



Name: Roll No.:

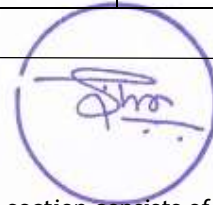
Branch: Signature of Invigilator:

Semester: IInd / IVth Date: 26/04/2022 (MORNING)

Subject with Code: CE101 ENVIRONMENTAL SCIENCE

Marks Obtained	Section A (30)	Section B (20)	Total Marks (50)

INSTRUCTION TO CANDIDATE



1. The booklet (question paper cum answer sheet) consists of two sections. First section consists of MCQs of 30 marks. Candidates may mark the correct answer in the space provided / may also write answers in the answer sheet provided. The Second section of question paper consists of subjective questions of 20 marks. The candidates may write the answers for these questions in the answer sheets provided with the question booklet.
2. The booklet will be distributed to the candidates before 05 minutes of the examination. Candidates should write their roll no. in each page of the booklet.
3. Place the Student ID card, Registration Slip and No Dues Clearance (if applicable) on your desk. All the entries on the cover page must be filled at the specified space.
4. Carrying or using of mobile phone / any electronic gadgets (except regular scientific calculator)/chits are strictly prohibited inside the examination hall as it comes under the category of unfair means.
5. No candidate should be allowed to enter the examination hall later than 10 minutes after the commencement of examination. Candidates are not allowed to go out of the examination hall/room during the first 30 minutes and last 10 minutes of the examination.
6. Write on both side of the leaf and use pens with same ink.
7. The medium of examination is English. Answer book written in language other than English is liable to be rejected.
8. All attached sheets such as graph papers, drawing sheets etc. should be properly folded to the size of the answer book and tagged with the answer book by the candidate at least 05 minutes before the end of examination.
9. The door of examination hall will be closed 10 minutes before the end of examination. Do not leave the examination hall until the invigilators instruct you to do so.
10. Always maintain the highest level of integrity. Remember you are a BITian.
11. Candidates need to submit the question paper cum answer sheets before leaving the examination hall.

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS : B.Tech
BRANCH : All

SEMESTER: IV
SESSION: SP22

SUBJECT: CE101 Environmental Science

TIME : 2 HOURS

FULL MARKS: 50

All questions are compulsory.

Multiple choice questions. **Write only the correct option in words (eg. 1.c. air pollution)** in your copy. (30X1=30)

1. The food chain which starts with dead organic matter is called
 - a) grazing food chain
 - b) dead organic food chain
 - c) detritus food chain
 - d) growing food chain
2. Matter and energy cycles are
 - a) acyclic and cyclic
 - b) both cyclic
 - c) cyclic and acyclic
 - d) both acyclic
3. In a pond ecosystem, the ecological pyramid of number, biomass, and energy are
 - a) Inverted, inverted and upright, respectively
 - b) upright, inverted and upright, respectively
 - c) Inverted, upright, and inverted, respectively
 - d) All Inverted
4. The ecological energetics states that the ecological pyramid of energy is always upright. This is due to
 - a) Higher ecological efficiency of the producers
 - b) Higher ecological efficiency of the consumers
 - c) Similar ecological efficiency of both the groups
 - d) Lower ecological efficiency of producers
5. Secondary productivity is
 - a) GPP – respiration loss
 - b) NPP – respiration loss
 - c) NPP + respiration loss
 - d) Primary productivity +respiration
6. Nutrient recycling in the environment is _____ type of Ecosystem service.
 - a) Provisioning
 - b) Regulating
 - c) Supporting
 - d) Socio-cultural
7. Electrostatic precipitators are used to remove
 - a) nitrogen dioxide
 - b) Sulphur dioxide
 - c) Particulate matter
 - d) Odour

8. The lowest layer of the atmosphere is called
 - a) Thermosphere
 - b) Stratosphere
 - c) Mesosphere
 - d) Troposphere
9. Causative agent of ozone layer depletion
 - a) Photochemical smog
 - b) Industrial smog
 - c) Photochemical oxidants
 - d) Chlorofluoro carbon
10. Which group of plants /organisms act as bio indicator of air pollution
 - a) Lichen
 - b) Fern
 - c) Herbs
 - d) Bacteria
11. Accumulation and magnification of toxic metals through food chain at different trophic levels is known as
 - a) Hyperaccumulation
 - b) Extraction
 - c) Bioaccumulation
 - d) Biomagnification
12. Sulphur contained in coal leads to the following phenomenon in the environment.
 - a) Global warming
 - b) Ozone formation
 - c) Acid rain
 - d) Fog
13. Leak of gases and vapors from industry are of which of the following category?
 - a) Mobile source
 - b) Point source
 - c) Area source
 - d) Fugitive source
14. A coal combustion reaction occurring at 1400°C can produce which of the following pollutants?
 - a) NO_x
 - b) PAN
 - c) Ozone
 - d) Alfa particles
15. High volume sampling of air required for which of the following category?
 - a) Stack monitoring
 - b) Ambient air monitoring
 - c) Indoor air monitoring
 - d) Tailpipe exhaust monitoring
16. Amount of oxygen needed by the aerobic bacteria which leads to the decomposition of sewage, is known as
 - a) Biological oxygen demand
 - b) Biochemical oxygen demand
 - c) Chemical Oxygen demand
 - d) Sediment Oxygen demand
17. The nitrate concentration in domestic water supplies, is limited to
 - a) 45 ppm
 - b) 55 ppm

- c) 25 ppm
 - d) 15 ppm
18. Methane can be formed from sewage sludge due to
- a) Aerobic reaction
 - b) Anaerobic reaction
 - c) Anoxic reaction
 - d) Both anaerobic and anoxic reactions
19. Permanent hardness of water is due to
- a) Magnesium sulfate
 - b) Magnesium Bicarbonate
 - c) Magnesium Carbonate
 - d) Calcium Carbonate
20. In freshwater aquatic systems which nutrient controls eutrophication?
- a) C
 - b) N
 - c) P
 - d) Fe
21. Which of the following is a physical water treatment process?
- a) Sedimentation
 - b) Coagulation
 - c) Chlorination
 - d) Fluoridation
22. The process of burning municipal solid wastes under excess oxygen in a specific furnace is called
- a) Pyrolysis
 - b) Gasification
 - c) Incineration
 - d) All of the above
23. Sanitary landfills can release the following gases due to the decomposition of waste.
- a) Methane
 - b) Oxygen
 - c) Nitric oxide
 - d) All of the above
24. Saline soils are characterized by
- a) High EC, High Na, pH >8.5
 - b) Low EC, High Na, pH >8.5
 - c) High EC, Low Na, pH <8.5
 - d) Low EC, Low Na, pH <8.5
25. The burning of the waste is not an acceptable practice of solid waste management because
- a) It is very costly
 - b) It requires a lot of space
 - c) It requires modern technologies
 - d) It causes several environmental issues
26. What is the soil profile?
- a) A cross-sectional view of the horizons in a soil
 - b) A front view of the horizons in a soil

- c) A cross-sectional view of the horizons in rocks
- d) A front view of the horizons in rocks

27. Night-time noise limit for a commercial area as per Noise pollution rules of India is

- a) 50 dB(A)
- b) 55 dB(A)
- c) 75 dB(A)
- d) 70 dB(A)

28. Noise measuring instruments are most commonly used in

- a) Research and development labs
- b) Occupational hygiene
- c) Public places
- d) All of the above

29. Chemicals that cause alterations to genetic material in cells following exposure to radiation are termed as

- a) Teratogen
- b) Toxicant
- c) Carcinogen
- d) Mutagen

30. Radioactive waste that are conditioned and immobilized in highly durable matrices like cement, polymer etc. are examples of

- a) Delay and decay
- b) Concentrate and contain
- c) Dilute and disperse
- d) All of the above

Q.31. Compare between food chain and food web of a terrestrial ecosystem, with appropriate examples. (4)

Q.32. Discuss the prevalent methods used in vehicular air pollution control. (4)

Q.33. Explain the Activated sludge Process used in wastewater treatment with a sketch. (4)

Q.34. Write the principle of a sanitary landfill for treating municipal solid waste. (4)

Q.35. Suggest noise pollution control strategy for prevention and control of noise pollution in a noisy industry. (4)

-----26/04/2022-----



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