

SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF MECHANICAL ENGINEERING

QUESTION BANK



I SEMESTER

**1914104 - INDUSTRIAL SAFETY, HEALTH AND
ENVIRONMENT ACTS**

(M.E. INDUSTRIAL SAFETY ENGINEERING)

Regulation – 2019

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QUESTION BANK

SUBJECT: 1914104 INDUSTRIAL SAFETY, HEALTH AND ENVIRONMENT ACTS

SEM / YEAR: I Semester / I Year

UNIT – I – FACTORIES ACT – 1948			
Statutory authorities – inspecting staff, health, safety, provisions relating to hazardous processes, welfare, working hours, employment of young persons – special provisions – penalties and procedures-Tamilnadu Factories Rules 1950 under Safety and health chapters of Factories Act 1948			
PART- A			
S.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	What is factory?	Level 1	Remembering
2	Whether any establishment is a factory?	Level 2	Understanding
3	What are the main objectives of the factories act 1948?	Level 3	Applying
4	How would you define the manufacturing process?	Level 4	Analysing
5	How are the inspectors appointed in factories?	Level 5	Evaluating
6	List out the powers of inspectors?	Level 6	Creating
7	What are the general duties of the occupier?	Level 1	Remembering
8	Write a short note ‘occupier’ as defined under factories act.	Level 2	Understanding
9	Define the term ‘worker ‘used in factories act.	Level 3	Applying
10	Define adult as per factories act.	Level 4	Analysing
11	What is meant by the hazardous process?	Level 5	Evaluating
12	Mention the provisions of the factories act, 1948, relating to health of workers.	Level 6	Creating
13	List out the provisions of factories act regarding the employment of young persons.	Level 1	Remembering
14	How are the certifying surgeons appointed?	Level 2	Understanding
15	What are the duties of certifying surgeons?	Level 3	Applying
16	Mention the rules regarding employment of adults.	Level 4	Analysing
17	List out the duties of welfare officer.	Level 1	Remembering

18	Enumerate the restrictions on the employment of woman.	Level 2	Understanding
19	State the provisions of the factories act regarding to the employment of woman.	Level 1	Remembering
20	List out the restrictions on the employment of woman.	Level 1	Remembering

PART- B

S.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	Describe the procedure of appointment of inspectors under factories act 1948.	Level 1	Remembering
2	Explain in detail about the duties of manufactures.	Level 2	Understanding
3	Explain in detail about the duties of powers of inspectors as per factories act 1948.	Level 3	Applying
4	Discuss the rules relating to approval, licensing, and registration of factories, what is notice by occupier? State the contents of the notice by occupier.	Level 4	Analysing
5	Discuss the circumstance under which the occupier or the manager may be exempted from liability under the factories act 1948?	Level 5	Evaluating
6	Briefly enumerate the provisions of the factories act 1948, relating to the health of the workers.	Level 6	Creating
7	Briefly mention the provisions laid down in the factories act for the purpose of securing the safety of young persons, women and children.	Level 1	Remembering
8	Briefly summarize the different provisions of the factories act 1948, for the welfare of workers in a factory.	Level 2	Understanding
9	Discuss the safety measures provided for in the factories act, 1948, relating to dangerous machine.	Level 3	Applying
10	What are the obligations of the employer regarding a) Dust and fumes b) over crowding c) crèche?	Level 4	Analysing
11	Explain in detail regarding the provisions relating to hazardous processes.	Level 1	Remembering
12	What are the rules regarding the powers of the inspectors of factories to require medical examinations of young persons?	Level 2	Understanding
13	State the rules regarding annual leave with wages.	Level 4	Analysing
14	What are the provisions in the factories act 1948, regarding the payment of extra wages for the over time?	Level 1	Remembering

PART – C

S.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	A is the owner of a concern manufacturing cigars. Twenty persons are employed in the concern. Of these twenty employees, one is a graduate for supervising the work and another an apprentice learning work. The remaining 18 are employed on the time wage system, but not the piece work system. Is the concern a factory within the meaning of that term under the factories Act, 1948?	Level 2	Understanding
2	A worker aged 25 years has been allowed leave for 4days. Another worker, aged 14 years, have been allowed leave for days. Both the workers intend to get the wage before their leave begins. Advise the employer.	Level 3	Applying
3	The working hours including rest interval of woman employed in a factory have been fixed from 2 pm to 11pm. Is this working time valid? Give reasons for the answer.	Level 4	Analysing
4	The manager of a factory asks a worker to work for 70 hours including overtime in a particular week. Discuss with reasons whether the worker is bound to work of such working hours in a week?	Level 5	Evaluating

UNIT – II – ENVIRONMENT ACT – 1986

General powers of the central government, prevention, control and abatement of environmental pollution-Biomedical waste (Management and handling Rules, 1989-The noise pollution (Regulation and control) Rules, 2000-The Batteries (Management and Handling Rules) 2001- No Objection certificate from statutory authorities like pollution control board.

PART- A

S.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	Define environment.	Level 1	Remembering
2	What is environment pollutant?	Level 2	Understanding
3	How the officers are appointed as per Environmental Act, 1986?	Level 3	Applying
4	Who is a Government analyst?	Level 4	Analysing
5	What is mean by cognizance of offences?	Level 5	Evaluating
6	Define Biomedical waste.	Level 6	Creating
7	List the few sources of Biomedical waste.	Level 1	Remembering
8	What are the steps in Management of Biomedical waste?	Level 2	Understanding
9	List out the schedules in Biomedical waste rules2016.	Level 3	Applying
10	Define Noise pollution.	Level 4	Analysing
11	Classify the types of Noise.	Level 5	Evaluating
12	List out the sources of Noise pollution.	Level 6	Creating
13	What are the strategies adopted to control Noise pollution?	Level 1	Remembering
14	Mention the various steps involved in recycling of lead bearing wastes.	Level 2	Understanding
15	Define Air-Pollutants.	Level 3	Applying
16	How the state Board constituted under Air Act1981.	Level 4	Analysing
17	What is a PUC certificate?	Level 1	Remembering
18	Mention the effects of water pollution.	Level 2	Understanding
19	Define pesticides Toxins.	Level 1	Remembering
20	What are the sources of water pollution?	Level 1	Remembering

PART- B

S.NO	QUESTION S	BT LEVEL	COMPETENCE
1	Can you explain the powers of central Government to measure, to protect, to improve environment?	Level 1	Remembering
2	Explain in detail about the factors which influences 'environmental Protection'?	Level 2	Understanding
3	What was the main objective behind the making of Hazardous wastes (Management and Handling) rules, 1989?	Level 3	Applying
4	Explain in detail about indoor and outdoor sources of noise pollution.	Level 4	Analysing
5	Discuss the adverse effects of Noise pollution on human health.	Level 5	Evaluating
6	How would you describe the environmentally sound Batteries recycling?	Level 6	Creating
7	Describe the functions of Central and state pollution control Boards.	Level 1	Remembering
8	Explain in detail about major sources of Air pollution.	Level 2	Understanding
9	What happens to pollutants in the atmosphere?	Level 3	Applying
10	Elaborately explain the effects of air pollution on living organism.	Level 4	Analysing
11	Explain in detail about the causes, effects, and control measures of airpollution.	Level 1	Remembering
12	How would you control water pollution and explain the stages ofwater recycling?	Level 2	Understanding
13	Discuss the penalties and procedures of Government against the water pollution.	Level 4	Analysing
14	Can you explain the Biological effects of water Pollution?	Level 1	Remembering

PART – C

S.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	Environment Protection Act is an umbrella legislation that consolidated the provisions of the Water (Prevention and Control of Pollution) Act of 1974 and the Air (Prevention and Control of Pollution) Act of 1981. Explain.	Level 2	Understanding
2	The levels of air-pollution are very high in Delhi these days. Taking help from the lesson, check out the causes of air pollution and the remedial measures to check further pollution. Write a report of about five hundred words.	Level 4	Analysing
3	Describe the main functions of Central & State Pollution Control Boards.	Level 5	Evaluating
4	Draft a letter to the concerned authority stating the problem of these patients while referring to the applicable laws on noise pollution. Request them to close the airport at least at night to give some respite to the patients in the hospital	Level 6	Creating

**UNIT – III – MANUFACTURE, STORAGE, AND IMPORT OF HAZARDOUS
CHEMICAL RULES 1989**

Definitions – duties of authorities – responsibilities of occupier – notification of major accidents – information to be furnished – preparation of offsite and onsite plans – list of hazardous and toxic chemicals – safety reports – safety data sheets.

PART- A

S.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	What is mean by Hazardous chemicals?	Level 1	Remembering
2	State the notification of major accident.	Level 2	Understanding
3	What are the details have to provide for the import of hazardous chemicals?	Level 3	Applying
4	List out the duties of Authorities as per chemicals. Rules 1989.	Level 4	Analysing
5	Write a brief note general responsibility of the occupier during industrial activity.	Level 5	Evaluating
6	Define “CHEMTREC”	Level 6	Creating
7	What is mean by Transitional provisions?	Level 1	Remembering
8	Outline the industrial activity to which rules 7 to 15 apply.	Level 2	Understanding
9	Define safety reports.	Level 3	Applying
10	How the occupier shall prepare the emergency plan required under sub-rule 1.	Level 4	Analysing
11	State the information to be given to persons liable to be affected by a major accident.	Level 5	Evaluating
12	Give a short note on toxic chemicals.	Level 6	Creating
13	What is meant by flammable chemicals?	Level 1	Remembering
14	Define Explosives.	Level 2	Understanding
15	What is preliminary hazard analysis?	Level 3	Applying
16	List out the categories of storage tanks.	Level 4	Analysing
17	What are the types of liquid and liquefied gas storage tanks?	Level 1	Remembering
18	How can we carry out the liquid emission control measures?	Level 2	Understanding
19	Define safety Management plan.	Level 1	Remembering
20	What is mean by Hazard assessment?	Level 1	Remembering

PART- B

S.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	Discuss the storage facilities and their handling techniques.	Level 1	Remembering
2	Explain in detail about Handling techniques of liquid and Liquefied gas.	Level 2	Understanding
3	What are the types of solid storage tanks? Explain.	Level 3	Applying
4	Discuss the different techniques for the transfer and handling of solids.	Level 4	Analysing
5	How would you describe the possible sources of emissions during storage and handling?	Level 5	Evaluating
6	Describe the liquid emission control measures.	Level 6	Creating

7	Explain in detail about the Incidental and accidental emission control measures.	Level 1	Remembering
8	Elaborately explain the various stages of safety management plan for various chemical storages.	Level 2	Understanding
9	Can you explain the safety features for isolated storage and handling of chemicals?	Level 3	Applying
10	Discuss the concept of off-site emergency plans.	Level 4	Analysing
11	Explain in detail about the mandates of the MSIHC Rules.	Level 1	Remembering
12	Explain about the authorities and their duties as per MSIHC rules.	Level 2	Understanding
13	Elaborately explain the handling process of Toxic chemicals.	Level 4	Analysing
14	Give a detailed account on safety reports.	Level 1	Remembering

PART – C

S.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	"Chemical Accident (Emergency Planning, Preparedness and Response) Rules, 1996" , notified under the EPA Act 1986 - Explain	Level 2	Understanding
2	Chemical Hygiene plan helps to prevent the accidents. – Explain.	Level 3	Applying
3	Rules and regulations of chemical transport are effective.- Illustrate the lines.	Level 5	Evaluating
4	Develop an emergency response plan for a chlorine release and coverage zone.	Level 6	Creating

UNIT – IV- OTHER ACTS AND RULES

Indian Boiler Act 1923, static and mobile pressure vessel rules (SMPV), motor vehicle rules, mines act 1952, workman compensation act, rules – electricity act and rules – hazardous wastes (management and handling) rules, 1989, with amendments in 2000- the building and other construction workers act 1996., Petroleum rules, Gas cylinder rules-Explosives Act 1983-Pesticides Act

PART- A

S.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	What is IBR?	Level 1	Remembering
2	Which Steam Boilers And Steam Pipes are regulated By IBR?	Level 2	Understanding
3	How to register a New Boiler?	Level 3	Applying
4	What are the duties of an owner of Boiler at examination?	Level 4	Analysing
5	List out the objectives of Indian Boilers act?	Level 5	Evaluating
6	Define compressed Gas?	Level 6	Creating
7	What is mean by pressure vessel?	Level 1	Remembering
8	Outline the special precautions against SMPV accidents.	Level 2	Understanding
9	What are the salient features of Motor vehicle Act 1988?	Level 3	Applying
10	List out the objectives of Motor vehicle Act.	Level 4	Analysing
11	Who can file an application for compensation as per Motor vehicle Act?	Level 5	Evaluating
12	Define mine.	Level 6	Creating
13	Outline the powers of inspectors of mines.	Level 1	Remembering
14	Define occupational Disease.	Level 2	Understanding
15	What do you mean by workman?	Level 3	Applying
16	List out categories of hazardous waste.	Level 4	Analysing
17	Define hazardous waste act.	Level 1	Remembering
18	What is mean by Explosives?	Level 2	Understanding
19	How explosives are categorized under the explosive's rules, 1983?	Level 1	Remembering
20	What is the purpose of license form 21 as per explosives rules?	Level 1	Remembering

PART- B

S.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	When and how renewal of certification of a boiler is done?	Level 1	Remembering
2	Explain in detail about SMPV Rules 1981.	Level 2	Understanding
3	Discuss in detail about the Registration of motor vehicles.	Level 3	Applying
4	Describe the various provisions of health and safety under mines Act.	Level 4	Analysing
5	What is the liability of the principal employer in respect of injury sustained by a workman employed through a contractor?	Level 5	Evaluating
6	Explain the provisions of the workmen's compensation Act, 1923 relating to the liability of the employer in case of a workman suffering from occupational disease.	Level 6	Creating
7	Describe the procedure for management of hazardous wastes.	Level 1	Remembering
8	Discuss the process of treatment, storage and Disposal facility for Hazardous and other wastes.	Level 2	Understanding
9	How would you show your understanding of building and other construction workers welfare Boards?	Level 3	Applying
10	Can you explain the environmental risk analysis for terminal storage and handling of petroleum products?	Level 4	Analysing
11	Elaborate in detail about Gas cylinder rules.	Level 1	Remembering
12	What are the procedures for renewal of license as per explosives rules 1983?	Level 2	Understanding
13	Explain in detail about the safety measures in the explosive rules.	Level 4	Analysing
14	Discuss in detail about the prohibition of import, export and manufacturing of certain pesticides.	Level 1	Remembering

PART – C			
S.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	Whether the Boilers act 1923 is suitable for modern boilers – discuss in detail and explain how it has to be changed according to the recent developments.	Level 2	Understanding
2	How the motor vehicle rules helps in the Industrial safety?	Level 4	Analysing
3	Can Employer Reverse The Termination Letter? What Is The Actual Procedure In This Case?	Level 5	Evaluating
4	<p>One workman who was lying in his residence in a bad condition due to sickness . Some fellow workmen of the group requested their contractor to help the sick person. The contractor on humanitarian grounds, admitted the sick workman in a hospital. The sick person was diagnosed with neuro-disorder for high blood pressure. The workman discharged from the hospital once he recuperated. The workman remained on the rolls of the contractor till the closure of the contract. Now the contractor received a notice from the WC Commissioner after a span of 23 months through the principal employer for payment of compensation to the tune of 16 lacs. The workman filed the copy of hospital papers with the WC Commissioner. The Principal Employer has already informed the authority that No accident had occurred on the particular date mentioned in petition. But the principal employer held the payment that was due to the contractor and asked payment can only be released after the matter is resolved.</p> <p>Questions: Give the solution to the above problem as per the legal provisions given under the workmen Compensation act.</p>	Level 6	Creating

UNIT – V- INTERNATIONAL ACTS AND STANDARDS

Occupational Safety and Health act of USA (The Williames - Steiger Act of 1970) – Health and safety work act (HASAWA 1974, UK) – OSHAS 18000 – ISO 14000 – American National Standards Institute (ANSI).

PART- A

S.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	What are the duties of an employer as per OSHA?	Level 1	Remembering
2	Define occupational health.	Level 2	Understanding
3	What is the importance of occupational safety and health?	Level 3	Applying
4	List out the types of hazards in the workplace.	Level 4	Analysing

5	How is the advisory committee formed under OSHA?	Level 5	Evaluating
6	Which categories of employees are not covered under OSHA act?	Level 6	Creating
7	List out the OSHA advisory committees.	Level 1	Remembering
8	Why this OSHA is essential?	Level 2	Understanding
9	What are responsibilities of employer as per OSHA law?	Level 3	Applying
10	How the workers can file their complaints about the Hazardous workplace?	Level 4	Analysing
11	List out the objectives of OHSAS?	Level 5	Evaluating
12	What is the scope of OHSAS?	Level 6	Creating
13	Why was the HASAWA 1974 introduced?	Level 1	Remembering
14	What are the main points of HASAWA 1974?	Level 2	Understanding
15	What is meant by ISO14000?	Level 3	Applying
16	Why is ISO14000 important?	Level 4	Analysing
17	Mention few objectives of ISO 14000.	Level 1	Remembering
18	List out the benefits of ISO 14000 certification.	Level 2	Understanding
19	Why are ANSI standards required?	Level 1	Remembering
20	Differentiate ANSI and Unicode.	Level 1	Remembering

PART- B

S.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	Explain in detail about responsibilities of employers and the rights of workers under OSHA law.	Level 1	Remembering
2	How are the complaints filed as per OSHA Law?	Level 2	Understanding
3	Discuss the worker, environmental and nuclear safety laws.	Level 3	Applying
4	Explain in detail about Health and safety regulations of HASAWA 1974.	Level 4	Analysing
5	Describe the transportation industry laws as per OSHA Laws.	Level 5	Evaluating
6	Discuss in detail about OH&S management system model for OHSAS model.	Level 6	Creating
7	Can you explain in detail about Hazard identification, Risk assessment and determining controls of OHSAS 18001:2007?	Level 1	Remembering
8	How would you describe the environmental management system?	Level 2	Understanding
9	Describe the brief history and standardization process of ISO.	Level 3	Applying

10	Explain in detail about the concepts of ISO14000 and its benefits in detail.	Level 4	Analysing
11	Explain in detail about the overview of ISO14000 standards.	Level 1	Remembering
12	List out and explain in detail about various control records.	Level 2	Understanding
13	Differentiate between ISO14001:2004 and ISO9001:2000.	Level 4	Analysing
14	Explain in detail about ANSI.	Level 1	Remembering

PART – C

S.NO	QUESTIONS	BT LEVEL	COMPETENCE
1	Why OSHAS 18001 is important?	Level 1	Remembering
2	How OSHAS differ from other safety standards.	Level 2	Understanding
3	Explain the impact of government responsibilities in occupational safety.	Level 3	Applying
4	Compare ISO 14000 and ISO 9000.	Level 4	Analysing