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Section–A has 16 questions of 1 mark each; **Section–B** has 5 questions of 2 marks each;

SECTION-A		
Q.No.	Question	Marks
1	Choose the correct order of the taxonomic classification for any organism. a) Phylum -> Kingdom -> Genus -> Species b) Phylum -> Genus -> Species -> Kingdom c) Kingdom <-Phylum <- Class <- Order d) Kingdom <- Phylum <- Order <- Class	1
2	What do you understand by the term ‘Nomenclature’? a) Classify and systemize organisms. b) A synonym for Museum c)Standardization the naming of living organisms. d)Representation of a single Family.	1
3	Who proposed the two-kingdom classification? a) Schleiden and Schwan b) Robert Hooke c) R.H. Whittaker d) Linnaeus	1
4	Bryophyta are divided into: a) Liverworts and Mosses b) Liverworts and Fungi c) Mosses and Deuteromycetes d) Gymnosperms and Angiosperms	1
5	Two Phyla which contains antheridia are: a) angiosperms and gymnosperms b) Bryophyta and Pteridophyta	1

	c) Pteridophyta and Algae d) Algae and Fungi	
6	Why is air bladder present in Pisces? a) Air bladder is present in the bones to let the bones feel light. b) To help with flying c) To help them with swimming and keeping the body afloat. d) Helps in excretion	1
7	Tympanic membrane is present in which class of Animal Kingdom? a) Cyclostomata b) Chondrichthyes c) Mammals d) Amphibia	1
8	The _____ turns into shoot and _____ into roots. a) Coleoptile and Endosperm b) Plumule and Radicle c) Coleorhiza and Coleoptile d) Radicle and Plumule	1
9	Which part is the edible part of the fruit ' <i>Mangifera indica</i> '? a) Endocarp b) Mesocarp c) Pericarp d) Epicarp	1
10	What is the function of Cloaca? a) Outlet for intestinal b) Outlet for urinary c) Both and b. d) Used for Respiration	1
11	The carotenoid pigments are present in what type of Plastids? a) Leucoplast b) Chromoplast c) Elaioplasts d) Amyloplast	1
12	In <i>Amoeba</i> , contractile vacuoles are important for a) For swimming b) Osmoregulation c) Reproduction d) For engulfing.	1
Question No. 13 to 16 consist of two statements – Assertion (A) and Reason (R). Answer		

13	Assertion: Amino Acids are neutral in charge. Reason: This is because they are present in Zwitterionic form.	1
14	Assertion: Hemoglobin takes up tertiary structure of protein. Reason: Hemoglobin contains two alpha type and two beta type subunits.	1
15	Assertion: Enzymatic action is affected by temperature, pH, and substrate concentration. Reason: Sometimes, activation energy is further lowered by adding heat to the reaction.	1
16	Assertion: A synaptonemal complex is formed in zygotene phase of Prophase I of Meiosis I. Reason: At the synapsis the parental genes are exchanged and are the main reason for variations and evolution.	1
SECTION-B		
17	What do the terms phycobiont and mycobiont signify?	2
18	How are viroid different from viruses? Answer in tabular column.	2
19	Give 4 comparisons between the prokaryotic and eukaryotic cells.	2
20	Draw the general structure of an amino acid also draw the structure of Alanine with the different groups.	2
21	Briefly describe the events taking place in Interphase. OR What do you understand by Cytokinesis and how is it different from Karyokinesis.	2
SECTION-C		
22	How would you distinguish between Dicots from Monocots. Explain at least 5 differences in a tabular column.	3
23	Could the number of eggs or young ones produced by an oviparous and viviparous mother be equal? Explain with reason.	3
24	What are the peculiar features that you find in parasitic Platyhelminthes. Mention at least 6.	3
25	Briefly describe the different position of Floral parts on thalamus with a well labelled diagram. OR	3

	Explain and give the floral formula for the Family Solanaceae with examples.	
26	What is Cambium? Explain the formation of Xylem and Phloem from cambium.	3
27	Who gave the Fluid mosaic model of Plasma membrane? Explain the model with a well labelled diagram.	3
28	Give three significances of Meiosis and Mitosis.	3
SECTION-D		
29	<p>The skin of frog <i>Rana tigrina</i>, is smooth and slippery due to the presence of mucus. The skin is always maintained in a moist condition. The color of dorsal side of body is generally olive green with dark irregular spots. On the ventral side the skin is uniformly pale yellow. The frog never drinks water but absorb it through the skin. Body of a frog is divisible into head and trunk. A neck and tail are absent. Above the mouth, a pair of nostrils is present. Eyes are bulged and covered by a nictitating membrane that protects them while in water. On either side of eyes, a membranous tympanum (ear) receives sound signals. The forelimbs and hind limbs help in swimming, walking, leaping, and burrowing. The hind limbs end in five digits, and they are larger and muscular than fore limbs that end in four digits. Feet have webbed digits that help in swimming. Frogs exhibit sexual dimorphism. Male frogs can be distinguished by the presence of sound producing vocal sacs and a copulatory pad on the first digit of the fore limbs which are absent in female frogs.</p> <p>1.) Frogs eyes are generally covered by _____ which is protective in function.</p> <p>a) Camouflage membrane b) Copulatory membrane c) Nictitating membrane d) Tympanum membrane</p> <p>2.) _____ is the unique and distinguishing as well as sexual character of male frog.</p> <p>a) Presence of webbed digits b) Presence of copulatory pad c) Presence of Nictitating membrane d) Presence of membranous tympanum</p> <p>3.) What is mean by poikilotherms?</p> <p>4.) Why Frogs are not seen during peak summer and winter?</p>	4

OR

Each muscle is made of many long, cylindrical fibers arranged in parallel arrays. These fibers are composed of numerous fine fibrils, called myofibrils. Muscle fibers contract in response to stimulation, then relax and return to their uncontracted state in a coordinated fashion. Their action moves the body to adjust to the changes in the environment and to maintain the positions of the various parts of the body. In general, muscles play an active role in all the movements of the body. Muscles are of three types, skeletal, smooth, and cardiac. Skeletal muscle tissue is closely attached to skeletal bones. In a typical muscle such as the biceps, striated (striped) skeletal muscle fibers are bundled together in a parallel fashion.

The smooth muscle fibers taper at both ends and do not show striations. Cell junctions hold them together and they are bundled together in a connective tissue sheath. The wall of internal organs such as the blood vessels, stomach and intestine contain this type of muscle tissue. Smooth muscles are 'involuntary' as their functioning cannot be directly controlled. We usually are not able to make it contract merely by thinking about it as we can do with skeletal muscles.

Cardiac muscle tissue is a contractile tissue present only in the heart. Cell junctions fuse the plasma membranes of cardiac muscle cells and make them stick together. Communication junctions (intercalated discs) at some fusion points allow the cells to contract as a unit, i.e., when one cell receives a signal to contract, its neighbors are also stimulated to contract.

1.) _____ is the type of involuntary muscles.

a) Smooth Muscles

b) Cardiac Muscles

c) Both a & b

d) Skeletal Muscle

2.) Identify correct statement.

Statement 1 – Cardiac muscle tissue is a contractile tissue present only in the heart.

Statement 2 – The smooth muscle fibers taper at both ends and do not show striations.

Statement 3 – Each muscle is made of many long, cylindrical fibers arranged in parallel arrays.

	<p>Statement 4 – Skeletal muscle tissue is closely attached to skeletal bones.</p> <p>a) Both 1 & 2</p> <p>b) Only 3</p> <p>c) Both 2 & 4</p> <p>d) All of the above</p> <p>3.) Define myofibrils.</p> <p>4.) Give the classification or types of muscle tissue?</p>	
30	<p>Anaphase – At the onset of anaphase, each chromosome arranged at the</p> <p>Telophase –At the beginning of the final stage of karyokinesis, i.e.,</p>	4

OR

Meiosis 1 – Prophase 1 – Metaphase 1 – Anaphase 1 – Telophase 1
Meiosis 1 – Prophase 2 – Metaphase 2 – Anaphase 2 – Telophase 2

Statement 1 – Gametes are formed from diploid cells.

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Statement 3 – Meiosis occurs during gametogenesis in plants and

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Statement 4 – Meiosis involves three sequential cycles i.e. prophase,

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SECTION-E

31

Explain with a well labelled diagram the structure of a Monocot Seed.

5

OR

Section - B		