FIRST YEAR HIGHER SECONDARY EXAMINATION MARCH 2018

BOTANY FINALIZED SCHEME FOR VALUATION

Question paper code. 117 **Maximum Score:30**

Q.No.		Value points	Splitted score	Total score
1		Heterocysts	1	1
2		Aleuroplasts / Proteinoplast	1	1
3		Epiphyllous / Epitepalous / stamens attached to tepals or perianth	1	1
4		OAA	1	1
Any seven from Q. No. 5-13				
5		a) Calotropis — ii) Valvate b) China Rose — iii) Twisted/ ii)Valvate c) Cassia — iv) Imbricate/ ii)valvate d) Pea — i) Vexillary/ ii)Valvate [Any two correct answers give 2 scores]	½ x 4	2
6		a) Secondary xylem (b) Metaxylem c) Exarch (d) Stem	½ x 4	2
7		Centrioles /centrosomes / Diplosome Functions - Cell division, formation of basal body of flagella or cilia, spindle apparatus during cell division. (Any one of the above functions)	1 1	2
8		Chlorosis Necrosis Brown spots surrounded by chlorotic veins. Manganese competes with iron and magnesium for uptake. Manganese competes with magnesium for binding with enzymes. Inhibits calcium translocation in shoot apex. Inhibits Ca / Mg / Fe absorption. Induce deficiencies of Iron, Magnesium and Calcium. (any two of the above responses give 2 scores)	1+1	2
9		$FADH_2$- Between the conversion of succinic acid to malic acid/ Succinic acid to fumaric acid/ At formation of malic acid/ At formation of fumaric acid in citric acid cycle.	1	2

		GTP- Between the conversion α- ketoglutaric acid to succinic acid / Between succinyl co.A to succinic acid / At formation of succinic acid in citric acid cycle. Or Correct schematic diagram showing the formation of $FADH_2$ & GTP/ Its reaction steps give full score 2	1	
10		Marchantia / Bryophyte Gemma / Gemmae Features - Gemmae are green, multicellular, asexual/ vegetative buds which develop in small receptacles. Gemmae become detached from the parent body and germinate to form new individuals. (Any one point from features 1 score)	½ ½ 1	2
11		Requires special membrane proteins. Highly selective. Transport saturates. Not requires ATP energy. Transport of molecules along the concentration gradient. Respond to inhibitors. Under hormone regulation. (Any four features of facilitated diffusion) OR Diagrammatic representation of facilitated diffusion give full scores 2	½ x 4	2
12		Plants follow different pathways in response to environment or phases of life to form different kinds of structures. Eg: Heterophylly in Cotton, Coriander and Larkspur etc. (Explanation of plasticity with any one example give 2 scores)	1 1	2
13		Cytoplasm/cytosol	1	2

<table>
<tr><td></td><td></td><td>4 ATP/ 2ATP / 8ATP</td><td>1</td><td></td></tr>
<tr><td colspan="5">Any four from Q. No. 14 -18</td></tr>
<tr><td>14</td><td>a</td><td>Palisade parenchyma and spongy parenchyma

(Chlorenchyma / Parenchyma with chloroplast give ½ score)</td><td>1</td><td>3</td></tr>
<tr><td></td><td>b</td><td><table>
<tr><th>Dicot leaf</th><th>Monocot leaf</th></tr>
<tr><td>• Mesophyll is differentiated into palisade and spongy parenchyma.
• Stomata on abaxial(lower) epidermis.
• Dorsiventral leaf.
• Stoma is guarded by dumb-bell shaped guard cells.
• Bulliform cells are absent.</td><td>• Mesophyll is not differentiated into palisade and spongy parenchyma.
• Stomata are present on both surfaces of the epidermis.
• Isobilateral leaf.
• Stoma is guarded by kidney shaped guard cells.
• Bulliform cells are present.</td></tr>
<tr><td colspan="2">Any two morphological or anatomical differences from dicot and monocot leaves give 2 scores for b.</td></tr>
</table></td><td>½x4</td><td></td></tr>
<tr><td>15</td><td></td><td><table>
<tr><th>Plant factors</th><th>External factors</th></tr>
<tr><td>Number, size, age, orientation of leaves, mesophyll cells, chloroplasts, internal CO_2 concentration, amount of chlorophyll.</td><td>Availabilty of sunlight, temperature,CO_2 concentration, water, availability of nutrients in the soil.</td></tr>
<tr><td colspan="2">(Any three factors from each category give 3 scores)</td></tr>
</table></td><td>½ x 6</td><td>3</td></tr>
<tr><td>16</td><td></td><td>Prophase I

Leptotene, Zygotene, Pachytene, Diplotene, Diakinesis</td><td>½

½ x 5</td><td>3</td></tr>
<tr><td>17</td><td>a

b

c

d

e

f</td><td>2,4-D (2,4- Dichlorophenoxy acetic acid) /Auxin

Gibberellin/Auxin

Ethylene/Auxin

Auxin

ABA /Abscisic acid

Ethylene/ Ethephon</td><td>½ x 6</td><td>3</td></tr>
</table>

		Or [Any three correct responses give 3 scores]			
18		Anaphase / karyokinesis	Centromere splits and chromosomes move to opposite poles.	½ x 6	3
		Telophase / Karyokinesis	Chromosomes cluster at opposite poles and nuclear envelope assembles around.		
		Prophase / Metaphase / karyokinesis	Chromosomes seems to be with two chromatids attached at centromere.		
		Metaphase / karyokinesis	Chromosomes arranged at spindle equator.		
		Anaphase / karyokinesis	Separation of daughter .chromosomes		
		Cytokinesis	Division of cytoplasm		

FIRST YEAR HIGHER SECONDARY EXAMINATION MARCH 2018

SUBJECT: Zoology CODE. NO: 117

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
1		Kingdom ← Phylum ← Class ← Order ← Family ← Genus ← Species (either in ascending or descending order)/any three correct sequence – carries ½ score	1	1
2.		Placoid scales	1	1
3		Retina / 'c'	1	1
4	(a)	Serine	1	2
	(b)	Alanine	1	
5.		Radial symmetry – Ctenophores, Coelenterates / Bilateral symmetry – Arthropods, Molluscs / correct headings with one example each carries full score / two correct heading only carries '1' score	½+½ ½+½	2
6	(a)	Glomerular Filtration Rate /	1	2
	(b)	Tubular reabsorption / nearly 99% of the filtrate is reabsorbed by the renal tubules / due to reabsorption of filtrate / reabsorption / tubular absorption / active or passive absorption	1	
7.		Femur, Tibia, Fibula, Tarsals	½ x 4	2

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total
8	(a)	Lysozyme	1	2
	(b)	Salivary amylase / amylase / ptyalin	1	
9		A – Crop B – Hepatic caecae C – Malpighian tubules D – Colon / Hindgut	½ ½ ½ ½	2
10	(a)	depolarisation of the ventricles / ventricular contraction / ventricular systole	1	2
	(b)	Any deviation from the normal shape indicates a possible abnormality or disease / heart disease / defective heart functioning / chance of heart attack	1	
11.	(a)	IRV – Inspiratory Reserve Volume / Additional volume of air, a person can inspire by a forcible inspiration / 2500ml–3000ml ERV – Expiratory Reserve Volume / Additional volume of air, a person can expire by a forcible expiration / 1000 ml – 1100ml	½ ½	
	(b)	IC – Inspiratory Capacity / TV + IRV / Total volume of air, a person can inspire after a normal expiration / relevant volume	½	

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total
		EC - Expiratory Capacity / TV + ERV / Total volume of air, a person can expire after a normal inspiration / relevant volume	½	2
12		(a) Peripheral Neural System / PNS	½	2
		(b) Spinal cord	½	
		(c) Autonomic Neural System / ANS	½	
		(d) Parasympathetic Neural System / Parasympathetic	½	
13	(a)	Growth hormone / GH / Somatotropin	½	2
	(b)	Insulin	½	
	(c)	Thyroxine / Tetraiodothyronine / T_4 / Triiodothyronine / T_3 / Thyroid hormones	½	
	(d)	Vasopressin / ADH / Antidiuretic Hormone	½	
14	(a)	Adipose tissue	½	2
	(b)	Ligaments	½	
	(c)	Tendon	½	
	(d)	Neural / Nervous tissue	½	
15.	(a)	Neutrophils - 60 - 65% - Phagocytic	½ + ½	3
	(b)	Eosinophils - 2 - 3% - Allergic reactions	½ + ½	
	(c)	Lymphocytes - 20 - 25% - Immune response	½ + ½	

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total
16	(a)	(a) EP / Enzyme Product Complex	½	3
		(b) Product / P	½	
	(b)	Temperature / pH / substrate concentration / inhibitor (any two correct response carries '1' score)	½ + ½	
	(c)	(i) Oxidoreductases / dehydrogenases	½	
		(ii) Lyases	½	
17.	(a)	A – Chymotrypsin	½	3
		B – Carboxy peptidase	½	
	(b)	Pancreas	1	
	(c)	A – Chymotrypsinogen	½	
		B – Procarboxypeptidases	½	
18	(a)	Pisces / Amphibia / Reptilia / Aves / Mammalia Dog fish / Frog / Alligator / Penguin / Blue whale Rohu / Salamander / Tortoise / Vulture / Flying fox	½ × 5 = 2½	3
	(b)	Class – Aves / Birds	½	