



INDIAN SCHOOL AL WADI AL KABIR

CLASS: XI
DATE: 03-12-2023

Sub: BIOLOGY (044)
SET I

MAX.MARKS: 70
TIME: 3 HOURS

General Instructions:

- (i) All questions are compulsory.
- (ii) The question paper has five sections and 33 questions. All questions are compulsory.
- (iii) **Section–A** has 16 questions of 1 mark each; **Section–B** has 5 questions of 2 marks each; **Section– C** has 7 questions of 3 marks each; **Section– D** has 2 case-based questions of 4 marks each; and **Section–E** has 3 questions of 5 marks each.
- (iv) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
- (v) Wherever necessary, neat and properly labeled diagrams should be drawn.

| SECTION-A | | |
|-----------|--|-------|
| Q.No. | Question | Marks |
| 1 | What is the correct form of writing a scientific name? a) <i>Mangifera indica</i> b) Mangifera indica c) <i>Mangifera Indica</i> d) <u><i>Mangifera indica</i></u> | 1 |
| 2 | What do you understand by the term ‘taxon’? a) Group of related species b) Group of related genera c) Branch of study of organisms and their diversities d) Unit of classification | 1 |
| 3 | The five-kingdom classification consists of: a) Monera, Euglenoids, Ascomycetes, Plants and Animals b) Monera, Protista, Fungi, Plants, Shrubs c) Monera, Protista, Fungi, Plantae, Animalia d) Monera, Eukaryotes, Prokaryotes, Fungi, Animalia | 1 |
| 4 | Roots with fungal association is called as: a) Mycorrhiza b) Cyanobacteria c) Mycelium d) Mycobacterium | 1 |

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| 5 | Bioluminescence is due to the presence of a) Chlorophyll a b) Chlorophyll d c) Luciferin d) RuBisCO | 1 |
| 6 | When stamens are attached to the perianth it is called as: a) Epipetalous b) Epiphylous c) Gamosepalous d) Gamopetalous | 1 |
| 7 | The plumule and the radicle are enclosed in sheath which are called _____ and _____ respectively. a) Scutellum and Coleoptile b) Coleoptile and Coleorhiza c) Plumule sheath and root cap d) Coleorhiza and Coleoptile | 1 |
| 8 | Stele is : a) The Metaxylem ring between the endodermic and pith. b) The cambial ring between the vascular tissues c) Tissues which exclude Vascular bundles, Pith, pericycle. d) Tissues which include Vascular bundles, Pith, Pericycle. | 1 |
| 9 | In frog, the Testis is attached to the Kidneys through: a) Vasa efferentia b) Vasa differentia c) Urino genital duct d) Cloaca | 1 |
| 10 | The nucleoplasm contains: a) Nucleus and cytoplasm b) Nucleolus and chromatin c) RNA and DNA d) Protein and nucleoli | 1 |
| 11 | The chromosomes which are slightly away from the middle is: a) Acrocentric b) Sub-metacentric c) Metacentric d) Telocentric | 1 |
| 12 | The tertiary structure of protein can be observed in: a) RuBisCO, Hemoglobin, RNA b) Collagen, Hemoglobin, Cholesterol c) Hemoglobin, Cellulose, Nucleic Acids d) Antibodies, Ribosomes, Hemoglobin | 1 |
| Question No. 13 to 16 consist of two statements – Assertion (A) and Reason (R). Answer | | |

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| | | |
| 13 | Assertion: Primary CO ₂ fixation product in C ₃ plants is 3PGA. Reason: 3PGA is a 4-carbon molecule. | 1 |
| 14 | Assertion: The activation energy is not affected by enzymatic concentration. Reason: The enzymes certainly influence the rate of forward reaction. | 1 |
| 15 | Assertion: Heart failure can lead to heart attack in due course of time. Reason: Heart failure is the damaged heart, when untreated can lead to heart attack. | 1 |
| 16 | Assertion: Double circulation takes places simultaneous with blood entering and leaving the heart at the same time. Reason: The blood which leaves the heart is directly sent to the lungs or body at the same time respectively. | 1 |
| SECTION-B | | |
| 17 | Explain the floral formula for the Solanaceae Family. Give appropriate examples for Solanaceae. OR Explain the terms: i) Zygomorphic ii) Entire leaf iii) Sessile Leaf iv) Syncarpous | 2 |
| 18 | What do the terms phycobiont and mycobiont signify. Explain with appropriate example. | 2 |
| 19 | Both Gymnosperms and Angiosperms bear seeds, then why are they classified separately. Explain with appropriate examples. | 2 |
| 20 | What are the functions of airbladder in Pisces? | 2 |
| 21 | Draw the structure of amino acid Alanine. | 2 |
| SECTION-C | | |
| 22 | Name the stage of cell cycle at which one of the following events occur: i) Chromosomes are moved to spindle equator. ii) Centromere split and chromatids separate. iii) Pairing between homologous chromosomes takes place. OR | 3 |

| | Explain the different phases under Interphase. | | | | | | | | | | | | | | | |
|--|--|---|-----------------|-----------------------|---|----------------|--|-------------------------|---|------------------------|---|--------------------------|---|--------------------|---------------------------------|-------------------|
| 23 | What is inflorescence? Explain the basis for the different types of inflorescences in flowering plants. Give appropriate examples. | 3 | | | | | | | | | | | | | | |
| 24 | Draw illustrations to bring out anatomical differences between Dicot Stem and Monocot Stem. | 3 | | | | | | | | | | | | | | |
| 25 | Fill in the table with correct information. | 3 | | | | | | | | | | | | | | |
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| 26 | What happens to the respiratory process in a man going up a hill? | 3 | | | | | | | | | | | | | | |
| 27 | Define a cardiac cycle, cardiac output, and cardiac arrest. | 3 | | | | | | | | | | | | | | |
| 28 | Match the Column I with Column II: | 3 | | | | | | | | | | | | | | |
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SECTION-D

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| <p>30</p> | <p>The body of a frog is covered with skin. The dorsal side of the body is olive green in color with irregular dark spots. The ventral side is uniformly pale yellow. Mucous glands are present in the skin, which makes the skin moist, smooth, and slippery. Frogs absorb water through their skin but never drink it.</p> <p>The body of the frog is divided into the head and trunk. A neck and tail are absent. Eyes are bulged and covered with a protective membrane while in water, known as a nictitating membrane. The ear (membranous tympanum) receives sound signals. Hind limbs are larger and more muscular than forelimbs. Hind limbs end in five digits, and forelimbs end in 4 digits. To help in swimming, feet have webbed digits.</p> <p>Frogs exhibit sexual dimorphism. Male frogs can be distinguished from female frogs by sound-producing vocal sacs and a copulatory pad on the first digit of the fore limb.</p> | <p>4</p> | | | | | | |

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| SECTION-E | | | | | | | | |
| 31 | <p>Explain with a well labelled diagram, the types of chromosomes with respect to the position of the centromere.</p> <p style="text-align: center;">OR</p> <p>a) Name two cell organelles that you have studied which are double membrane bound. b) What are the characteristics of each of the organelles? c) State their functions with a well labelled diagram.</p> | 5 | | | | | | |
| 32 | <p>Explain the process of inspiration and expiration under normal conditions.</p> <p style="text-align: center;">OR</p> <p>How does exchange of gases in humans take place between the alveolus and the blood capillaries? Explain with a flow chart.</p> | 5 | | | | | | |
| 33 | <p>Distinguish between the Anaphase of Mitosis and Anaphase I of Meiosis.</p> <p style="text-align: center;">OR</p> <p>Describe the following with a well labelled diagram: i) Synapsis ii) Bivalent iii) Chiasmata iv) Homologous Chromosome v) Sister Chromatids</p> | 5 | | | | | | |