



Indian School Al Wadi Al Kabir

Assessment 1

Biology (Code: 044)

Class : XI

SET II

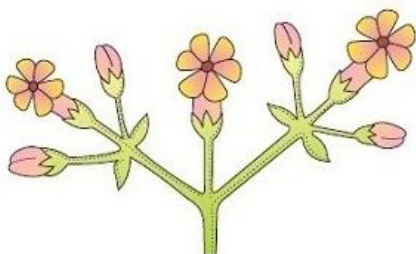
Time: 3 Hours

Date : 22/09/2022

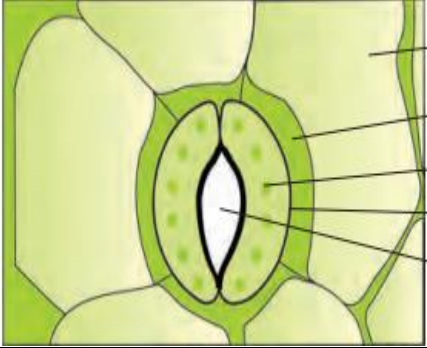
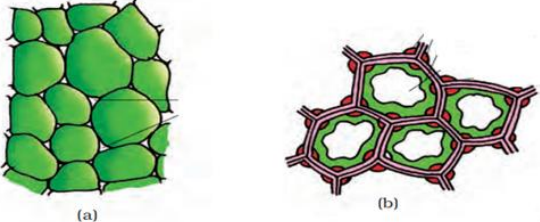
Max. Marks : 70

General Instructions:

- i) All questions are compulsory.
- ii) The question paper has five sections and 29 questions.
- iii) Section–A has 10 multiple choice questions of 1 mark each; Section–B has 7 short answer type I questions of 2 marks each; Section–C has 7 short answer type II questions of 3 marks each, section D has 2 case study-based questions and Section E has 3 long answer type questions of 5 marks.
- 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		MARKS
Sl. No.		
1	In pteridophytes, the spore bearing leaf like appendages are called (a) Sporophyll (b) Sporophyte (c) Sporangium (d) Stipe	1
2	Identify the type of inflorescence represented by the below diagram  (a) Racemose (b) Cymose (c) Special (d) Acropetal	1

3	The nitrogen fixing cells present in cyanobacteria are (a) Heterocyst (b) Nucleolus (c) Cnidoblast (d) Gemmules	1
4	Which of the following groups of organisms have a protein rich layer called pellicle? (a) Chrysophytes (b) Dinoflagellates (c) Euglenoids (d) Slime moulds	1
5	Identify a simple permanent tissue with thin cell wall from the following (a) Parenchyma (b) Collenchyma (c) Fibre (d) Sclereid	1
6	The outermost layer of dicot root is known as (a) Epidermis (b) Hypodermis (c) Epiblema (d) Cuticle	1
7	As per Whittaker's classification, an organism possessing eukaryotic cell structure, multicellular organisation, with a cell wall and nuclear membrane showing heterotrophic nutrition can be placed under the kingdom (a) Plantae (b) Protista (c) Fungi (d) Animalia	1
8	Epiphyllous condition means----- (a) Petals attached to perianth (b) Stamens attached to perianth (c) Petals attached to Calyx (d) Stamens attached to petals	1
9	Assertion: The sum total of all the chemical reactions occurring in our body is metabolism Reason: No non-living object exhibits metabolism (a) Both assertion and reason are true, and reason is the correct explanation of assertion. (b) Both assertion and reason are true, but reason is not the correct explanation of assertion. (c) Assertion is true but reason is false. (d) Both assertion and reason are false	1
10	Assertion: Chlorophyceae are known as green algae Reason: The main pigments in Chlorophyceae are chlorophyll a and d	1

	<p>(a) Both assertion and reason are true, and reason is the correct explanation of assertion.</p> <p>(b) Both assertion and reason are true, but reason is not the correct explanation of assertion.</p> <p>(c) Assertion is true but reason is false.</p> <p>(d) Both assertion and reason are false</p>	
SECTION B		
11	<p>Differentiate between:</p> <p>(a) Actinomorphic flower and Zygomorphic flower</p> <p>(b) Apocarpous ovary and Syncarpous ovary</p>	2
12	<p>Identify the plant or organism</p> <p>(i) The smallest living organism and can survive without oxygen</p> <p>(ii) The organisms that cause red tide</p> <p>(iii) The parasite that causes sleeping sickness</p> <p>(iv) Mushrooms, bracket fungi or puffballs are placed under the class</p>	2
13	<p>Give any two functions of below given structure.</p> 	2
14	What are pneumatophores? Give the function	2
15	<p>What are the different criteria for scientific naming or nomenclature process?</p> <p style="text-align: center;">OR</p> <p>Taking 'mango' as example explain the process of Binomial Nomenclature</p>	2
16	<p>Define the following terms</p> <p>(a) Species</p> <p>(b) Taxonomic hierarchy</p> <p>(c) Taxon</p> <p>(d) Genus</p>	2
17	<p>Give reason</p> <p>(a) Bryophytes are known as amphibians of plant kingdom</p> <p>(b) Deuteromycetes are known as imperfect fungi</p>	2
SECTION C		
18	<p>Observe the given figures carefully</p> 	3

	(a) Identify the simple permanent tissues marked as (a) and (b) (b) Give any two differences between them																	
19	Draw a neat diagram of vexillary aestivation. Explain the type of petals present and give an example.	3																
20	(a) Distinguish between protonema and prothallus (b) Name the two stages in the gametophyte of bryophytes OR (a) Heterospory is known as the precursor of seed habit. Justify. (b) Name the male and female reproductive organs in pteridophytes	3																
21	With the help of diagrams distinguish between conjoint open and conjoint closed vascular bundles	3																
22	Define the following terms (a) Placentation (b) Phyllotaxy (c) Aestivation	3																
23	Fill the blanks	3																
	<table border="1"> <thead> <tr> <th>Class</th> <th>Common name</th> <th>Pigments</th> <th>Stored food</th> </tr> </thead> <tbody> <tr> <td>Chlorophyceae</td> <td>(A)</td> <td>Chl. a and b</td> <td>(B)</td> </tr> <tr> <td>(C)</td> <td>Brown algae</td> <td>(D)</td> <td>Mannitol</td> </tr> <tr> <td>Rhodophyceae</td> <td>Red algae</td> <td>(E)</td> <td>(F)</td> </tr> </tbody> </table>	Class	Common name	Pigments	Stored food	Chlorophyceae	(A)	Chl. a and b	(B)	(C)	Brown algae	(D)	Mannitol	Rhodophyceae	Red algae	(E)	(F)	
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(C)	Brown algae	(D)	Mannitol															
Rhodophyceae	Red algae	(E)	(F)															
24	Diagrammatically represent the structure of a dicot stem and label any four parts OR Tabulate the differences between dicot stem and monocot stem	3																
SECTION D (Case study based)																		
25	<p><i>Read the following and answer questions from 25(i) to 25(v) given below:</i></p> <p>Viruses and Viroids</p> <p>Viruses are non-cellular organisms which take over the machinery of host cell on entering it and become living but as such they have inert crystalline structure appear non-living. So, difficult to call them living or non-living. Virus means venom or poisonous fluid. Pasteur gave the term 'virus'</p> <p>D.J. Ivanowsky found out that certain microbes caused Tobacco Mosaic Disease in tobacco plant. M.W. Beijerinck called fluid as 'Contagium vivum fluidum' as extracts of infected plants of tobacco could cause infection in healthy plants. W.M. Stanley showed viruses could be crystallized to form crystals of protein which are inert outside their specific host. It is a nucleoprotein made up of protein coat called Capsid. Capsid is made up of capsomeres arranged in helical or polyhedral-geometric forms. They have either DNA or RNA as genetic material which may be single or double stranded. Usually plant viruses have single stranded RNA; bacteriophages have double stranded DNA and animal viruses have single or double stranded RNA or double stranded DNA.</p> <p>Viroids are infectious agents with free RNA (lack protein coat). RNA has low molecular weight. Causes potato spindle tuber disease. They were discovered by T.O. Diener.</p>	5																
25 (i)	Identify the chemical nature of capsid of TMV (a) Protein (b) DNA																	

	(c) RNA (d) Both (a) and (c)	
25 (ii)	Viroids consist of----- (a) RNA and protein (b) Free RNA (c) Free DNA (d) DNA and protein	
25 (iii)	The viral particles that enter into bacteria and infect it are known as (a) Bacteriophage (b) TMV (c) Capsomeres (d) Prions	
25 (iv)	When a virus infects a plant, it injects -----into the plants cell (a) Protein (b) DNA (c) Protein and DNA (d) RNA	
25 (v)	Assertion: Viruses are known as connecting link between living and non-living organisms Reason: Viruses are crystalline in nature, obligatory parasites and need hosts for their survival (a) Both assertion and reason are true, and reason is the correct explanation of assertion. (b) Both assertion and reason are true, but reason is not the correct explanation of assertion. (c) Assertion is true but reason is false. (d) Both assertion and reason are false	
26	Read the following paragraph and answer the questions The gymnosperms (gymnos: naked, sperma: seeds) are plants in which the ovules are not enclosed by any ovary wall and remain exposed, both before and after fertilisation. The seeds that develop post-fertilisation, are not covered, i.e., are naked. Gymnosperms include medium-sized trees or tall trees and shrubs. One of the gymnosperms, the giant redwood tree Sequoia is one of the tallest tree species. The roots are generally tap roots. Roots in some genera have fungal association in the form of mycorrhiza (Pinus), while in some others (Cycas) small specialised roots called coralloid roots are associated with N ₂ - fixing cyanobacteria. The stems are unbranched (Cycas) or branched (Pinus, Cedrus). The leaves may be simple or compound. In Cycas the pinnate leaves persist for a few years. The leaves in gymnosperms are well-adapted to withstand extremes of temperature, humidity and wind. In conifers, the needle-like leaves reduce the surface area. Their thick cuticle and sunken stomata also help to reduce water loss.	5
26 (i)	Identify the statement which is not applicable for gymnosperms (a) They are naked fruit bearing plants (b) Sporophyte is the dominant phase (c) The plants may be branched or unbranched (d) None of these	
26 (ii)	Symbiotic association of fungi and roots of higher plants is known as (a) Coralloid root (b) Mycorrhiza (c) Both (a) and (b)	

	(d) Pinus	
26 (iii)	<p>Coralloid roots in Cycas are associated with</p> <p>(a) Algae (b) Fungi (c) Cyanobacteria (d) Rhizobium</p>	
26 (iv)	<p>Which of the following is/are adaptation/s seen in gymnosperms?</p> <p>(a) Needle – like leaves (b) Thick cuticle (c) Sunken stomata (d) All of these</p>	
26 (v)	<p>Assertion: In pine tree the leaves are needle - like Reason: They are present in extreme conditions</p> <p>(a) Both assertion and reason are true, and reason is the correct explanation of assertion. (b) Both assertion and reason are true, but reason is not the correct explanation of assertion. (c) Assertion is true but reason is false. (d) Both assertion and reason are false</p>	
SECTION E		
27	<p>(a) Give a single word for the following description</p> <p>(i) Lateral outgrowth seen at the base of the leaf (ii) Narrow, slender supporting roots formed from the base of the stem (iii) Both androecium and gynoecium present in the same flower (iv) The swollen tissue to which the ovules are attached</p> <p>(b) Distinguish between the following</p> <p>(i) Hypogynous and epigynous (ii) Leaf tendril and stem tendril (iii) Coleoptile and coleorhiza</p> <p style="text-align: center;">OR</p> <p>With the help of a neat labelled diagram explain the different regions of a tap root</p>	5
28	<p>Explain the process of secondary thickening in dicot stem</p> <p style="text-align: center;">OR</p> <p>(i) Write notes on the following</p> <p>(a) Periderm (b) Bulliform cells (c) Lenticels (d) Endarch xylem (e) Casparian strips (f) Conjunctive tissue</p> <p>(ii) Distinguish between</p> <p>(1) Heart Wood and Sap Wood (2) Spring wood and autumn wood</p>	5
29	<p>Identify the kingdom to which archaebacteria belongs. Write their special feature. Write notes on any three types of archaebacteria</p> <p style="text-align: center;">OR</p> <p>What are protozoans? Give a brief description about the different categories of protozoans.</p>	5