U.G. 4th Semester Examination - 2020

Environmental Science

[HONOURS]

Skill Enhancement Course (SEC)

Course Code : ENVS-H-SEC-L-2A&2B

Full Marks : 40 Time : 2 Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer all the questions from selected Option.

OPTION–A

ENVS-H-SEC-L-2A

(Environmental Impact and Risk Assessment)

1. Answer any **five** from the following: 2×5=10

   a) Define environmental impact assessment (EIA).

   b) What is social impact assessment (SIA)?

   c) What is the environmental significance of sustainable development?

   d) State the objectives of environmental auditing.

   e) What do 'cradle' and 'grave' mean in the cradle to grave approach?

   f) Why is 'terms of reference' required during EIA?

   g) ISO_____ method is applied for life cycle assessment while ISO_____ is for environmental auditing.

2. Write short notes on any **two** of the following: 5×2=10

   a) Disaster risk assessment

   b) Environmental impact assessment (EIA) process

   c) Environmental auditing

   d) Environment management plan (EMP)

3. Answer any **two** questions of the following: 10×2=20

   a) Define life-cycle assessment (LCA). Describe the LCA method of a process or a product. State its advantages and limitations. 2+5+3=10

   b) State the principles of (i) cost-benefit analysis and (ii) toxicity assessment. Write a short note on toxicity bioassay. 3+3+4=10

   c) What are the core elements of Environment Management System (EMS). State the principles of environmental management.

Explain PDCA cycle with an illustration.

3+4+3=10

d) State the elements of risk characterization. Mention questions required to assess individual and population risk, as laid down in EPA's guidelines for exposure assessment. How is risk communication performed?

3+4+3=10

OPTION–B

ENVS-H-SEC-L-2B

(Environmental Quality Monitoring and Assessment)

1. Answer any **five** of the following: 2×5=10

   a) Define environmental quality.

   b) State the significance of accuracy and precision.

   c) Define environmental standard.

   d) Define point and nonpoint sources of water pollution.

   e) Define bioindicator species with example.

   f) What are the components of soil quality?

   g) Write down the permissible limits of arsenic and chromium in water as per IS 10500:2012.

2. Answer any **two** of the following: 5×2=10

   a) State the processes of waste water treatment.

   b) Write a short note on biomonitoring of water quality.

   c) Write down the strategies for noise abatement in an industry.

   d) What are the ambient air quality standards in industrial, residential and eco sensitive region as per National Ambient Air Quality Standard, 2009.

3. Answer any **two** of the following: 10×2=20

   a) Explain the process of formation of photochemical smog. What are the health effects of photochemical smog? 7+3=10

   b) Write down the significance of legislation for controlling water and air pollution in India.

   5+5=10

   c) Explain the strategies for handling and management of solid and hazardous waste. Write down the differences between MLSS and MLVSS. 7+3=10

   d) What are the sources of SOx and NOx? State the principles of SOx and NOx analyses with reactions involved. 2+8=10

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