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(FOR THE CANDIDATES ADMITTED **22UZY612**

DURING THE ACADEMIC YEAR 2022 ONLY) **REG.NO. :**

N.G.M.COLLEGE (AUTONOMOUS): POLLACHI

END-OF-SEMESTER EXAMINATIONS: MAY 2025

BSC.ZOOLOGY(Aided) **MAXIMUM MARKS: 50**

SEMESTER-V1 **TIME : 3 HOURS**

PART – III

22UZY612- ECOLOGY AND EVOLUTION

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS. (K1)

1. What is the main process involved in pedogenesis?

a) Weathering of rocks b) Deposition of sediments c) Soil compaction d) Leaching of minera

2. In which relationship does only one organism benefit without harming the other?

a) Parasitism b) Commensalism c) Mutualism d) Competition

3. What was the energy source used in the Miller-Urey experiment to simulate lightning?

a) Heat From volcanic eruptions b) Ultraviolet radiation c) Electric sparks d) Nuclear radiation

4. Darwin's Fnches from the Galápagos Islands are an example of_____

a) Co-evolution b) Adaptive radiation c) Artificial selection d) Genetic drift

5. Which dating method is most commonly used to determine the absolute age of a fossil?

a) Radiometric dating b) Stratigraphy c) Thermoluminescence d) Fluorine analysis

ANSWER THE FOLLOWING:- (K2)

6. Define thermal stratification.

7. Explain parasitism.

8. What is meant by paleontology?

9. What is the main concept of Lamarckism?

10. Define fossils.

SECTION – B (5 X 3 = 15 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K3)

11. a) Describe the process of pedogenesis and its significance in soil formation

(OR)

b) Examine how temperature influences the metabolic rates of aquatic organisms

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12. a) Compare the processes of nitrification and denitrification in the nitrogen cycle

(OR)

b) Examine the physiological challenges Astronauts face during prolonged space missions

13. a) Assess the differences between abiogenesis theory with the biogenesis theory.

(OR)

b) Explain homologous structures with an example.

14. a) Describe the concept of Natural selection as proposed by Charles Darwin.

(OR)

b) Compare the theory of Lamarckism with Darwinism

15. a) Describe the different types of fossils

(OR)

b) Examine the role of carbon dating in determining the age of fossils.

SECTION – C (5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K4 (Or) K5)

16. a) Discuss the biological effects of light on circadian rhythms and its role in regulating sleep-wake cycles in animals **(OR)**

b) Investigate how the salinity and temperature influences the organisms living in freshwater, seawater, and estuarine environments.

17. a) Discuss the steps involved in the sulfur cycle and evaluate how human activities, such as fossil fuel combustion, influence sulfur cycling and environmental health.

(OR)

b) Differentiate between the types of Parasites and explain their adoptability with Animal relationship?

18. a) Examine how palaeontological evidence, such as transitional fossils and fossil distribution, supports Darwin's theory of natural selection.

(OR)

b) Summarize the significance of Urey and Miller's findings in the context of Oparin's chemical evolution theory, highlighting the implications for the origin of life on Earth.

19. a) List the limitations of Darwinism in explaining the mechanisms of heredity.

(OR)

b) Evaluate the contributions of Lamarckism to evolutionary biology, highlighting both its positive aspects and its limitations, with examples.

20. a) Discuss the reliability of radiometric dating methods in determining fossil age, highlighting both the strengths and weaknesses of these technique.

(OR)

b) Compare the Paleozoic and Mesozoic eras in terms of major events and evolutionary milestones.

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