FIRST YEAR HIGHER SECONDARY SECOND TERMINAL EXAMINATION–
DECEMBER - 2022
FY – 1026
PART – III
BIOLOGY (BOTANY & ZOOLOGY)
SCORING KEY (UNOFFICIAL)

PART -A
BOTANY

Qn. No.	Scoring indicators	Marks
	PART - I	
	Answer any 3 questions from 1 – 5. Each carry 1 score	
1.	Nostoc	1
2.	(a) / Gemmae	1
3.	(c) / Mesophyll	1
4.	polyribosomes or polysome	1
5.	Large, empty, colourless cells on the upper epidermis of monocot leaf.	1
	PART - II	
	Answer any 9 questions from 6 – 16. Each carry 2 scores	
6.	(a) – Infectious folded proteins that cause neurological diseases are called prions. (b) – Bovine spongiform encephalopathy (BSE) / Mad cow disease in cattle / Cr–Jacob disease / (CJD). (Any one disease)	1 + 1 =2
7.	(a) Production of two kinds of spores is known as heterospory. / Production of macrospores and microspores is called heterospory. (b) *Selaginella and Salvinia*	1 + 1 =2
8.	(a) Used in polishing. Used in filtration of oils and syrups. (b) Chrysophytes	1 + 1 =2
9.	**A** / **B** a. Red algae – ii. Floridian starch b. Bryophyte – iv. Protonema c. Pteridophytes – i. Prothallus d. Gymnosperms – iii. Mycorrhiza	½ x 4 = 2

<table>
<tr><th>Qn. No.</th><th>Scoring indicators</th><th>Marks</th></tr>
<tr><td>10.</td><td>(a) Drupe
(b) Fruit formed without fertilisation of the ovary (Unfertilized ovary) is called parthenocarpic fruit.</td><td>1 + 1 =2</td></tr>
<tr><td>11.</td><td>(a) Mitochondria produce cellular energy in the form of ATP, hence they are called ‘power houses’ of the cell
(b) Crista</td><td>1 + 1 = 2</td></tr>
<tr><td>12.</td><td><table><tr><th>Bryophytes</th><th>Gymnosperms</th></tr><tr><td>• Lack of true roots, stem or leaves.
• Depend on water for sexual reproduction.</td><td>• Naked seeded plants.
• Sporophyll form compact strobili or cones</td></tr></table></td><td>1 + 1 = 2</td></tr>
<tr><td>13.</td><td>(a) A - Region of maturation B - Region of elongation
C - Region of meristematic activity.
(b) Protects the tender apex of the root / Protection.</td><td>½ x 4 = 2</td></tr>
<tr><td>14.</td><td><table><tr><th>Dicot Leaf</th><th>Monocot Leaf</th></tr><tr><td>(i) Stomata on lower epidermis only.
(ii) Mesophyll tissue is differentiated into upper palisade and lower spongy parenchyma.
(iii) Guard cell kidney / bean shaped</td><td>(i) Stomata present on both upper & lower epidermis.
(ii) Mesophyll tissue is not differentiated into palisade and spongy parenchyma.
(iii) Guard cell dumb bell shaped</td></tr></table></td><td>½ x 4 =2</td></tr>
<tr><td>15.</td><td>(a) Solanaceae.
(b) Actinomorphic / bisexual / hypogynous / 5 sepals / gamosepalous / 5 petals / gamopetalous / 5 stamens / free stamens / epipetalous stamens / bicarpellary / syncarpous / superior ovary.
(Any two floral character)</td><td>½ x 4 =2</td></tr>
<tr><td>16.</td><td><table><tr><th>Rough Endoplasmic Reticulum</th><th>Smooth Endoplasmic Reticulum</th></tr><tr><td>(i) Endoplasmic reticulum with ribosomes on the surface.
(ii) Actively involved in protein synthesis.</td><td>(i) Endoplasmic reticulum without ribosomes on the surface.
(ii) Actively involved in lipid and steroid hormone synthesis.</td></tr></table></td><td>1 + 1 = 2</td></tr>
<tr><td colspan="3">PART – III</td></tr>
<tr><td colspan="3">Answer any 3 questions from 17 – 20. Each carry 3 scores</td></tr>
<tr><td>17.</td><td>(a) The arrangement of flowers on the floral axis is called inflorescence.
(b)<table><tr><th>Racemose</th><th>Cymose</th></tr><tr><td>The main axis continues to grow. Flowers develop in acropetal succession.</td><td>The main axis terminates in a flower. Flowers develop in basipetal succession.</td></tr></table></td><td>1 + 1 =2</td></tr>
</table>

Qn. No.	Scoring indicators	Marks
18.	A – Radial Vascular Bundle B – Conjoint Open Vascular Bundles **Radial Vascular Bundle -** Xylem and phloem within a vascular bundle are arranged in an alternate manner on different radii. Xylem is exarch. Radial vascular bundle is present in roots. **Conjoint Open Vascular Bundles -** Xylem and phloem are situated at the same radius of vascular bundles. Cambium is present between phloem and xylem. Xylem is endarch. Conjoint Open Vascular Bundles are present in dicot stem.	1+2= 3
19.	(a) Metacentric, sub-metacentric, acrocentric & telocentric. (b) Non-staining secondary constrictions in some chromosome gives the appearance of a small fragment at the end of chromosome called the satellite.	2 +1= 3
20.	(a) The mode of arrangement of sepals or petals in a flower is called aestivation. (b) A – Valvate B – Twisted C – Imbricate D – Vexillary or Papilionaceous.	1+2 =3

<table>
<tr><td></td><td colspan="2">PART -B
ZOOLOGY</td></tr>
<tr><td>Qn. No.</td><td>Scoring indicators</td><td>Marks</td></tr>
<tr><td colspan="3">PART - I</td></tr>
<tr><td colspan="3">Answer any 3 questions from 1 – 6. Each carry 1 score</td></tr>
<tr><td>1.</td><td>D) / Musca domestica</td><td>1</td></tr>
<tr><td>2.</td><td>C) / Species→ Genus →Family →Order → Class → Phylum → Kingdom</td><td>1</td></tr>
<tr><td>3.</td><td>Physalia</td><td>1</td></tr>
<tr><td>4.</td><td>Glycine / Amino acid</td><td>1</td></tr>
<tr><td>5.</td><td>Tracheal system
Cuticle</td><td>1</td></tr>
<tr><td colspan="3">PART - II</td></tr>
<tr><td colspan="3">Answer any 9 questions from 6 – 16. Each carry 2 scores</td></tr>
<tr><td>6.</td><td>A) ICZN - International Code of Zoological Nomenclature
B) ICBN - International Code for Botanical Nomenclature</td><td>1 + 1 =2</td></tr>
<tr><td>7.</td><td><table><tr><td>Radula</td><td>Mollusca</td></tr><tr><td>Comb plates</td><td>Ctenophora</td></tr><tr><td>Flame cells</td><td>Platyhelminthes</td></tr><tr><td>Proboscis gland</td><td>Hemichordata</td></tr></table></td><td>½ x 4 =2</td></tr>
<tr><td>8.</td><td>a) A – Chondrichthyes B – Osteichthyes
b)<table><tr><th>Chondrichthyes</th><th>Osteichthyes</th></tr><tr><td>They are marine animals.
Mouth is ventral in position.
They have cartilaginous endoskeleton
Gill slits are separate and without operculum.
Air bladder is absent.
Skin is covered by placoid scales.</td><td>It include both marine and fresh water animals
Mouth is mostly terminal in position.
They have bony endoskeleton
They have four pairs of gills covered by operculum.
Air bladder is present
Skin is covered by cycloid/ctenoid scales</td></tr></table>(Any two characters)</td><td>½ x 4 =2</td></tr>
</table>

<table>
<tr><td>9.</td><td>(a)<table><tr><th>Poikilothermous</th><th>Homoiothermous</th></tr><tr><td>Hippocampus
Trygon</td><td>Equus
Penguin</td></tr></table>b) Poikilothermous - They are cold-blooded animals/ They lack the capacity to regulate their body temperature.
Homoiothermous - They are warm-blooded animals / They are able to maintain a constant body temperature.</td><td>½ x 4 =2</td></tr>
<tr><td>10.</td><td>Jointed appendaged animals / Body is covered by chitinous exoskeleton / Animals show bilateral symmetry / Animals are triploblastic and coelomate / Animals show open type of circulation.
(Any two relevant characters)</td><td>1 + 1 =2</td></tr>
<tr><td>11.</td><td>A) Cnidoblasts or Cnidocytes
B) Coelenterata / Cnidaria
C) They are used for anchorage, defense and for the capture of prey.</td><td>1 + 1 =2</td></tr>
<tr><td>12.</td><td>a) A - phosphoric acid or phosphate.
B – Sugar / Pentose sugar / Ribose / Deoxyribose
b) Yes
In DNA sugar molecule is deoxyribose where as in RNA it is ribose</td><td>½ x 4 =2</td></tr>
<tr><td>13.</td><td>A – Oxidoreductases/dehydrogenases
B – Transferases
C – Lyases
D – Ligases</td><td>½ x 4 =2</td></tr>
<tr><td>14.</td><td>A) Glycosidic bond
B) Peptide bond.</td><td>1 + 1 =2</td></tr>
<tr><td>15.</td><td>A) – Adipose tissue
B) – Tendons
C) – Blood
D) – Ligaments
DELETED CHAPTER / PORTION AS PER SCERT</td><td>½ x 4 =2</td></tr>
<tr><td>16.</td><td>a – Jejunum b – Ileum
c – Colon d – Rectum
DELETED CHAPTER AS PER SCERT</td><td>½ x 4 =2</td></tr>
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<tr><td colspan="3">Answer any 3 questions from 17 – 20. Each carry 3 scores</td></tr>
<tr><td>17.</td><td>A) X – Gill slits
Y – Post anal tail
B)
<table><tr><th>Chordates</th><th>Non-chordates</th></tr><tr><td>1. Notochord present
2. Pharynx perforated by gill slits.
3. Heart is ventral.
4. A post-anal part (tail) is present.</td><td>1. Notochord absent
2. Gill slits are absent.
3. Heart is dorsal (if present).
4. post-anal tail is absent.</td></tr></table></td><td>1+2 =3</td></tr>
<tr><td>18.</td><td>a) B - Pseudocoelomate
C - Acoelomate
b) Coelomate - Animals possessing true coelom are called coelomates.
Pseudocoelomate - If the body cavity is not lined by mesoderm, it is called pseudocoelomate / the mesoderm is present as scattered pouches in between the ectoderm and endoderm.</td><td>1+2 =3</td></tr>
<tr><td>19.</td><td>A) S - Substrate P - Product
B) Temperature, pH, Concentration of Substrate (Any two)
C) The enzyme releases the products of the reaction and the free enzyme is ready to bind to another substrate molecule.</td><td>1+1+1 =3</td></tr>
<tr><td>20.</td><td><table><tr><th>A
PROTEINS</th><th>B
FUNCTIONS</th></tr><tr><td>Collagen</td><td>Intercellular ground substances</td></tr><tr><td>Trypsin</td><td>Enzymes</td></tr><tr><td>Insulin</td><td>Hormone</td></tr><tr><td>Antibody</td><td>Fights infectious agents</td></tr><tr><td>Receptor</td><td>Sensory reception</td></tr><tr><td>GLUT - 4</td><td>Enable glucose transport into cells</td></tr></table></td><td>½ x 6 =3</td></tr>
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