UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2018

Programme: B.Tech. FSE **Semester : VI**
Course Name: Environmental Management in Power Industry **Max. Marks : 100**
Course Code: FSEG 333 **Duration: 3 Hrs**

No. of page/s:3

Section A : (5 x 4 = 20 Marks)

Note : Attempt all questions from section "A". Each question carry equal marks.

Q.1 . Choose the correct answers: (1 x 4 = 4 Marks)

i) In ---------- method experts (scientist, engineers and manager) review and identify the different project events and assess their possible effects on existing environmental condition.

a) Martix method b) Network method c)Checklist Method d) Adhoc Method

ii) What are disadvantages of wind energy?

a) Birds Death/ Noise Pollution, b) Visual & Noise Pollution/ Birds Deaths
c) Bad TV & Radio Receptions/Visual & Noise Pollution/Birds Death
d) Noise Pollution/ Bad signals of TV

iii) Which energy is fastest growing energy in world but still responsible for less than 1% of world's energy output?

a) Hydro Energy b) Wind Energy c) Wave Energy d) Nuclear Energy

iv) ISO 14001 is

a) A particularly harmful global warming gas.
b) A European Union regulation on pollution abatement.
c) A water quality regulation set out under UK 1996 Environment Act.
d) An international standard setting out best practice for carrying out audits by companies of their environmental management systems and policies

Q.2 . State T or F (4 Marks)

i) About 97 % to 99 % of SOx emitted from combustion sources is in the form of Sulphur dioxide.

ii)Life Cycle Assessment can improve in justifying the investments as a short term benefit.

iii) The statutory requirements of the petroleum are governed by Petroleum Act, 1934 and Petroleum Rules 1976 under the jurisdiction of Chief inspector of the factories.

iv) The environmental clearance process for nuclear power plant, all the projects in Category A will comprise of a maximum of three stages with no threshold limit, as there is no screening for this category of projects

Q.3. Fill in the Blank: **(4 Marks)**

i) Generation of emission of SO2, NOX and CO2 can be minimized by adopting improved ---------- technology .
ii) ----------Prime Minister of India was an instrumental in introducing the concept of environmental protection in the Constitution of India as a fundamental duty.

iii) ---------- saved the great ancient tree "Sequoia" tree in California forest. In the year 1980 formed Sierra club which is major conservation NFOs in USA.

iv) ----------is the amount of biologically productive land and sea area needed to supply the resources a human population consumes, and to assimilate associated waste

Q.4. Write the full form of the following abbreviations: **(4 Marks)**

a) VOC and TLV----------
b) EIS and IDLH ----------
c) PDCA and LFL----------
d) TDS and TSS----------

Q.5. Define the followings: (2 x 2 = 4 Marks)
i) Ecological Cost ii) Scoping

Section "B" (10 x 4 = 40 Marks)

B1 (Attempt all questions from section B1)

Q.6. Explain rapid EIA and comprehensive EIA. Explain any four methodologies which you will follow for conducting EIA process for hydel power project. (2 + 8 = 10 Marks)

Q.7.To meet the increasing demand of power with minimum environmental impact for sustainable development, adoption of clean technologies with enhanced power plant efficiency is necessary. Clean coal technologies offer the potential for major improvement in efficiency and significant reduction in environmental emissions when used for power generation. Explain briefly the pre-combustion, combustion and post-combustion technologies for controlling gaseous and particulate matter in thermal power plant with schematic diagram. (10 Marks)

Q.8. Explain the positive and negative impact of hydel power project on the environment with reference to aquatic ecology, terrestrial ecology and socio-economic impact. (10 Marks)

Part B2 (Attempt any one question either Q.9. or Q.10)

Q.9. Explain the followings (5 + 5 = 10 Marks)

a) Water pollution (Prevention and Control Act) 1974
b) Motor Vehicle Act 1988

Or

Q.10. Explain the classification of preventive environmental management tools which you will apply in process industry for controlling environmental pollution and managing environmental resources. (10 Marks)

Section "C" (20 x 2 = 40 Marks)

(Attempt any two question from this section. Q.11 is compulsory, you may attempt any one question either question 12 or question 13)

Q.11. According to EIA notification 1994 under the environmental protection act 1986, the EIA process is mandatory for various development project for sustainable development . Explain the various component of EIA which are considered for conducting EIA for thermal power plant. Explain in details the EIA process for category A an project for thermal power plant project supporting it with a block diagram. (10 + 10 = 20 Marks)

Q.12. EIA is to give the environment its due place in the decision-making process by clearly evaluating the environmental consequences of the proposed activity before action is taken. Early identification and characterization of critical environmental impacts allow the public and the government to form a view about the environmental acceptability of a proposed developmental project and what conditions should apply to mitigate or reduce those risks and impacts. Explain EIA process and Environmental Management plan for nuclear power plant with the help of schematic diagram. (20 Marks)

or

Q.13. What is the aim and mission of ISO? Explain PDCA Cycle . Describe any ten elements of EMS clauses which are used for taking ISO 14001 : 2015 certification in the industries or organization. (2+ 3+ 5 + 10 = 20 Marks)

Roll No: ----------

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Section A : (5 x 4 = 20 Marks)

Note : Attempt all questions from section "A". Each question carry equal marks.

Q.1 . Choose the correct answers: (1 x 4 = 4 Marks)

i) Developed countries consume how much percent of energy?

a)70% b) 60% c) 30% d) 20%

ii) Which one of the following gas is not included in green house category .

a) CO_2, b) NO_2 c) H_2 d) CH_4

iii) Our Common Future was a precursor, though not the only one, to United Nation‟s Conference on Environment and Development (UNCED) of June 1992 (popularly known as the----------).

a) Stockholm summit b) Rio summit c) Kyoto protocol d) COP summit

iv) In India EIA was introduced as an administrative measures in 1978-79, initially for ----------

and extending later to industrial projects.

a) Thermal power project c) Nuclear power project d) River valley project
e) None of these

Q.2. Fill in the blanks (4 Marks)

i) ---------- expressed that wild life should be preserved. Few people do not care for nature they sell it for small amount.

ii)----------is the amount of biologically productive land and sea area needed to supply the resources a human population consumes, and to assimilate associated waste

ii) ISO is a non-governmental organisation established in ---------.

iv) ---------- is a very key stage of the EIA process in which those impacts which might have significant effect on the environment, to be addressed in the EIA, are determined.

Q.3. State T or F **(4 Marks)**

i) The objective of the Environmental Impact Assessment is to help in achieving sustainable development with minimum environmental degradation along with prevention of long term environmental effects by incorporating suitable mitigate measures.

ii) Ash Sulphur impurities can be reduced from the coal by pre combustion technology.

iii) The united nation conference on Human and Environment was organized at Toronto.

iv) Element of an organization's activities, products or services that can interact with the environment is known as environmental impact.

Q.4. Define the followings: (4 Marks)

a) Adhoc method b) Ozone layer depletion

Q.5 . What is Brutland commission? Define the concept of sustainable development .
(2 + 2 = 4 Marks)

Section "B" (10 x 4 = 40 Marks)

B1 (Attempt all questions from section B1)

Q.6. What are the causes and effect of thermal pollution. Explain the various method which you can use for controlling thermal pollution. (10 Marks)

Q.7. Identify the classification of preventive environmental management tools which you will apply in process industry for controlling environmental pollution and managing environmental resources. (10 Marks)

Q.8. Explain any five methodologies of EIA which are required to conduct EIA process for hydel power plant project in order to take environmental clearance. (10 Marks)

Part B2 (Attempt any one question either Q.9. or Q.10)

Q.9. Explain the followings (5+ 5 = 10 Marks)
a) Water pollution (Prevention and Control Act 1974)
b) Motor Vehicle Act 1988

Or

Q. 10. The impact of thermal power plant on Describe the various environmental impact of thermal power plant . (10 Marks)

Section "C" (20 x 2 = 40 Marks)

(Attempt any two question from this section. Q.11 is compulsory, you may attempt any one question either question 12 or question 13)

Q.11. According to EIA notification 1994 under the environmental protection act 1986, the EIA process is mandatory for various development project for sustainable development . Explain the various component of EIA which are considered for conducting EIA process for thermal power plant. Explain in details the EIA process for category B project for thermal power plant project supporting it with a block diagram. (10 + 10 = 20 Marks)

Q.12. ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). International Standards covering environmental management are intended to provide organizations with the elements of an effective environmental management system which can be integrated with other management requirements, to assist organizations to achieve environmental and economic goals. Explain the following component of EMS (ISO 14001).

a) Environmental aspect and environmental impact (4 Mark)
b) Emergency planning and preparedness and Continual improvement (4Marks)
c) Environmental management and system audit (4 Marks)
d) Environmental policy and interested party (4 Marks)

or

Q.13 . What are the impact of nuclear pollution? Explain the Environment management plan and EIA process for nuclear power plant which you will follow for conducting EIA process for nuclear power plant. (20 Marks)