FIRST YEAR HIGHER SECONDARY TERMINAL EXAMINATION

DECEMBER - 2023

FY - 26

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.	Scutellum	1
2.	a) / Ribosome	1
3.	c) / Interkinesis	1
4.	ii Specialised cell present in the vicinity of guard cell is called subsidiary cells.	½ + ½ =1
5.	b) / Halophiles – Salty area.	1
	PART – II	
	Answer any 9 questions from 6 – 16. Each carry 2 scores	
6.	Two kinds of spores produced in pteridophytes is called Heterospory. / Large macrospores and small micro spores. Heterospory is a precursor to the seed habit	1 + 1 =2
7.	iv) Region of maturation i) Region of elongation iii) Region of meristematic activity ii) Root cap (OR in reverse order)	½ x 4 =2

<table>
<tr><th>Qn. No.</th><th>Scoring indicators</th><th>Marks</th></tr>
<tr><td>8.</td><td>
<table>
<tr><th>RER (Rough Endoplasmic Reticulum)</th><th>SER (Smooth Endoplasmic Reticulum)</th></tr>
<tr><td>1. Endoplasmic reticulum bearing ribosomes on their surface is called RER.
2. RER is actively involved in protein synthesis and secretion.</td><td>1. Endoplasmic reticulum devoid / lacking ribosomes on their surface is called SER.
2. SER is actively involved in synthesis of lipids / hormones.</td></tr>
</table>
</td><td>1 + 1 = 2</td></tr>
<tr><td>9.</td><td>A – Stroma lamella B – Grana
C – Stroma D – Ribosomes</td><td>1 + 1 = 2</td></tr>
<tr><td>10.</td><td>
<table>
<tr><th>Dicot Root</th><th>Monocot Root</th></tr>
<tr><td>• Limited number of vascular bundles.
• Pith is small.
• Xylem elements polygonal.
• Air cavities absent.
• Secondary growth present.</td><td>• Numerous vascular bundles.
• Pith is large.
• Xylem elements circular.
• Air cavities present.
• Secondary growth absent .</td></tr>
</table>
(Any two differences)
</td><td>1 + 1 = 2</td></tr>
<tr><td>11.</td><td>a – Chromosomes become gradually visible / Compaction of chromosomes.
b – Pairing of Chromosomes / synapsis / formation of synaptonemal complex / Bivalent or Tetrad chromosomes
c – Dissolution of the synaptonemal complex / Chiasmata formation occur.
d – Terminalisation of chiasmata occur.</td><td>½ x 4 = 2</td></tr>
<tr><td>12.</td><td>According to the law if a chemical process is affected by more than one factor, then its rate will be determined by the factor which is nearest to its minimal value.

External Factors - Availability of sunlight / Temperature / CO_2 concentration / Water

(Any two factors)</td><td>1 + 1 = 2</td></tr>
<tr><td>13.</td><td>Bryophytes.
They live in soil but are dependent on water for sexual reproduction.</td><td>1 + 1 = 2</td></tr>
<tr><td>14.</td><td>a) – A- Anaphase.
b) – Centromeres split and chromatids separate.
Chromatids move to opposite poles.</td><td>1 + 1 = 2</td></tr>
<tr><td>15.</td><td>They are fresh water organisms / they have a protein rich cell wall layer called pellicle / They have two flagella / They are photosynthetic in sunlight, heterotrophs in the absence of sunlight.
(Any two features)</td><td>1 + 1 = 2</td></tr>
</table>

<table>
<tr><th>Qn. No.</th><th>Scoring indicators</th><th>Marks</th></tr>
<tr><td>16.</td><td>A – Radial
B – Conjoint Open / Conjoint
<table>
<tr><th>Radial</th><th>Conjoint Open</th></tr>
<tr><td>• Xylem & phloem in alternate manner / in different radii.
• Cambium absent.</td><td>• Xylem & phloem are situated on the same radius.
• Cambium present.</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) – Chrysophytes.
b) – The accumulation of cell wall deposits of diatoms over billions of years in sea-floor.
c) – Diatomaceous earth is used in polishing, filtration of oils and syrups.</td><td>1 + 1 + 1 =3</td></tr>
<tr><td>18.</td><td>a) – Schleiden & Schwann.
b) – Cells divide and new cells are formed from pre-existing cells.
c) – All living organisms are composed of cells and products of cells.
All cells arise from pre-existing cells.</td><td>1+1+1= 3</td></tr>
<tr><td>19.</td><td>a) – Solanaceae.
b) – Calyx: sepals five, united, persistent, valvate aestivation
Corolla: petals five, united; valvate aestivation
Androecium: stamens five, epipetalous
Gynoecium: bicarpellary obligately placed, syncarpous; ovary superior, bilocular, placenta swollen with many ovules, axile placentation.
(Any two floral terms)
c) – Source of food (tomato, brinjal, potato), Sspice (chilli)
Medicine (belladonna, ashwagandha), Fumigatory (tobacco), Ornamentals (petunia).
(Any two economic uses)</td><td>1 + 1 + 1= 3</td></tr>
<tr><td>20.</td><td>
<table>
<tr><th>CYCLIC PHOTOPHOSPHORYLATION</th><th>NON-CYCLIC PHOTOPHOSPHORYLATION</th></tr>
<tr><td>1. Electrons are transported in cyclic manner.
2. Only PS - I is involved.
3. Only ATP is produced.
4. Photolysis of water is absent.
5. Oxygen is not liberated.
6. External electron donor is absent</td><td>1. Electrons are transported in non-cyclic manner.
2. Both PS - I & PS - II are involved.
3. Both ATP & NADPH+H$^+$ are produced.
4. Photolysis of water is present.
5. Oxygen is liberated.
6. External electron donor (water) is present.</td></tr>
</table>
(Any Three differences)</td><td>1 +1 + 1 = 3</td></tr>
</table>

	PART -B ZOOLOGY	
Qn. No.	Scoring indicators	Marks
	PART - I	
	Answer any 3 questions from 1 – 6. Each carry 1 score	
1.	Carbamino-haemoglobin.	1
2.	Tapeworm.	1
3.	Emphysema	1
4.	Echinodermata	1
5.	a) Cnidoblast / Cnidocyte b) Coelentrata / Cnidaria	½ + ½ =1
	PART – II	
	Answer any 9 questions from 6 – 16. Each carry 2 scores	
6.	A – Liver. B – Stomach. C – Intestine. D – Urinary bladder.	½ x 4 =2
7.	a) A – Secondary structure. B – Tertiary structure. b) – Enables glucose transport.	1 + 1 = 2
8.	a) *Musca domestica*. b) International Code of Zoological Nomenclature.	1 + 1 = 2
9.	a) Oxygen dissociation Curve. b) Low pO_2 / High pCO_2 / High H^+ ion concentration / Higher temperature (Any two factors)	1 + 1 = 2
10.	a) – High Blood Pressure (hypertension) b) – It leads to heart diseases and also affects vital organs like brain and kidney.	1 + 1 = 2

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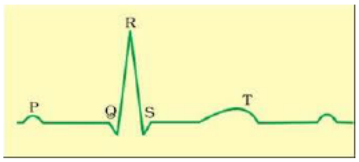
<tr><td>11.</td><td><table>
<tr><td>Arthropoda</td><td>Jointed appendages</td></tr>
<tr><td>Cnidaria</td><td>Cnidoblasts</td></tr>
<tr><td>Mollusca</td><td>Calcareous shell</td></tr>
<tr><td>Ctenophora</td><td>Comb plates</td></tr>
</table></td><td>½ x 4 =2</td></tr>
<tr><td>12.</td><td>a) Nictitating membrane.
b) Rana tigrina</td><td>1 + 1 = 2</td></tr>
<tr><td>13.</td><td>a) – Tidal volume / TV
b) – Residual volume / RV</td><td>1 + 1 = 2</td></tr>
<tr><td>14.</td><td>In vertebrata, notochord is present in the embryonic stage. It is replaced by bony vertebral column in adult stage. / In protochordates only notochord is present, vertebrata is absent.</td><td>2</td></tr>
<tr><td>15.</td><td>a) – Heart beat originates from SAN node / SAN can generate the action potentials and is responsible for initiating and maintaining the rhythmic contractile activity of the heart.
b) – Non functioning of heart / Cardiac arrest / Heart failure.</td><td>1 + 1 = 2</td></tr>
<tr><td>16.</td><td>Species→Genus→Family→Order→Class→Phylum→Kingdom.</td><td>2</td></tr>
<tr><td></td><td>PART – III</td><td></td></tr>
<tr><td colspan="3">Answer any 3 questions from 17 – 20. Each carry 3 scores</td></tr>
<tr><th>Qn. No.</th><th>Scoring indicators</th><th>Marks</th></tr>
<tr><td>17.</td><td>a) –
 

b) – Repolarisation of ventricle /
It makes the end of systole</td><td>2 + 1 = 3</td></tr>
<tr><td>18.</td><td>a) – Apoenzyme.
b) – Catalytic activity is lost / Enzyme become inactive.
c) – Prosthetic group / Co-enzyme / Metal ion.
(Any two factors)</td><td>1+1+1 =3</td></tr>
</table>

<table>
<tr>
<td>19.</td>
<td>A – Vertebrata
B – Agnatha
C – Pisces / Fishes
D – Chondrichthyes
E – Amphibia
F – Mammals</td>
<td>½ x 6 =3</td>
</tr>
<tr>
<td>20.</td>
<td>a) A – Chondrichthyes
B – Osteichthyes

b)
<table>
<tr><th>Chondrichthyes</th><th>Osteichthyes</th></tr>
<tr><td>All are marine fishes</td><td>It includes both marine and fresh water fishes</td></tr>
<tr><td>They have cartilaginous endoskeleton</td><td>They have bony endoskeleton</td></tr>
<tr><td>Mouth is ventral</td><td>Mouth is terminal</td></tr>
<tr><td>Gill slits separate without operculum</td><td>Four pair of gills covered by operculum</td></tr>
<tr><td>Skin contains placoid scales</td><td>Skin is covered with cycloid/ctenoid scales</td></tr>
<tr><td>Air bladder absent</td><td>Air bladder present</td></tr>
</table>
(Any two differences)</td>
<td>1 + 2 = 3</td>
</tr>
</table>