

2021**ENVIRONMENTAL SCIENCE****[HONOURS]****Paper : VIII**

Full Marks : 80

Time : 4 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.*

1. Answer any **seven** of the following: $1 \times 7 = 7$
- What is meant by environmental planning?
 - What is the Indian standard of BOD₅ for discharge of effluents?
 - What is green belt?
 - What is the function of electrostatic precipitator?
 - What is meant by food poisoning?
 - Why is CNG better than diesel or petrol?
 - What is microbial fuel cell?
 - Cite two examples of natural pesticides.
 - Why is 'superbug' so famous in environmental biotechnology?

2. Answer any **six** of the following: $2 \times 6 = 12$
- Explain the 'command and control' regime.
 - Explain the term 'bioleaching' citing examples of two microorganisms involved.
 - Define 'Deep Ecology'. Who is regarded as the father of this concept?
 - Mention two environmental applications of GMOs.
 - How does an input of sewage affect oxygen content of the receiving water bodies?
 - Explain nitrogen fixation and nitrification mentioning bacteria involved in the processes.
 - Define molecular probes and state their importance.
 - Define green technology with an example.
3. Write short notes on any **three** of the following: $7 \times 3 = 21$
- Environmental refugee problem
 - Urban eco-planning and management
 - Ecotourism
 - Environmental standards
 - Ecological footprint

4. Answer any **four** of the following: $10 \times 4 = 40$
- a) Discuss on the adverse effects of transportation on the urban environmental quality. Write a brief note on green transport and better transportation practices. $6 + 4 = 10$
- b) How do rural and urban lifestyles have different environmental impacts? Write a brief note on pro-environmental lifestyle practices. $6 + 4 = 10$
- c) Define hazardous wastes and categorize them. Write a brief note on E-waste management. $(2 + 2) + 6 = 10$
- d) Define bioremediation. Distinguish between biostimulation and bioaugmentation. Give an account of different ex situ bioremediation technologies. $1 + 2 + 7 = 10$
- e) Explain the term 'integrated waste management'. Elaborate on the 3R concept in waste management with examples. Discuss briefly different methods of municipal solid waste management. $2 + 3 + 5 = 10$
- f) Discuss how human relationship with nature changed during different phases of human sociocultural evolution in the following societies :

- i) hunting-gathering society,
ii) agricultural society,
iii) industrial society. $3 + 3 + 4 = 10$
- g) State the defining characteristics of green movement. How do they differ from other socio-cultural movements? Give a short account of an Indian case study. $3 + 2 + 5 = 10$
-