1905E720

Candidate's Seat No

B.Sc. (Sem.-V) Examination

302 CC Environmental Science

Time : 3 Hours] **May-2017** **[Max. Marks : 70**

Que. 1 Answer the following (Any two) [14]

A. Explain cycling of nitrogen element in nature with diagram.
B. Write a note on negative associations with examples.
C. Explain carbon cycle with diagram.
D. Explain positive association among living organisms.

Que. 2 Answer the following (Any two) [14]

A. Explain design and working of trickling filter.
B. Write short note on Activated sludge process.
C. Explain water purification technique.
D. Write a brief note on scrubbers and its application.

Que. 3 Answer the following (Any two) [14]

A. Define and explain biomagnification
B. Explain in detail the process of eutrophication.
C. Write a short note on bioaccumulation.
D. What are xenobiotic compounds? Discuss its harmful effects with examples.

Que. 4 Answer the following (Any two) [14]

A. Write principle and uses of PCR
B. Discuss colony hybridization technique and its applications.
C. Explain southern hybridization with diagram.
D. Write a note on DOT-BLOT technique.

Que. 5 Answer the following [14]

1. Name the instrument used in PCR
2. What are bioinsecticides?
3. How Lagoons are useful for waste treatment?
4. Which organism produce *Taq* polymerase?
5. Full name of UASB.
6. What is Imhoff tank?
7. What is phytoremediation?
8. What is parasitism?
9. Give two name of nitrogen fixing bacteria.
10. What is nitrification?
11. Define western blot technique.
12. What is the use of ultraviolet light in drinking water purification?
13. Define wetland.
14. Define adsorption.

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1805E692

Candidate's Seat No :

B.Sc. (Sem.-V) Examination

301 CC Environmental Science

May-2017

Time : 3 Hours] [Max. Marks : 70

ENV 301 Ecology and Environment

Q-1 Answer the following (any Two) (14)

A. Describe Grazing and Detritus food chain with diagram.
B. Explain Species Diversity and its measurement.
C. Discuss Ecological Pyramid and its importance
D. What is Community? Describe Synthetic Characters of Community.

Q-2 Answer the following (any Two) (14)

A. Explain Status of Indian Environment and Climate diversity.
B. Give a detailed account on Tropical Forest Biome.
C. Discuss with suitable examples - 'India is a nation of megadiversity'.
D. Explain Wet-Land Biome.

Q-3 Answer the following (any Two) (14)

A. What is Ecological Succession? Describe its types.
B. Discuss positive interaction occurring within Communities with suitable examples.
C. Explain Stages of Succession Process.
D. Discuss Predation and Competition.

Q-4 Answer the following (any Two) (14)

A. Explain Concept of adaptation to various environmental conditions.
B. Discuss Halophytes and Epiphytes.
C. Explain Morphological and Physiological adaptations of Mesophytes.
D. Explain Xerophytes with their Characteristics.

Q-5 Answer the following (14)

1. Define Dominant Species.
2. What is Gaia Hypothesis?
3. What is Tundra and Taiga?
4. Define Ecotone.
5. Enlist two flora and fauna of tropical forest.
6. What is synecology?
7. What is stable cycle and stable point in community?
8. Differentiate between intraspecific and interspecific Competition.
9. What is Climate Community?
10. What is Biodiversity?
11. Define Autecology.
12. What is Hydrophytes?
13. Differentiate between lentic and lotic ecosystem.
14. Explain Ecesis and Albedo

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2205E797

Candidate's Seat No :

B.Sc. (Sem.-V) Examination
304 CC Environmental Science
May-2017

Time : 3 Hours] **[Max. Marks : 70**

ENS-304 Climate change

Q-1. Answer any two 14

A. Explain global warming and its mitigation options.
B. What is climate agenda? Give details of international agencies working on climate change.
C. Describe different factors which affect the climate and its consequences.
D. What is a Carbon Footprint and Carbon credit? Describe how to reduce the carbon foot-print

Q-2. Answer any two 14

A. What is Logistic Population Growth? Describe graphing and equation of logistic population growth.
B. Explain Single and interacting population model.
C. Describe the dynamics of human population.
D. Describe Demographic transition.

Q-3. Answer any two 14

A. Explain application of computer in the field of environmental science.
B. Explain basis for climate modeling.
C. Describe SAS programming.
D. Give details of available software for climate analysis and forecast.

Q-4. Answer any two 14

A. What is decarbonization? Justify need for decarbonization of global economy
B. Define technological fixes for climate change with examples.
C. Describe any two decarbonization policies with reference to India.
D. Describe benefits and limitation of Politicization of climate change.

Q-5. Answer the following in brief 14

1. Who are the IPCC?
2. How does carbon credits work?
3. What is the role of Ministry of Health and Family Welfare?
4. What is MM5 model?
5. Limiting factors of population.
6. What is the difference between weather and climate?
7. List benefits of climate analysis.
8. What is Kyoto Protocol?
9. What is GDP?
10. Define El Niño.
11. What is Resolution?
12. Give definition of Population Growth Rate.
13. Give name of any two climatic model used for Hurricane forecasting.
14. What is the limitation of global climate mode?

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2305E827

Candidate's Seat No :_____

B.Sc. (Sem.-V) Examination

S.E. 305 Environmental Science

May-2017

Time : 3 Hours] **[Max. Marks : 70**

Instructions

1. All questions are compulsory.
2. Draw figures wherever necessary.

Q1. Answer any two of the following 14

1. Explain Liebig's Law of the Minimum.
2. Describe Shelford's Law of Tolerance.
3. Write a note on Molecular Chaperons.
4. Discuss the adaptive strategy of Extremophiles to alkalinity, acidity & high osmotic condition.

Q2. Answer any two of the following 14

1. Discuss the physiological aspects of metabolism in the thermophiles.
2. Explain the general characteristics of common thermophiles.
3. Describe the survival of thermophiles at high and low temperatures.
4. 'Thermophiles are important to biotechnology' - Explain.

Q3. Answer any two of the following 14

1. Describe the physical and chemical aspects of halophilic habitat.
2. Enlist few halophilic sites and explain its ecological parameters.
3. Explain the effect of osmotic pressure and water activity on halophiles
4. Discuss the biotechnological significance of halophiles.

Q4. Answer any two of the following 14

1. Explain the general characteristics of Radio- tolerant bacteria.
2. Describe the physico-chemical environment of xerophiles.
3. Write a note on oligotrophs.
4. Discuss the biotechnological applications of acidophiles.

Q5. Answer the following 14

1. Define alkalophiles.
2. Give the temperature range of hyperthemophiles for growth.
3. Give the example of radio resistant bacteria.
4. Which domain of life includes most Extremophiles?
5. State the habitat of barophiles.
6. Give two application of alkalophiles
7. Define osmotic pressure.
8. State the habitat of radiophiles.
9. Give the salt range of Halophiles.
10. What are piezophiles?
11. Give unit for expressing salinity.
12. Define: water activity.
13. How desiccation affects the growth of microorganisms?
14. Name the thermophilic organism used to check autoclave cycle.

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2005E766

Candidate's Seat No :

B.Sc. (Sem.-V) Examination

303 CC Environmental Science

Time : 3 Hours] **May-2017** **[Max. Marks : 70**

ENV-303 Environmental Toxicology.

Que: 1 Answer the following (Any two) **(14)**

A. Explain synergetic and antagonistic effect of the Toxicant.
B. Write short note on food additives and their toxic effects.
C. Explain chemical carcinogens and their toxic effect.
D. Describe Biochemical Effects of heavy metals.

Que: 2 Answer the following (Any two) **(14)**

A. Discuss principles of epidemiology.
B. Write short note on occupational diseases.
C. Discuss fact affecting toxic response.
D. Write detailed note on GM crops and their advantages and disadvantages.

Que: 3 Answer the following (Any two) **(14)**

A. Describe management of biomedical waste
B. Write note on Pyrolysis process.
C. Explain method of collection and segregation of solid waste management.
D. Describe Landfill process with advantages and disadvantages.

Que: 4 Answer the following (Any two) **(14)**

A. Discuss symptoms, prevention and treatment of cholera disease.
B. Explain transmission and prevention of botulism disease.
C. Write short note on infectious disease caused by *Salmonella.*
D. Write note on toxicity of Metals.

Que: 5 Answer the following **(14)**

1) Give two advantages of composting process.
2) Define: Recalcitrant.
3) Define: Silicosis.
4) Which metal cause brain cancer?
5) Write any two reducing agents used for treatment of Hazardous waste.
6) What is methanogenesis?
7) Give four names of four organo-chloride pesticides.
8) Write symptoms caused by exposure to solvent vapour.
9) Define: flavouring agents.
10) Symptoms of gingivitis.
11) Differentiate between solid waste and hazardous waste.
12) Differentiate between chronic and sub chronic toxicity.
13) Give two examples of fungicides.
14) Which carcinogen is responsible for liver cancer?