

AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS IX




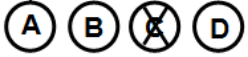

MODEL EXAMINATION PAPER 2023 AND ONWARDS

Environmental Studies Paper I

Time: 1 hour 5 minutes Marks: 35

INSTRUCTIONS

1. Read each question carefully.
2. Answer the questions on the separate answer sheet provided. DO NOT write your answers on the question paper.
3. There are 100 answer numbers on the answer sheet. Use answer numbers 1 to 35 only.
4. In each question, there are four choices A, B, C, D. Choose ONE. On the answer grid, black out the circle for your choice with a pencil as shown below.

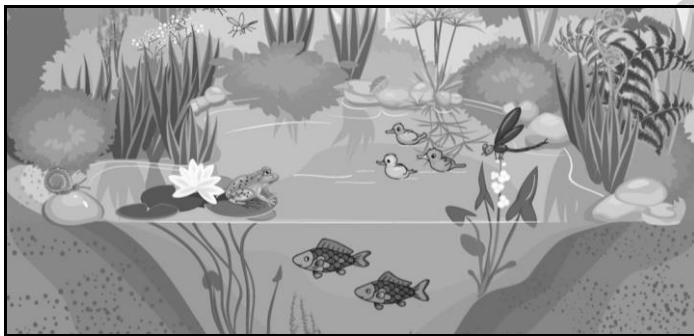
| Correct Way | | Incorrect Ways | |
|-------------|---|----------------|---|
| 1 |  | 1 |  |
| | | 2 |  |
| | | 3 |  |
| | | 4 |  |

Candidate's Signature

5. If you want to change your answer, ERASE the first answer completely with a rubber, before blacking out a new circle.
6. DO NOT write anything in the answer grid. The computer only records what is in the circles.

1. A degree in environmental science is MOST appropriate to have career as a
 - A. librarian.
 - B. dietician.
 - C. pathologist.
 - D. toxicologist.
2. In 1962, Rachel Carson in her book 'Silent Spring' addressed the issue of environmental degradation for the first time. She emphasised the dangers of the use of
 - A. fertilisers.
 - B. pesticides.
 - C. fossil fuels.
 - D. nuclear power.
3. Environmental Science and biology are correlated as both subjects deal with the study of
 - A. behaviours and minds of human beings.
 - B. diverse communities and their interactions.
 - C. interactions among organisms and their surroundings.
 - D. biological processes at the cellular and molecular levels.
4. Markhor is the national animal of Pakistan which has been classified as 'near threatened' by the
 - A. Civil Society Organization.
 - B. World Health Organization.
 - C. World Conservation Monitoring Centre.
 - D. International Union for Conservation of Nature.
5. One of the terrestrial planets in the solar system is
 - A. Venus.
 - B. Saturn.
 - C. Jupiter.
 - D. Neptune.
6. The combined mass of water found on, under and above the surface of a planet is known as
 - A. biosphere.
 - B. lithosphere.
 - C. atmosphere.
 - D. hydrosphere.
7. In contrast to other planets of the solar system, the Earth is habitable because of the following reasons EXCEPT the
 - A. rotation of Earth on its axis.
 - B. distance of Earth from the Moon.
 - C. cycling of chemicals in the ecosystem.
 - D. presence of water and mineral resources.

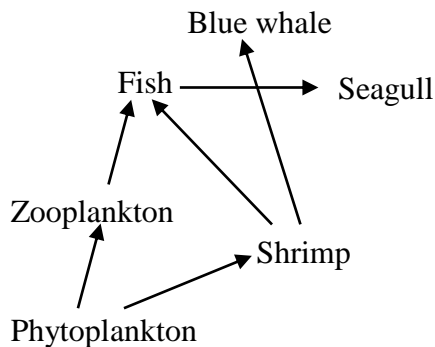
8. The global sum of all ecosystems is the
- A. biosphere.
 - B. lithosphere.
 - C. atmosphere.
 - D. hydrosphere.
9. A considerable amount of water enters the atmosphere through the process of
- A. respiration.
 - B. transpiration.
 - C. condensation.
 - D. photosynthesis.
10. The given picture is an example of a/ an



- A. population.
 - B. ecosystem.
 - C. atmosphere.
 - D. hydrosphere.
11. An increase in the addition of nitrogen containing fertilisers to the soil does NOT result in
- A. oxygen saturation.
 - B. nitrogen saturation.
 - C. weaker productivity.
 - D. destruction of plants.
12. Which of the following food chains will retain MOST of the energy?
- A. cabbage → man
 - B. fruits → bats → eagle
 - C. carrots → rabbit → fox → lion
 - D. grass → grasshopper → frog → snake → hawk
13. An example of a carnivore feeding on a herbivore is
- A. fungi eating trees.
 - B. snakes eating mice.
 - C. rabbits eating carrots.
 - D. snails eating dandelions.

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14. The given diagram shows a simple food web.



The primary consumers in the given food web are

- A. seagull and fish.
 - B. blue whale and seagull.
 - C. zooplankton and shrimp.
 - D. phytoplankton and zooplankton.
15. What happens in the nitrification step of the nitrogen cycle?
- A. Ammonia is released from the dead protoplasm.
 - B. Nitrates are formed by the oxidation of ammonia.
 - C. Nitrates are broken down in the absence of oxygen.
 - D. Nitrogen is incorporated into the amino acids of producers.
16. Which of the following organisms recycles dead organic matter into inorganic substances?
- A. Rat
 - B. Toad
 - C. Seaweed
 - D. Mushroom
17. What would be the effect on the given food chain if 90% of the birds migrate to another country because of change in climate?

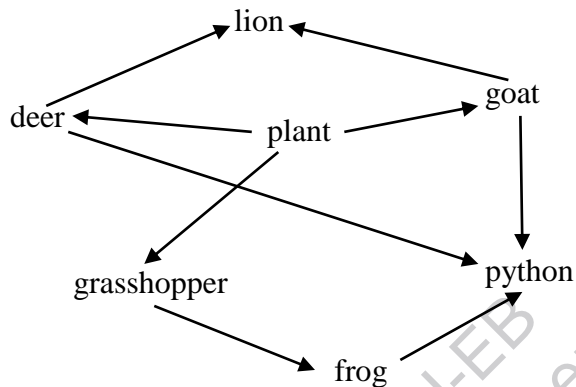
Seeds → snails → birds → foxes

| | Increase | Decrease |
|---|----------|----------|
| A | Seeds | Snails |
| B | Foxes | Seeds |
| C | Foxes | Snails |
| D | Snails | Foxes |

18. Which of the following is an abiotic component of the ecosystem?

- A. Trees
- B. Water
- C. Rabbit
- D. Bacteria

19. The number of food chains in the given food web is



- A. 2
- B. 3
- C. 5
- D. 7

20. Population projection is independent of

- A. birth rate.
- B. death rate.
- C. attitude of people.
- D. migration of people.

21. The population size of a country is NOT reduced by

- A. famine.
- B. diseases.
- C. family planning.
- D. industrialisation.

22. If a country has an annual growth rate of 2.5%, then its population will be doubled in approximately

- A. 14 years.
- B. 28 years.
- C. 67 years.
- D. 72 years.

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23. The factor that causes a decrease in the population size of a country is
- A. natality.
 - B. mortality.
 - C. immigration.
 - D. immunisation.
24. To keep a natural balance, in the ratio of males and females in a population, one should stop
- A. child labour.
 - B. sex-based abortions.
 - C. women empowerment.
 - D. the use of birth control pills.
25. Due to overgrowing demand for food products, a huge number of trees are cut down to grow crops and for cattle grazing. The cutting down of trees affects the environment with an increase in
- A. carbon dioxide.
 - B. sulphur dioxide.
 - C. sulphur trioxide.
 - D. carbon monoxide.
26. The immediate source of indoor pollution is
- A. forest fire.
 - B. tobacco smoke.
 - C. vehicle emission.
 - D. incineration of waste.
27. The purpose of aeration in wastewater treatment is to
- A. separate grease.
 - B. kill microorganisms.
 - C. remove large solid objects.
 - D. decompose organic wastes.
28. An example of biomedical waste is
- A. fertiliser.
 - B. fossil fuel.
 - C. pesticides.
 - D. animal tissues.
29. Soil erosion occurs naturally through wind and water, but farming activities make it even worse. The MOST environmental friendly remedy to prevent the erosion of the field's topsoil would be to
- A. plant grass and shrubs.
 - B. use tillage farming technique.
 - C. use fine sand, silt and clay-textured soil.
 - D. have steeper and longer slope of agricultural field.

30. Which of the following emits chlorofluorocarbons in the environment?
- A. Forest fire
 - B. Aerosol spray
 - C. Fuel combustion
 - D. Biological decay
31. An INCORRECT way of disposing radioactive waste is to
- A. burn it in the incineration furnace.
 - B. store it at geologically stable sites.
 - C. seal it in a non-corrosive container.
 - D. store it deep under the ground in concrete vaults.
32. The sound of a lawn mower is classified as noise because it produces
- I. a soothing and pleasing noise
 - II. shrill and meaningless sound
 - III. irregular waveforms and wavelengths
- A. I only.
 - B. II only.
 - C. I and III.
 - D. II and III.
33. Loud music and noise cause pollution that affects human health. Apart from damaging human ears, they may also cause
- A. fever.
 - B. asthma.
 - C. cholera.
 - D. hypertension.
34. According to doctors, a pregnant woman should not have abdominal X-ray. This is because the exposure to high-dose radiation increases the risk of the baby being born with a/ an
- A. skin rash.
 - B. eye infection.
 - C. intellectual disability.
 - D. electrolyte imbalance.
35. Radiation therapy not only destroys cancerous cells but also damages healthy cells in the treatment area. The healthy cells that are affected the MOST include
- A. fat cells in the adipose tissue.
 - B. blood cells in the bone marrow.
 - C. cardiac muscle cells in the heart.
 - D. muscle cells in the muscle tissue.

END OF PAPER

Please use this page for rough work

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