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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2017

Program: B. Tech CSE Spz.in Oil and Gas Informatics

Semester: VII

Subject (Course): Health, Safety and Environmental Issues

Max. Marks: 100

Course Code: ENVO403

Duration: 3 Hrs

No. of page/s: 02

Section A (05x04=20 Marks)

Compulsory

Q1 Expand the following terms

- a) ESPs.....
- b) NDMA.....
- c) MCA.....
- d) BARC.....

Q2 Fill in the blanks

- a) Record of an audit report is maintained withand HSE till all the recommendations agreed to be implemented are liquated.
- b) Mathematically, Risk =..... X
- c)is the head of emergency organization.
- d) Major drawback of venturi scrubber is.....

Q3 True or False

- a) The result of an EIA is assembled in a document known as an Environmental Impact Statement (EIS), which looks at all the positive and negative effects of a particular project on the Environment. **(True/False)**
- b) LPG storage vessels in petroleum installations can cause severe BLEVEs. **(True/False)**
- c) Chief inspector of the factories in the state is the registering authority of the boilers as per The Boiler Act, 1923. **(True/False)**
- d) The emergencies termed onsite, when it confines itself within the factory even though it may require external help. **(True/False)**

Q4. List five common causes of industrial injury in industry.

Q5. Write a short note on toxic dispersion.

Section B (04x10=40 Marks)

Attempt all questions

Q6. Discuss the salient features and obligations of the organization under Biomedical Waste (Management and Handling) Rules, 1998.

Q7. Training and its validation is an essential part of any HSE Management programme especially in the petroleum industry. Discuss it.

Q8. Briefly discuss the salient features of The Petroleum Act, 1934.

Q9 Discuss the educational qualification, work experience and personal attributes of the environmental auditors according to the standard ISO 14012.

Section C (02x20= 40 marks)

Note: This section is divided into 2 sections C1 and C2. Question no 10 is compulsory however choice is given in section C2. Students are required to attempt any one question from C2 i.e. Question 11 (a) or Question 11 (b).

Sections C1

Q10 OSHA defines ergonomics as the science of “designing the job to fit the worker, instead of forcing the worker to fit the job.” Briefly discuss different elements of an ergonomic programme.

Sections C2

Q11 (a) Discuss the important requirements to be fulfilled while acquiring ISO 14001 certification.

OR

Q11 (b) EIA is potentially one of the most valuable, interdisciplinary and objective decision making tool with respect to alternative route for development process, technology and project site. Discuss the methodology for conducting EIA with the help of flow chart.

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Section A (05x04=20 Marks)

Compulsory

Q1 Expand the following terms

- a) IMO.....
- b) SPCB.....
- c) ALARP.....
- d) UCVE.....

Q2 Fill in the blanks

- a)and gives guidelines for designing work permit formats.
 - b) Bio-medical Waste (Management and Handling) Rules, 1998 classify biomedical waste into.....categories.
 - c) Settling chamber usesto remove solid particles.
 - d) The frequency refers to the rate of vibrations of sound and is measured in.....
- Q3. Name any five regulatory/statutory agencies which are responsible for regulation enforcement in oil and gas industry.
- Q4. Briefly discuss the emergency management plan.
- Q5. Write a short note on custodianship/ownership.

Section B (04x10=40 Marks)

Attempt all questions

- Q6. Briefly discuss the objectives of risk assessment.
- Q7. OSHA defines ergonomics as the science of “designing the job to fit the worker, instead of forcing the worker to fit the job.” Briefly discuss the element ergonomic task analysis and benefits of ergonomically designed stations to the employees.
- Q8. Discuss the salient features and obligations of the organization under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989.
- Q9. Briefly discuss all the available technologies used in the industries to control noise pollution.

Section C (02x20= 40 marks)

Note: This section is divided into 2 sections C1 and C2. Question no 10 is compulsory however choice is given in section C2. Students are required to attempt any one question from C2 i.e. Question 11 (a) or Question 11 (b).

Sections C1

Q10. Process safety management is an analytical tool focused on preventing the release of any substance defined “as a highly hazardous chemicals” by the EPA or OSHA. Discuss in detail the objectives and methodology followed by the investigator for conducting accident reporting and investigation.

Section C2

Q11 (a) Discuss the key principles and benefits of Environmental Management System (EMS).

OR

Q11 (b) With the help of flow chart discuss the methodology for conducting EIA.