

FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

(CUCBCSS—UG)

Environment and Water Management

EWM 5B 05—EARTH SCIENCE

Time : Three Hours

Maximum : 80 Marks

Part A

*Answer all questions.
Each question carries 1 mark.*

Fill in the Blanks :

1. _____ is the breaking down or dissolving of rocks and minerals on the surface of the Earth.
2. _____ are called native elements.
3. Earth formed around _____ billion years ago.
4. Minerals occurring within a rock in small quantities are referred as _____.
5. Limestone is a _____ type of rock.
6. The _____ is described as an explosion about the origin of earth.
7. The oceanic crust is mainly composed of _____ and _____.
8. GPS means _____.
9. CRZ means _____.
10. Rain that falls from clouds but freezes before it reaches the ground is called _____.

(10 × 1 = 10 marks)

Part B

*Answer all questions.
Each question carries 2 marks.*

11. Write a short note on web resources for environmental studies.
12. Write any two applications of spread sheet.
13. What is cloud seeding ?

14. Write the names of any two metamorphic rocks.
15. What is lava ?
16. What are intrusive igneous rocks ?
17. What is hail ?
18. What is asthenosphere ?
19. What is the composition of core ?
20. What are tectonic plates ?

(10 × 2 = 20 marks)

Part C

*Answer any five questions.
Each question carries 6 marks.*

21. What is orogenesis and explain the types of Mountains.
22. Explain the classification and characteristics of rocks.
23. Explain the different control measures of coastal erosion.
24. Explain the different stages of disaster management.
25. Explain the classification of clouds.
26. Explain the different steps for processing images in photoshop.
27. Calculate and interpret the correlation coefficient of the two variables below :

Person	Hand	Height
A	17	150
B	15	154
C	19	169
D	17	172
E	21	175

28. The following are ages (in years) of 6 lions. Those lions were randomly selected from the 22 lions at your local zoo : 13, 2, 1, 5, 2, 7 Based on your sample, what is the average age of the lions ? What is the standard deviation ?

(5 × 6 = 30 marks)

Part D

*Answer any two questions.
Each question carries 10 marks.*

29. Explain the practical applications of GIS in Environmental Science.
30. Explain the interior of earth with the help of a neat diagram.
31. Explain the weathering of rocks.

(2 × 10 = 20 marks)

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FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

(CUCBCSS—UG)

Environment and Water Management

EWM 5B 07—ENVIRONMENTAL MICROBIOLOGY AND BIOTECHNOLOGY

Maximum : 80 Marks

Time : Three Hours

Part A*Fill in the Blanks.**Each question carries 1 mark.*

1. _____ is one of the vital symbiotic nitrogen-fixing bacteria.
2. _____ are naturally occurring substances that control pests by non-toxic mechanisms
3. GMO stand for _____.
4. The most widely used microbial pesticides are subspecies and strains of _____.
5. Nucleoside + Phosphate group forms _____.
6. DNA replicates by _____ method.
7. EPA stand for _____.
8. _____ is normal pH for drinking water.
9. _____ is a hydrogeochemical cycle without atmospheric phase.
10. _____ gas is produced by anaerobic waste decomposition.

(10 × 1 = 10 marks)

Part B*Answer all questions.**Each question carries 2 marks.*

11. What is MPN ?
12. What are Mycoplasma ?
13. What is the basic principle of spectrophotometer ?
14. What is Upwelling ?

Turn over

15. What are Plasmids ?
16. What is Biogas ?
17. What is Fermentation ?
18. What are the enzymes involved in DNA replication ?
19. What is food poisoning ?
20. What is Mycorrhiza ?

(10 × 2 = 20 marks)

Part C

*Answer any five questions.
Each question carries 6 marks*

21. Explain the different food preservation techniques.
22. Explain the micro-organisms involved in industrial activities.
23. Explain types and importance of gene mutation.
24. Explain the different methods of sewage treatment.
25. Explain the classification of bacteria and fungi.
26. Explain Bright field, phase contrast, dark, field, fluorescent and Electron microscopy.
27. Methods of estimation and isolation of microorganism in water.
28. Explain standard plate count method -membrane filter technique and MPN.

(5 × 6 = 30 marks)

Part D

*Answer any two questions.
Each question carries 10 marks.*

29. Write an essay on sources of water pollution, standards of different water quality parameters.
30. Write an essay on Genetic Engineering and recombinant DNA techniques.
31. Write an essay on role of soil microorganisms in Nitrogen, Carbon and Sulphur cycles.

(2 × 10 = 20 marks)

FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

(CUCBCSS—UG)

Environment and Water Management

EWM 5D 01—CHEMISTRY IN EVERYDAY LIFE

Time : Two Hours

Maximum : 40 Marks

Part A

*Fill in the Blanks.**Each question carries 1 mark.*

1. Sundarlal Bahuguna was part of _____ project.
2. Silent Valley project is related to _____ river.
3. NBA a social movement against _____ dam built across the Narmada River.
4. Bhopal tragedy is due to the leakage of _____ gas.
5. Ozone is present in _____ layer of atmosphere.
6. CFC stand for _____.
7. _____ is a Global Warming Potential gas.
8. _____ is a common solid waste disposal method in India.
9. _____ is the most common process used for soap making.
10. _____ and _____ are two parts of detergents.

(10 × 1 = 10 marks)

Part B

*Answer any five questions.**Each question carries 2 marks.*

11. What are Surfactants ?
12. What is WHO ?
13. What is Diels Alder reaction?
14. What is hard water ?

Turn over

15. What is Acid rain ?
16. What is Plachimada movement ?
17. What is Eutrophication ?

(5 × 2 = 10 marks)

Part C

*Answer any two questions.
Each question carries 5 marks.*

18. Explain the methods of vermicomposting.
19. Explain the methods for prevention of chemical accidents.
20. Explain food hygiene in the prevention of food poisoning.

(2 × 5 = 10 marks)

Part D

*Answer any one questions.
The question carries 10 marks.*

21. Write an essay on solid waste management, describe briefly Green Chemistry, Principles of Green Chemistry.
22. Write an essay on physico-chemicals and biological parameters of water quality and its standards

(1 × 10 = 10 marks)

FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

(CBCSS—UG)

Environment and Water Management

EWM 5D 01—CHEMISTRY IN EVERYDAY LIFE

Time : Two Hours

Maximum : 60 Marks

Section A (Short Answers)*Answer at least eight questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 24.*

1. What is BOD ?
2. What is MIC ?
3. The river flowing through Silent valley is _____.
4. What are detergents ?
5. What is acid rain ?
6. What is sanitary land filling ?
7. Sources of methane gas are _____.
8. The person behind Narmada Bachao Andolan _____.
9. What is WHO ?
10. Write the names of any two poisonous plants.
11. What is Eutrophication ?
12. What is biomagnification ?

(8 × 3 = 24 marks)

Section B (Paragraph)*Answer at least five questions.**Each question carries 5 marks.**All questions can be attended.**Overall Ceiling 25.*

13. Describe the cleaning action of soaps and detergents.
14. Explain the principles of green chemistry.

Turn over

15. Explain the steps for the prevention of chemical accidents.
16. Explain the physico-chemical and biological parameters of water analysis.
17. Explain the steps of Shampoo and toilet soap preparation.
18. Explain the food poisoning caused by chemicals.
19. Explain the different standards for water quality.

(5 × 5 = 25 marks)

Section C (Essay)

*Answer any one question.
The question carries 11 marks.*

20. Write an essay on environmental issues and the role of Environmental Movements in India.
21. Explain the Solid Wastes, Types and disposal methods of solid wastes.

(1 × 11 = 11 marks)

FIFTH SEMESTER U.G. DEGREE EXAMINATION, NOVEMBER 2021

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Environment and Water Management

EWM 5B 08—ENVIRONMENTAL PHYSICS—I

(2019 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A

Answer at least seven questions.

Each question carries 2 marks.

All questions can be attended.

Overall Ceiling 14.

1. Define Charle's law.
2. What is Rayleigh scattering ?
3. What is terrestrial radiation ?
4. Define heat capacity.
5. What is gradient wind ?
6. Define Reflection.
7. Define mass and velocity.
8. Define projectile motion.
9. What is temperature inversion ?
10. What is Absorption ?

(7 × 2 = 14 marks)

Section B

Answer at least five questions.

Each question carries 6 marks.

All questions can be attended.

Overall Ceiling 30.

11. Explain the horizontal motion of air in the atmosphere.
12. Describe vertical stability of the atmosphere.
13. Explain motion in vertical plane.
14. Write short notes on hydrometer.
15. Describe Bernoulli's principle.
16. Explain gas laws.
17. Write short notes on geotropic, gradient and friction layer wind.

(5 × 6 = 30 marks)

Section C

Answer any two questions.

Each question carries 8 marks.

18. Explain the laws of motion.
19. What is terrestrial radiation? Explain the thermal balance of the earth.
20. Explain the scattering, reflection and absorption of the atmosphere.
21. Briefly describe x-rays and its production and detection.

(2 × 8 = 16 marks)

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(CBCSS—UG)

Environment and Water Management

EWM 5B 07—ENVIRONMENTAL MICROBIOLOGY AND BIOTECHNOLOGY

(2019 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A (Short Answer Type Questions)*Answer at least seven questions.**Each question carries 2 marks.**All questions can be attended.**Overall Ceiling 14.*

1. What is sterilization ?
2. What are symptoms of tikka disease ?
3. What is denitrification ?
4. What are fungi ?
5. What is pure culture ?
6. What are aeroallergens ?
7. What is inoculation needle ?
8. What is the principle of laminar air flow ?
9. What is DNA ?
10. What is chlorophyceae ?

(7 × 2 = 14 marks)

Turn over

Section B

Answer at least five questions.

Each question carries 6 marks.

All questions can be attended.

Overall Ceiling 30.

11. Give an account of viruses.
12. Write down the sterilization techniques of media.
13. Explain the microbiology of domestic waste water
14. Explain the causes of food spoilage in fermented foods.
15. Describe membrane filter technique.
16. Explain sulphur cycle with neat diagram.
17. Explain the preparation of microbial samples.

(5 × 6 = 30 marks)

Section C

Answer any two question.

The question carries 8 marks.

18. Explain the structure and classification of bacteria.
19. Describe the estimation and isolation of micro-organisms in milk.
20. Explain the principle and application of autoclave and laminar air flow.
21. Explain the methods of estimation and isolation of micro-organisms in air, water and soil.

(2 × 8 = 16 marks)

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EWM 5B 06—ENVIRONMENTAL ECONOMICS, POLICIES AND LAWS

(2019 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A

Answer at least seven questions.

Each question carries 2 marks.

All questions can be attended.

Overall Ceiling 14.

1. What is NGO ?
2. Write any *two* environment regulating agencies in India.
3. What is Environment ?
4. What is Indian forest act ?
5. What are environmental services ?
6. What is polluter pays principle ?
7. What is Kyoto protocol ?
8. What is marginal cost ?
9. What is NEAA ?
10. What is sustainable development ?

(7 × 2 = 14 marks)

Section B

*Answer at least five questions.
Each question carries 6 marks.
All questions can be attended.
Overall Ceiling 30.*

11. Explain environmental resources and economic efficiency.
12. Explain the social benefits of economic development.
13. Explain the Montreal protocol.
14. Explain the marginal cost and benefits of economic development.
15. Explain the hospital waste management and handling rules.
16. Explain the Stockholm conference 1973.
17. What is the economics of climate change ?

(5 × 6 = 30 marks)

Section C

*Answer any two questions.
Each question carries 8 marks.*

18. Explain the meaning, role, interrelationship of environmental economics.
19. Explain the Rio summit, Wild life protection act, Article 3, Article 7 and article 17.
20. Explain the environmental problems and their solutions in environmental economics.
21. Explain the environment regulating agencies in India.

(2 × 8 = 16 marks)

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(CBCSS—UG)

Environment and Water Management

EWM 5B 05—EARTH SCIENCE

(2019 Admissions)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A*Answer at least ten questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 30.*

1. What is asthenosphere ?
2. What is the composition of crust ?
3. What is SIAL ?
4. What is meant by Tectonic plates ?
5. Explain continental drift theory.
6. What is tropopause ?
7. What is metamorphic rocks ?
8. What is Mohrs Scale ?
9. What is Ritche scale ?
10. What is magma ?
11. Differentiate focus and epicentre.
12. Write any *two* land slide prone area of Kerala.
13. What is radio activity ?
14. What is GIS ?
15. What is CRZ ?

(10 × 3 = 30 marks)

Turn over

Section B

Answer at least five questions.

Each question carries 6 marks.

All questions can be attended.

Overall Ceiling 30.

16. Explain the properties of minerals.
17. Explain rock cycle.
18. Explain the different layers of atmosphere.
19. Explain the plate boundaries and its impacts.
20. Explain the applications of remote sensing.
21. Explain electromagnetic spectrum.
22. Explain radioactive decay and nuclear reactions.
23. Explain the theories about the origin of earth.

(5 × 6 = 30 marks)

Section C

Answer any two questions.

Each question carries 10 marks.

24. Explain the various environmental applications of GIS.
25. Explain the interior of earth with suitable diagrams
26. Explain the weathering of rocks.
27. Explain the climate change phenomenon in India in the context of recent Kerala flood.

(2 × 10 = 20 marks)