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PG2S-305-B-23
M.Sc. II Semester (CBCS) Degree Examination
ENVIRONMENTAL SCIENCE
Energy and Green Technologies
Paper - SCT-2.2

Time : 3 Hours

Maximum Marks :80

Instructions to Candidate:

- 1) Answer All sections.
- 2) Section-A is compulsory.

SECTION - A

Answer **ALL** of the following

(10×2=20)

1. a) Geothermal
b) Units of energy
c) Natural gas
d) Biomass energy
e) Bio-fuels
f) Earthworms
g) Biomaterials
h) UNFCC
i) Hydrogen energy
j) Biofilm

SECTION - B

Answer any **SIX** of the Following.

(6×5=30)

2. Explain in briefly on non-renewable energy resources
3. Briefly discuss on advantages of solar energy.
4. Describe characteristics of manure and its uses.
5. Discuss significance of green economy.
6. Write the scope of bio-plastics.
7. Explain applications of green chemistry
8. Write a note on phyto-remediation.
9. Explain advantages of bio-fertilizers .

SECTION - C

Answer any **THREE** of the following.

(3×10=30)

10. Discuss renewable energy sources and its merits and demerits.
 11. Explain process of production of biogas with neat labeled diagram.
 12. What are green nano-materials and its application in pollution control.
 13. Discuss principles and applications of green chemistry.
 14. Explain process of vermicomposting and its importance of soil fertility improvements.
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PG2S-306-B-23
M.Sc. II Semester(CBCS) Degree Examination
ENVIRONMENTAL SCIENCE
Natural Resources and Management
Paper - OET-2.1

Time : 3 Hours

Maximum Marks :80

Instructions to Candidates:

- 1) Answer All sections.
- 2) Section-A is compulsory.

SECTION - A

Answer **ALL** of the following

(10×2=20)

1. a) Renewable resources
- b) Social forestry
- c) Wetland characteristics
- d) Soil loss
- e) Organic matter enrichments
- f) Soil micronutrients
- g) Nematodes
- h) Biogas
- i) Thermal energy
- j) Pyrolysis

SECTION - B

Answer any **SIX** of the Following.

(6×5=30)

2. Explain classification of natural resources.
3. Describe need for conservation of forest resources.
4. Write a note on community forest management.
5. Write a note on diagnosis of nutrient deficiencies in soil.
6. Describe scope and strategies of waste land development.
7. Explain principles of solar thermal energy conversion.
8. Write a note on magneto hydrodynamic process.
9. Give detailed account on chemical pesticides.

SECTION - C

Answer any **THREE** of the following.

(3×10=30)

10. Write the role of women in conservation of natural resources in India.
 11. Discuss national lake and river conservation programmes.
 12. Give a detailed account on biogas production from municipal solid waste.
 13. Explain the role of organisms in pest control.
 14. Explain rain water harvesting methods and programs in India.
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PG2S-304-B-23
M.Sc. II Semester (CBCS) Degree Examination
ENVIRONMENTAL SCIENCE
Environmental Microbiology and Biotechnology
Paper - HCT-2.2

Time : 3 Hours

Maximum Marks :80

Instructions to Candidate:

- 1) Answer All sections.
- 2) Section-A is compulsory.

SECTION - A

Answer **ALL** of the following

(10×2=20)

1. a) Ecological Niche
b) Microbial community
c) Ecological succession
d) Biofilm
e) MPN
f) Pesticides
g) Bio control agents
h) *Staphylococcus aureas*
i) Mutagens
j) Antibiotics

SECTION - B

Answer any **SIX** of the Following.

(6×5=30)

2. Elucidate the classification of microbes on their habitat.
3. Give an account of physical and nutritional status of soil.
4. Give an account on types of microbial interactions.
5. What are fermented dairy products?
6. What are the control measures of air pollution?
7. What is induced mutation? Explain.
8. Write about Nosocomial infections.
9. Define indicator microorganisms with examples.

SECTION - C

Answer any **THREE** of the following.

(3×10=30)

10. Discuss the role of environmental microbiology and biotechnology to sustain healthy environment.
 11. Give a detailed account on microbial diversity with its importance.
 12. Explain in detail of waterborne diseases with the strategies to control.
 13. Discuss in detail hydrocarbon degradation mechanism.
 14. Explain in detail the airborne microbial diseases and their control measures.
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PG2S-303-B-23
M.Sc. II Semester (CBCS) Degree Examination
ENVIRONMENTAL SCIENCE
Environmental Toxicology
Paper - HCT-2.1

Time : 3 Hours

Maximum Marks :80

Instructions to Candidate:

- 1) Answer All sections.
- 2) Section-A is compulsory.

SECTION - A

Answer **ALL** of the following

(10×2=20)

1. a) Toxicant
b) Nickel toxicity
c) Chronic effect
d) PAHs
e) Lethal dose
f) Detoxification
g) Hemolysin
h) Cytotoxicity
i) Biomarker
j) Endocrine disrupting

SECTION - B

Answer any **SIX** of the Following.

(6×5=30)

2. Write a note on Botulinum toxin. Explain its effects.
3. Differentiate between animal and plant toxins.
4. Briefly explain the concept of dose response relationship.
5. Write a short note on bio-concentration.
6. What is margin of safety? Explain with example.
7. Briefly explain the process of pesticide accumulation in birds.
8. Write a note on how contaminants damage chromosomes.
9. Briefly explain the influence of contaminants on human health.

SECTION - C

Answer any **THREE** of the following.

(3×10=30)

10. Discuss in detail of ecological risk assessment.
 11. Give a detailed account on cytotoxic effects of environmental contaminants.
 12. Describe the methods used for bioaccumulation measures.
 13. Give a detailed account on toxicity curves.
 14. Discuss the sources and types of agrochemicals and its contamination in soil health.
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