FIRST YEAR HIGHER SECONDARY MODEL EXAMINATION– FEBRUARY - 2025

FY - 526

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.	Capsid.	1
2.	Apical dominance.	1
3.	c / Anaphase.	1
4.	Oogamous / Oogamy.	1
5.	Tegmen	
	PART – II	
	Answer any 9 questions from 6 – 16. Each carry 2 scores	
6.	Plant part takes care of its own gas exchange needs. Gas exchange demands for plants is less. Stomata and lenticel help in gas exchange. Loose packaging of parenchyma in plant body provides an interconnected network of air spaces. (Any two points)	1 + 1 = 2
7.	Conjoint / Open / ring arrangement of vascular bundles / Endarch xylem / Cambium Present. (Any two points)	1 + 1 = 2
8.	A – B a) Anabaena – ii) Heterocyst b) Gonyaulax – iv) Red tide c) Euglena – i) Pellicle d) Slime moulds – iii) Plasmodium	½ x 4 = 2
9.	a) George Palade b) RNA and Proteins.	1 + 1 = 2

<table>
<tr><th>Qn. No.</th><th>Scoring indicators</th><th>Marks</th></tr>
<tr><td>10.</td><td>The cells are rich in protoplasm.
Cells have conspicuous nuclei.
Cells are primary in nature.
Cell wall is cellulosic with abundant plasmodesmata.
(Any two points)</td><td>1 + 1 = 2</td></tr>
<tr><td>11.</td><td>Chlorophyll a - Blue green.
Chlorophyll b - Yellow green.
Xanthophyll - Yellow.
Carotenoids - Yellow / Yellow orange.</td><td>½ x 4 = 2</td></tr>
<tr><td>12.</td><td>They live in cool, damp, shady places to grow.
Need water for fertilization. So pteridophytes are restricted to narrow geographical area.</td><td>1 + 1 = 2</td></tr>
<tr><td>13.</td><td><table><tr><th>Dorsi-ventral Leaf</th><th>Iso-bilateral leaves</th></tr><tr><td>• Mesophyll is differentiated into Palisade and spongy layers.
• Stomata are distributed more at the abaxial epidermis.</td><td>• Mesophyll is not differentiated.
• Stomata are equally distributed on both surfaces.</td></tr></table></td><td>½ x 4 = 2</td></tr>
<tr><td>14.</td><td>a) A – Matrix B – Crista

b) They produce cellular energy in the form of ATP / They are called power houses of the cell / Respiration.</td><td>1 + 1 = 2</td></tr>
<tr><td>15.</td><td>i) Splitting of water or photolysis of water increases the proton gradient.
ii) During electron transport through ETS protons are released from stroma side to thylakoid lumen.
iii) During the production of $NADPH+H^+$ protons are accepted from stroma this indirectly increases the proton gradient inside thylakoid.
(Any two reasons)</td><td>1 + 1 = 2</td></tr>
<tr><td>16.</td><td>a) Ethylene action increases the respiration rate during fruit ripening. This rise in rate of respiration is called respiratory climactic.

b) Ethylene.</td><td>1 + 1 = 2</td></tr>
</table>

PART – III

Answer any 3 questions from 17 – 20. Each carry 3 scores

17.

a) Respiration is the breakdown of food molecules so it is a catabolic reaction. However, the different substrates involved in respiratory pathway are also involved in anabolic pathway. So, the respiratory pathway is called as an amphibolic pathway.

b) A – Fats
B – Carbohydrates
C – Proteins
D – pyruvic acid

1 + 2 = 3

18.

a) Valvate aestivation / Valvate

b) Epipetalous

c) Bicarpellary bilocular / Syncarpous / Ovary superior / Axile placentation.

1 +1 +1 = 3

19.

a) i) – Zygotene.
ii) – Diakinesis.

b) Recombinase.

c) Crossing over helps in exchange of genetic material / It leads to recombination of genetic material.

1 +1 +1 = 3

20.

Cyclic Photophosphorylation	Non - Cyclic Photophosphorylation
• Electrons are transported in cyclic manner. • Only PS - I is involved. • Only ATP is produced. • Photolysis of water is absent. • Oxygen is not liberated. • External electron donor is absent	• Electrons are transported in non-cyclic manner. • Both PS - I & PS - II are involved. • Both ATP & NADPH+H^+ are produced. • Photolysis of water is present. • Oxygen is liberated. • External electron donor (water) is present.

(Any three differences)

1 +1 +1 = 3

	PART -B ZOOLOGY	
Qn. No.	**Scoring indicators**	**Marks**
	PART - I	
	Answer any 3 questions from 1 – 6. Each carry 1 score	
1.	a) Myoglobin b) Arthritis	½ + ½ = 1
2.	Apoenzyme.	1
3.	Thymus	1
4.	Musca domestica	1
5.	Carbonic anhydrase	1
	PART – II	
	Answer any 9 questions from 6 – 16. Each carry 2 scores	
6.	a) – P – wave represents the electrical excitation of atria / represents depolarization of atria / Represent auricular contraction. T – wave represents the return of the ventricles from excited state normal state / Represents the repolarization of ventricles / Represents ventricular relaxation b) – Any deviation in ECG indicates the abnormality of heart. So, it is clinically important.	1 + 1 = 2
7.	a) – Insulin. b) – Gigantism.	1 + 1 =2
8.	a) Cnidoblast / Cnidocyte b) Anchorage / Defence / Capture of prey. (Any two functions)	1 + 1 = 2
9.	(a) A – Prosthetic groups / Co-enzymes / Metal ions. (Any two) (b) Enzyme activity or Catalytic activity is lost / Enzyme become inactive or non-functional.	1 + 1 = 2
10.	**Column A** / **Column B** Platyhelminthes – Flame cells Annelida – Nephridia Arthropoda – Malpighian tubules Mollusca – Gills	½ x 4 = 2

Qn. No.	Scoring indicators	Marks
11.	a) Female reproductive System of Frog. b) A – Oviduct B – Ovary	1 + 1 = 2
12.	(a) – Oxidoreductases / Dehydrogenases (b) – Transferases (c) – Isomerases (d) – Ligases	½ x 4 = 2
13.	a) – Uremia b) – Renal calculi c) – Glomerulonephritis d) – Hemodialysis	½ x 4 = 2
14.	a) A – SA node / SAN B – AV node / AVN C – Bundle of His b) SA node / SAN	½ x 4 = 2
15.	a) – Ctenophora. b) – Arthropoda. c) – Echinodermata. d) – Mollusca.	½ x 4 = 2
16.	a) Sliding filament theory b) Actin and Myosin	1 + 1 = 2
	PART – III	

Answer any 3 questions from 17 – 20. Each carry 3 scores

Qn. No.	Scoring indicators	Marks
M	a) – Electrical synapse and Chemical synapse b)	1+2 = 3

Electrical synapses	Chemical synapses
➢ Membranes of pre-synaptic and post-synaptic neuron are very close. ➢ Electrical current flow from one neuron to another for impulse transmission. ➢ Impulse transmission is faster.	➢ Membranes of pre-synaptic and post-synaptic neuron are separated by fluid filled synaptic cleft. ➢ Chemicals called neurotransmitter are involved in impulse transmission. ➢ Impulse transmission is slower.

(Any two points)

<table>
<tr><th>Qn. No.</th><th>Scoring indicators</th><th>Marks</th></tr>
<tr><td>18.</td><td>a) (A) - Medusa (B) – Polyp
b) –
<table><tr><th>MEDUSA</th><th>POLYP</th></tr><tr><td>Medusa is free-swimming
It is umbrella-shaped
Represent sexual stage</td><td>Polyp is sessile
It is cylindrical in shape
Represent asexual stage</td></tr></table>(Any two differences)</td><td>1 + 2 =3</td></tr>
<tr><td>19.</td><td>a) Oxygen dissociation curve
b) High Partial pressure of O_2 / High pO_2, low Partial pressure of CO_2 / low pCO_2, low H^+ ion concentration, low Temperature.
(c) 4.</td><td>1 + 1 + 1 =3</td></tr>
<tr><td>20.</td><td>a) A – Afferent arteriole
B – Efferent arteriole
C – Bowman’s Capsule
b) Glomerular filtration / Ultrafiltration
Tubular reabsorption
Tubular secretion
(Any one function)</td><td>1½ + 1½ = 3</td></tr>
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