

JK Lakshmipat University Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY
 End Term Examination, May 2022
 M. Tech. (HSEE), Semester II, 2021-22

Roll No.....

IL2104: REGULATION FOR HEALTH, SAFETY, AND
 ENVIRONMENT MANAGEMENT

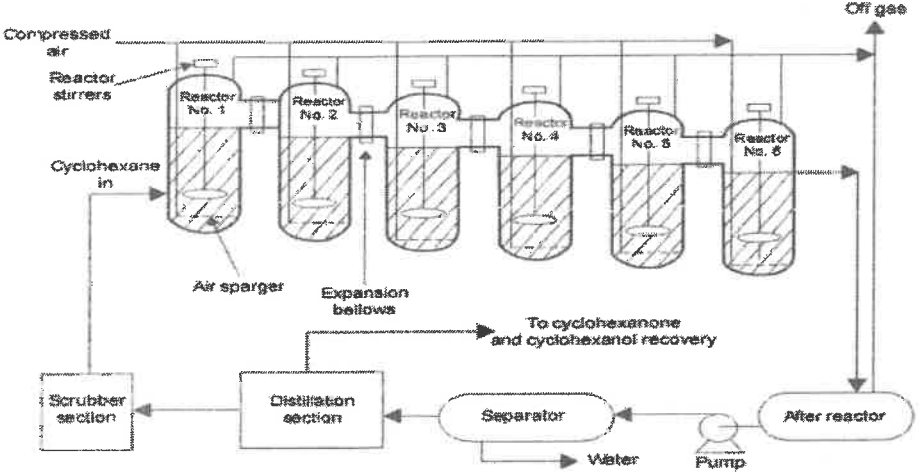
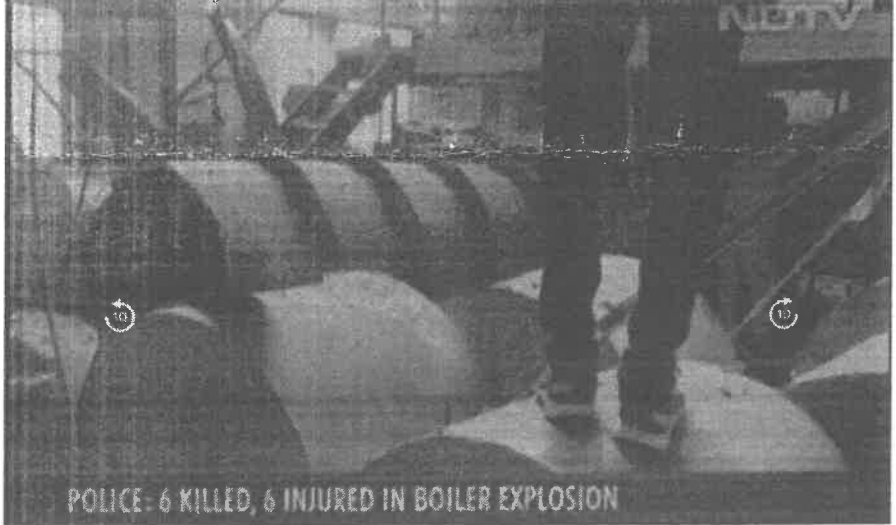
Time: 3 hours

Max. Marks: 60

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Mention all the assumptions for your answers clearly.

Q. 1.1	1 + 2 → 3 4 + 3 → 5 Methylamine => (1) Reacts with Phosgene; (2) Producing Methyl Isocyanate; (3) which reacts with 1 - naphthanol; (4) to yield carbaryl; (5) Sevin = C₁₂ H₁₁ NO₂ Figure-1: Sevin Production Process List out important legislations related to health, Safety and Environment for the sevin production plant (Highly toxic chemicals)	06.0 (CO1)
Q. 1.2	Suppose Mr. "X" wants to setup an industry for production, storage and transport of class-A fuels. Write the statutory requirements/procedure for the above proposed Industry to grant registration/ license.	06.0 (CO4)

Q. 2.1	 Figure-2: cyclohexane oxidation plant Implement the health and welfare provisions for the employee who's working at cyclohexane oxidation plant as per the Occupational Safety Health and Working Conditions [OSHWC] Code-2020.	06.0 (CO4)
Q. 2.2	 Seven people were killed in a boiler explosion at a factory in Bihar's Muzaffarpur, state Revenue and Land Reforms Minister Ram Surat Rai informed on Sunday, adding that a high-level inquiry will be conducted into the incident. Seven people were also injured, the district police chief said. "The incident is extremely unfortunate. A total of seven people have died while the other seven are injured. A high-level inquiry will be done into the incident. In my opinion, the factory rules were violated as it was operating on Sunday even though factories are closed on that day. The reason behind this will be found out in the inquiry and strict action will be taken against the ones found guilty," said Mr Rai while talking to the media. The minister said that the government had given the certificate for the operation of the boiler in May this year. Mr Rai also said that free treatment will be provided to the ones injured in the incident. The explosion at the noodles factory happened around 10 am, district magistrate Pravan Kumar said. The loud explosion was heard by residents in nearby areas, up to a five-kilometers away. Visuals	07 (CO2,4)

	show hundreds of people rushing to the incident site to check what happened. Rescuers and police personnel are at the site, where smoke from the damaged boiler was still visible. Chief Minister Nitish Kumar announced compensation of ₹ 4 lakh each to the families of those who died in the industrial accident. Write the procedure for Inspection during manufacture/erection for boiler and boiler components as per the boiler act-1923 of Section-4D/4E, and also Calculate the Penalties for the above accidents as per the boiler act-1923 which are helping to prevent the reoccurrence of such accents in future.	
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Q. 3.1	Design a Format for filing returns of sale of new batteries and collection of used batteries and for application for registration of facilities possessing environmentally sound management practice for recycling of used lead acid batteries as per the Batteries (Management and Handling) Rules, 2016.	10.0 (CO1,2,4)
Q. 3.2	Design Safety and Occupational Health Plans for refining, transport, and storage of all class of petroleum products according to the OSHA 18001 standard and as per the petroleum rules, 2002.	10.0 (CO2,5)

Q. 4.1	Give a critical note on the following techniques and how these equipment and technologies support the cement industry in the reduction of air pollution. • Wet scrubber • Electrostatic precipitator	07.0 (CO6)
Q. 4.2	From wood and coal to predominantly oil and natural gas. Thermal Power Plants use fuels for power generation. Water is used for process, cooling, as well as for service/drinking requirements. Chemicals are used for conditioning of water, corrosion-control, and sometimes for conditioning of fuel as well. Lubricants are used for machinery. These inputs generate waste products. Human-related wastes (sewage etc.) are also generated along with the processed waste. These pollutants/wastes need to be treated before their disposal from the plants. The treated effluents are required to meet the limits set by Central / State Pollution Control Boards. The regulations, issued by these agencies, specify the maximum allowable limits applicable to the pollutants discharged from the Power Plants. As per the above short summary of the industry suggest and discuss the specific methods and technologies which are helpful to improve the environmental condition of the workplace as well as fulfil the pollution control norms as per CPCB & SPCB.	08 (CO6)

All the best!

