire prevention.

14. (a) What are the hazards presence in snake egg manufacturing industries.

Or

- (b) Write short notes on loading into automobiles.

15. (a) How the effective storage methods used for fire work material?

OR

- (b) What are the hierarchy of waste control? Explain.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Define Explosion. Give some examples for explosive materials and explain the hazards.

Or

- (b) Write notes on
- (i) Lighting Arrestor. (5)
 - (ii) Static charge meter lighting. (5)

17. (a) Discuss in detail about layout of process building.

Or

- (b) Explain in detail about manual handling.

18. (a) Explain in detail about over head power lines safety.

Or

- (b) What is PPE? and what are the types of respiratory PPE and explain.
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CP-9566

Sub. Code

30722

M.B.A. DEGREE EXAMINATION, NOVEMBER 2018

Second Semester

Environment and Industrial Safety

EHS LAWS

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define Artificial Humidification.
2. Write down the precautions steps for in case of fire.
3. What is muster Roll?
4. What are the special provisions?
5. How do you control the air pollution?
6. List out any three Environmental Act.
7. Differentiate between Hazardous and Non-Hazardous waste.
8. What is E-waste management?
9. Define the Indian Boilers Act.
10. What is Mobile pressure vessels?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) How do you disposal the waste and effluent?
Explain them.

Or

- (b) Write about the safety and precaution procedure in Industry.

12. (a) Write short notes on :

(i) Register for overtime (2)

(ii) Register for employment. (3)

Or

- (b) Explain about Notice of poisoning and occupational diseases.

13. (a) Explain the provisions of water Act 1974.

Or

- (b) Explain the provisions of National Environmental Tribunal Act, 1995.

14. (a) Explain about Hazardous waste management.

Or

- (b) Describe about Biomedical waste management.

15. (a) Write short note on legal rules as to disposal of Biomedical waste.

Or

- (b) What is the role- of the central Board for the prevention and control of air pollution? Explain them.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain detail note on welfare facilities.

Or

- (b) Briefly describe about condition of service of Building workers.

17. (a) Explain the legal rules of Environmental Act.

Or

- (b) Write short notes on :

(i) Provisions of the Air Act about Air pollution control. (5)

(ii) Hazardous waste legislation for pollution abatement. (5)

18. (a) Explain the provisions of the Indian factors Act towards environmental protections.

Or

- (b) Write short notes on :

(i) Entitlement. (5)

(ii) Employer's Liability. (5)

CP-9572

Sub. Code

30731

M.B.A. DEGREE EXAMINATION, NOVEMBER 2018

Third Semester

Environment and Industrial Safety

CONSTRUCTIONAL SAFETY MANAGEMENT

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define tool box talk.
2. Define accident. Give any one example for accident at construction site.
3. What is meant by excavation?
4. What are the uses of scaffolding?
5. What are the types of tags to be used in scaffolding?
6. What are the types of fall arrestor?
7. Name any four works that require work permit.
8. Name any four portable power tools.
9. What are the types of cranes?
10. Define fire.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Briefly explain about training requirements of construction workers related to safety.

Or

- (b) Briefly explain about accident and its types.

12. (a) Briefly explain about pre blasting inspection.

Or

- (b) Briefly explain about post blasting inspection.

13. (a) Briefly explain about safety while working at height.

Or

- (b) Briefly explain about safety while working on fragile roof.

14. (a) Briefly explain about safety requirements in conveyors.

Or

- (b) Discuss about safety guidelines while working with ladders.

15. (a) Discuss about health hazards during demolition work.

Or

- (b) What is method statement? Discuss about its content.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss in detail about BOCW Act.

Or

- (b) Discuss in detail about :

(i) Work over water

(ii) Road works.

17. (a) Explain in detail about fall protection & passive fall protection systems.

Or

- (b) Discuss in detail about excavation safety.

18. (a) Write in detail about PTW system.

Or

- (b) Write in detail about hazards and control measures of hand tools and power tools.

CP-9573

Sub. Code

30732

M.B.A. DEGREE EXAMINATION, NOVEMBER 2018

Third Semester

Environment and Industrial Safety

INDUSTRIAL SAFETY MANAGEMENT

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define fire hydrant.
2. What is meant by layout?
3. What is meant by machine guarding?
4. What are the types of machine guarding?
5. Define PPE.
6. Define flash back arrestor.
7. Define safety inspection.
8. Define dynamic balancing.
9. What is OSHAS 18001?
10. What is meant by OHS policy?

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

11. (a) Briefly explain about role of safety officer in layout setting of industries.

Or

- (b) Briefly explain about safety in LPG storage locations.

12. (a) Briefly explain about zero mechanical state.

Or

- (b) Briefly explain about different types of machine guards.

13. (a) Briefly explain about safety in gas cylinder storages.

Or

- (b) Briefly explain about hazards of welding & grinding.

14. (a) Discuss in brief about safety in earth moving equipment.

Or

- (b) Explain about structure & features of OHSAS 18001.

15. (a) Briefly explain about abrasive blasting & its safety measures.

Or

- (b) Explain shortly about benefits of OHSAS 18001 certification to an industry.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about industrial waste treatment & disposal.

Or

- (b) Explain in detail about safety in fire workers industry.

17. (a) Describe in detail about PPE and its types required in industries.

Or

- (b) Explain in detail about training requirements of machine workers with respect to safety.

18. (a) Discuss in detail about hierarchy of accident control.

Or

- (b) Discuss in detail about industrial radiography with its hazards and control measures.
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CP-9574

Sub. Code

30733

M.B.A. DEGREE EXAMINATION, NOVEMBER 2018

Third Semester

Environment and Industrial Safety

**DISASTER MANAGEMENT AND EMERGENCY
RESPONSE**

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define disaster mitigation.
2. Define deforestation.
3. Define onsite emergency.
4. Define offsite emergency.
5. Define ozone depletion.
6. Define bio diversity.
7. Mention any 4 types of industrial disasters.
8. Mention any 4 types of natural disasters.
9. Define vulnerability analysis.
10. What is meant by environmental protection?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Briefly explain about disaster management.

Or

(b) Briefly explain about early warning system in India.

12. (a) Explain about your understanding on software's on emergency controls.

Or

(b) Briefly explain about gas monitoring and its requirement.

13. (a) What are the causes and effects of sea level rise?

Or

(b) What do you mean by extreme event analysis?

14. (a) Explain about climate change and its causes.

Or

(b) Explain in brief about hazardous waste treatment and disposal.

15. (a) Briefly explain about natural resource conservation.

Or

(b) Briefly explain about public liability insurance.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about man made disaster and its preparedness.

Or

- (b) Explain in detail about natural disaster and its preparedness.

17. (a) Discuss in detail about disaster response team and their role.

Or

- (b) Write in detail about any one disaster you heard recently.

18. (a) Explain in detail about risk assessment of disaster.

Or

- (b) Explain in detail about environmental protection act.
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CP-9575

Sub. Code

30734

M.B.A. DEGREE EXAMINATION, NOVEMBER 2018.

Third Semester

Environment and Industrial Safety

COMPUTER AIDED SAFETY ANALYSIS

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define hazard monitoring.
2. What is meant by hazard assessment?
3. What is thermo calorimetry?
4. Define RSST.
5. What is meant by FTA?
6. What is meant by ETA?
7. How to identify hazards?
8. What is flash fire?
9. Name any four industrial disasters.
10. What is Rasmussen masses report?

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

11. (a) Explain about what-if analysis.

Or

- (b) Explain about safety audit.

12. (a) Explain about thermo gravimetric analyzer.

Or

- (b) Explain about minimum ignition energy test.

13. (a) Explain about fire explosion and toxicity index.

Or

- (b) Discuss about reliability software's on FMEA.

14. (a) Explain about BLEVE, Pool Fire & Jet Fire.

Or

- (b) Explain about mode of heat transfer and its effects.

15. (a) Discuss about port Hudson disaster.

Or

- (b) Discuss about feyzin disaster.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about HAZOP.

Or

(b) Explain in detail about preliminary hazard analysis and human error analysis.

17. (a) Explain about deflagration test and detonation test.

Or

(b) Explain about impact sensitiveness test and friction sensitiveness test.

18. (a) Explain in detail about failure mode effect analysis.

Or

(b) Explain about hazard analysis.

CP-9576

Sub. Code

30735a

M.B.A. DEGREE EXAMINATION, NOVEMBER 2018

Third Semester

Environment and Industrial Safety

SAFETY IN POWDER HANDLING

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. What is known as metal powder?
2. Define powder classification.
3. Define PYROTECHNICS.
4. What is known as explosives?
5. What is Dust?
6. What is Green ward furnace?
7. Define Electroplating.
8. What is SILOS?
9. What is PPE?
10. What is labeling?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss the Merits and Demerits of Non Metallic Powder.

Or

- (b) Explain the charge distribution of powder.

12. (a) Explain briefly about Milling Process.

Or

- (b) Explain the PYROTECHNICS.

13. (a) Explain the Explosibility Tests.

Or

- (b) Explain briefly about Dust Explosion Prevention.

14. (a) Write shorts on :

(i) SILOS

(ii) GREEN ELERVATORS.

Or

- (b) Explain the Electrostatic charges.

15. (a) Explain the control approaches of silica in coal mine.

Or

- (b) Discuss the merits and demerits of silica in coal mine.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain briefly about the physical, chemical and other properties of powder.

Or

- (b) Write shorts on :
- (i) Electro Deposition
 - (ii) Spray Drying.

17. (a) Explain briefly about Minimum Explosive Concentration and minimum Ignition energy.

Or

- (b) Discuss briefly about Dust explosion protection and dust explosion venting.

18. (a) Explain briefly about creation of static Electricity and method of discharge the static elements.

Or

- (b) Write shorts on :
- (i) PPE for dust
 - (ii) Electro plating Process.

CP-9577

Sub. Code

30735b

M.B.A DEGREE EXAMINATION, NOVEMBER 2018

Third Semester

Environment and Industrial Safety

DOCK SAFETY

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define loose gear.
2. What is known as welfare?
3. Define hatch covers.
4. Define forklift.
5. Define portainers.
6. What is known as natural fiber ropes?
7. Define dock railways.
8. Define cargo.
9. What is emergency action plan?
10. What is known as safety report?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about history of dock safety in India.

Or

- (b) Explain about (i) dock workers (safety, health and welfare) act, 1986 (ii) rules and regulations of dock safety.

12. (a) Explain about principles of working onboard ships.

Or

- (b) Explain about illumination of decks and in holds.

13. (a) Explain about various methods of rigging of derricks.

Or

- (b) Discuss in short use and care of synthetic fiber ropes.

14. (a) Explain about (i) dock railways (ii) safety in self loading containers.

Or

- (b) Explain about safety measure in gas leakage and precaution.

15. (a) Briefly explain about collapse of lifting appliances.

Or

- (b) Briefly explain about dock workers rules and regulation 1990.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about marking of heavy packages act 1951.

Or

- (b) Explain in detail about safety in handling of hatch beams.

17. (a) Explain about different types of lifting appliances.

Or

- (b) Explain in detail about (i) container side lifter
(ii) forklift truck.

18. (a) Explain about carriage of dangerous goods in containers.

Or

- (b) Discuss about the emergency action plan for fire and explosion.
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CP-9578

Sub. Code

30735c

M.B.A. DEGREE EXAMINATION, NOVEMBER 2018

Third Semester

Environment and Industrial Safety

HAZARDOUS WASTE MANAGEMENT

(2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What are the characteristics of hazardous waste?
2. Define SDS.
3. What is Bio-medical waste?
4. What is flammability of chemicals?
5. What is radioactive waste?
6. What are the waste disposal options in nuclear power plant?
7. Define incineration.
8. Define auto clave.
9. Define stabilization.
10. Define chemical oxidation.

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

11. (a) Describe about the transport of hazardous waste.
Or
(b) Explain about the manifest system.
12. (a) Discuss about the transportation of chemical.
Or
(b) Discuss about the fly ash rules.
13. (a) Discuss about the collection and separation of solid waste.
Or
(b) Write about the treatment option of solid waste.
14. (a) Write about the autoclave.
Or
(b) Write about the microclave.
15. (a) Discuss about the slurry phase bioreactor.
Or
(b) Write a note on IN-SITU remediation.

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

16. (a) Describe in detail about the UN classification of chemicals.
Or
(b) Describe in details about the Bio-medical waste handling rules.

17. (a) Discuss in detail about the land fill design for hazardous waste.

Or

- (b) Write a note about the environmental risk assessment.

18. (a) Write in detail about the chemical treatment processes for Municipal solid waste.

Or

- (b) Discuss about the MSIHC rules 1989.
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