Ŧ	FIRST YEAR HIGHER SH	CONDAR	Y SECOND TERMINAL	EXAMINATION-	
		DECEN	NBER - 2022		
		F	(-1026		
		P	ART – 		
	BIO	1067 (B0	TANY & ZOOLOGY)		
	S	CORING K	EY (UNOFFICIAL)		
		P.	ART -A		
		В	OTANY		
Qn. No.		Scori	ng indicators		Marks
		PA	ART - I		
	Answer any	y 3 question	s from 1 – 5. Each carry 1 s	score	
1.	Nostoc				1
2.	(a) / Gemmae				1
3.	(c) / Mesophyll				1
4.	polyribosomes or polysome				1
5.	Large, empty, colourless cel	ls on the upr	per epidermis of monocot le	eaf.	1
	,,,	DA	RT - II		1
	Answer any	9 questions	from 6 – 16. Each carry 2 s	scores	
	,	•			
6.	(a) – Infectious folded proteins that cause neurological diseases are called prions.				
	disease / (CJD).				1 + 1 =2
				1'	
7	(a) Production of two kinds	of spores is l	(Any oi known as heterospory /	ne disease)	
	Production of macrospores and microspores is called heterospory.			1 + 1 - 2	
	(b) Selaginella and Salvinia			1 + 1 -2	
8.	(a) Used in polishing.	and armina			
	(b) Chrysophytes	Used in filtration of oils and syrups. (b) Chrysophytes			
9.	A	•••	B		
	a. Red algae	11. iv	Protonema		$\frac{1}{2} \ge 4 = 2$
	c Pteridophytes	i 1v.	Prothallus	-	
	d. Gymnosperms		Mycorrhiza	\neg	
			· · ·		
P					
Dr GF	C. SUNIL KUMAR. S, NVT Biology FVHSS Cheruvathur. 949582429	97		Pa	ge 1
31		-		14	<u> </u>

10. (a) Drupe (b) Fruit formed without fertilisation of the ovary (Unfertilized ovary) is called parthenocarpic fruit. 11. (a) Mitochondria produce cellular energy in the form of ATP, hence they are called 'b) Crista 1 12. Bryophytes Gymnosperms • Lack of true roots, stem or leaves. • Naked seeded plants. • Sporophyll form compact strobili or cones 13. (a) A - Region of maturation B - Region of elongation 7 14. Dicot Leaf Monocot Leaf (i) Stomata on lower epidermis only. (i) Stomata on lower epidermis. (ii) Mesophyll tissue is differentiated into pairsde and lower spongy (a) Solanaceae. (b) Actinomorphic / bisexual / hypogynous / 5 sepals / gamosepalous / 5 stals / gamopetalous / 5 stamens / free stamens / epipetalous stamens / bicarpellary / syncarpous / superior ovary. (Any two floral character) 16. Rough Endoplasmic Reticulum Smooth Endoplasmic Reticulum (i) Actively involved in protein si, 'ib Actively and the protein si. ************************************	Marks	Scoring indicators		
11. (a) Mitochondria produce cellular energy in the form of ATP, hence they are called power houses' of the cell (b) Crista 1 12. Bryopytes Gymnosperms • Lack of true roots, stem or leaves. • Naked seeded plants. 1 13. (a) A - Region of maturation B - Region of elongation . . 14. Dicot Leaf Monocot Leaf . . (i) Stomata on lower epidermis only. (i) Stomata on lower epidermis only. (ii) Monocot Leaf . . 15. (a) Solanaceae. (b) Actinomorphic / bisexual / hypogynous / 5 sepals / gamosepalous / 5 petals / gamopetalous / 5 stamens / free stamens / epipetalous stamens / bicarpellary / syncarpous / superior ovary. . . 16. Rough Endoplasmic Reticulum (i) Catch carry 3 scores . . 16. Rough Endoplasmic Reticulum with ribosomes on the surface. (ii) Actively involved in protein synthesis. . . PART - III Answer any 3 questions from 17 - 20. Each carry 3 scores 17. (a) The arrangement of flowers on the floral axis is called inflorescence. . . (b) Racemose Cymose . . .	1+1=2	 (a) Drupe (b) Fruit formed without fertilisation of the ovary (Unfertilized ovary) is called parthenocarpic fruit. 		10.
I2. Bryophytes Gymnosperms • Lack of true roots, stem or leaves. • Naked seeded plants. • Sporophyll form compact strobili or cones 13. (a) A - Region of maturation B - Region of elongation C - Region of meristematic activity. • Sporophyll form compact strobili or cones 14. Dicot Leaf Monocot Leaf (i) Stomata on lower epidermis only. (i) Stomata on lower epidermis. (i) Stomata present on both upper & lower epidermis. (ii) Mesophyll tissue is differentiated into upper palisade and lower spongy parenchyma. (ii) Guard cell kidney / bean shaped (ii) Mesophyll tissue is not differentiated into palisade and spongy parenchyma. (iii) Guard cell kidney / bean shaped (ii) Guard cell dumb bell shaped 4 15. (a) Solanaceae. (b) Actinomorphic / bisexual / hypogynous / 5 sepals / gamosepalous / 5 petals / gamostratery 4 (ii) Endoplasmic Reticulum with ribosomes on the surface. (ii) Actively involved in protein synthesis. (ii) Actively involved in protein synthesis. 4 PART - III Answer any 3 questions from 17 - 20. Each carry 3 scores 17. (a) The arrangement of flowers on the floral axis is called inflorescence. (b) The main axis continues to grow. The main axis terminates in a flower. Flowers develop in acropetal succe	1 + 1 = 2	(a) Mitochondria produce cellular energy in the form of ATP, hence they are called 'power houses' of the cell(b) Crista		
• Lack of true roots, stem or leaves. • Naked seeded plants. 1 • Depend on water for sexual reproduction. • Sporophyll form compact strobili or cones 1 13. (a) A - Region of maturation B - Region of elongation C - Region of meristematic activity. 9 (b) Protects the tender apex of the root / Protection. 9 14. Dicot Leaf Monocot Leaf 9 (i) Stomata on lower epidermis only. (i) Stomata on lower epidermis only. (i) Stomata present on both upper & lower epidermis. (ii) Mesophyll tissue is differentiated into parachyma. (iii) Guard cell kidney / bean shaped (iii) Guard cell dumb bell shaped 9 15. (a) Solanaceae. (b) Actinomorphic / bisexual / hypogynous / 5 sepals / gamosepalous / 5 petals / gamosepalous / 5 petals / gamosepalous / 5 stamens / free stamens / epipetalous stamens / bicarpellary / syncarpous / superior ovary. 9 16. Rough Endoplasmic Reticulum Smooth Endoplasmic Reticulum vithout ribosomes on the surface. (i) Actively involved in protein synthesis. 10 17. (a) The arrangement of flowers on the floral axis is called inflorescence. 10 11 (b) Racemose Cymose The main axis continues to grow. The main axis terminates in a flower. 11 16. Racemose Cymose The main axis contin		Gymnosperms	Bryophytes	12.
13. (a) A - Region of maturation B - Region of elongation C - Region of meristematic activity. * 14. Dicot Leaf Monocot Leaf (i) Stomata on lower epidermis only. (i) Stomata present on both upper & lower epidermis. (ii) Mesophyll tissue is differentiated into upper palisade and lower spongy parenchyma. (iii) Guard cell kidney / bean shaped (ii) Mesophyll tissue is not differentiated into palisade and spongy parenchyma. * 15. (a) Solanaceae. (b) Actinomorphic / bisexual / hypogynous / 5 sepals / gamosepalous / 5 petals / gamopetalous / 5 stamens / free stamens / epipetalous stamens / bicarpellary / syncarpous / superior ovary. * 16. Rough Endoplasmic Reticulum Smooth Endoplasmic Reticulum (i) Actively involved in protein synthesis. PART - III Answer any 3 questions from 17 – 20. Each carry 3 scores 17. (a) The arrangement of flowers on the floral axis is called inflorescence. (b) 17. (a) The arrangement of flowers on the floral axis is called inflorescence. (b) 17. (a) The arrangement of flowers on the floral axis is called inflorescence. Flowers develop in acropetal succession.	1 + 1 = 2	 Naked seeded plants. Sporophyll form compact strobili or cones 	 Lack of true roots, stem or leaves. Depend on water for sexual reproduction. 	
14. Dicot Leaf Monocot Leaf (i) Stomata on lower epidermis only. (i) Stomata present on both upper & lower (ii) Mesophyll tissue is differentiated (i) Stomata present on both upper & lower (iii) Mesophyll tissue is differentiated (i) Stomata present on both upper & lower (iii) Mesophyll tissue is differentiated (i) Mesophyll tissue is not differentiated (iii) Guard cell kidney / bean shaped (ii) Mesophyll tissue is not differentiated 15. (a) Solanaceae. (ii) Actinomorphic / bisexual / hypogynous / 5 sepals / gamosepalous / 5 petals / (i) Actinomorphic / bisexual / hypogynous / 5 sepals / gamosepalous / 5 petals / 1 16. Rough Endoplasmic Reticulum Smooth Endoplasmic Reticulum (i) Actively involved in protein (i) Actively involved in protein (i) Actively involved in lipid and steroid 17. (a) The arrangement of flowers on the floral axis is called inflorescence. (b) 17. (a) The arrangement of grow. The main axis continues to grow. The main axis continues to grow. Flowers develop in acropetal Succession. The main axis continues to grow. The main axis continues to grow.	$\frac{1}{2} \ge 4 = 2$	 (a) A - Region of maturation B - Region of elongation C - Region of meristematic activity. (b) Protects the tender apex of the root / Protection. 		13.
(i) Stomata on lower epidermis only. (i) Stomata present on both upper & lower epidermis. (ii) Mesophyll tissue is differentiated into upper palisade and lower spongy parenchyma. (ii) Mesophyll tissue is not differentiated into palisade and spongy parenchyma. (iii) Guard cell kidney / bean shaped (ii) Guard cell dumb bell shaped (ii) Actinomorphic / bisexual / hypogynous / 5 sepals / gamosepalous / 5 petals / gamopetalous / 5 stamens / free stamens / epipetalous stamens / bicarpellary / syncarpous / superior ovary. (Any two floral character) 16. Rough Endoplasmic Reticulum Smooth Endoplasmic Reticulum (i) Actively involved in protein synthesis. (i) Actively involved in protein synthesis. (ii) Actively involved in florescence. 17. (a) The arrangement of flowers on the floral axis is called inflorescence. (b) 17. (a) The arrangement of flowers on the floral axis is called inflorescence. The main axis continues to grow. 18. Racemose Cymose		Monocot Leaf	Dicot Leaf	14.
(iii) Guard cell kidney / bean shaped (iii) Guard cell dumb bell shaped 15. (a) Solanaceae. (b) Actinomorphic / bisexual / hypogynous / 5 sepals / gamosepalous / 5 petals / gamopetalous / 5 stamens / free stamens / epipetalous stamens / bicarpellary / syncarpous / superior ovary. 4 16. Rough Endoplasmic Reticulum Smooth Endoplasmic Reticulum (i) Endoplasmic reticulum with ribosomes on the surface. (ii) Actively involved in protein synthesis. (ii) Actively involved in protein synthesis. (ii) Actively involved in lipid and steroid hormone synthesis. PART – III Answer any 3 questions from 17 – 20. Each carry 3 scores 17. (a) The arrangement of flowers on the floral axis is called inflorescence. (b) Racemose Cymose The main axis continues to grow. Flowers develop in acropetal succession. The main axis continues to grow. The wais terminates in a flower.	¹ ⁄2 x 4 =2	(i) Stomata present on both upper & lower epidermis.(ii) Mesophyll tissue is not differentiated into palisade and spongy parenchyma.	 (i) Stomata on lower epidermis only. (ii) Mesophyll tissue is differentiated into upper palisade and lower spongy parenchyma. 	
15. (a) Solanaceae. (b) Actinomorphic / bisexual / hypogynous / 5 sepals / gamosepalous / 5 petals / gamopetalous / 5 stamens / free stamens / epipetalous stamens / bicarpellary / syncarpous / superior ovary. 1 16. Rough Endoplasmic Reticulum Smooth Endoplasmic Reticulum (i) Endoplasmic reticulum with ribosomes on the surface. (i) Endoplasmic reticulum with ribosomes on the surface. (ii) Actively involved in protein synthesis. (ii) Actively involved in protein synthesis. PART – III Answer any 3 questions from 17 – 20. Each carry 3 scores 17. (a) The arrangement of flowers on the floral axis is called inflorescence. (b) The main axis continues to grow. Flowers develop in acropetal succession. The main axis continues to grow. The main axis terminates in a flower. Flowers develop in acropetal succession. Flowers develop in basipetal succession. Flowers develop in basipetal succession.		(iii) Guard cell dumb bell shaped	(iii) Guard cell kidney / bean shaped	
16. Rough Endoplasmic Reticulum Smooth Endoplasmic Reticulum (i) Endoplasmic reticulum with (i) Endoplasmic reticulum without (i) Endoplasmic reticulum without ribosomes on the surface. (ii) Actively involved in protein (ii) Actively involved in lipid and steroid synthesis. (ii) Actively involved in protein (ii) Actively involved in lipid and steroid hormone synthesis. PART - III Answer any 3 questions from 17 - 20. Each carry 3 scores 17. (a) The arrangement of flowers on the floral axis is called inflorescence. (b) Racemose The main axis continues to grow. The main axis continues to grow. Flowers develop in acropetal succession. Flowers develop in basipetal succession.	¹⁄₂ x 4 =2	 (a) Solanaceae. (b) Actinomorphic / bisexual / hypogynous / 5 sepals / gamosepalous / 5 petals / gamopetalous / 5 stamens / free stamens / epipetalous stamens / bicarpellary / syncarpous / superior ovary. 		
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Image: synthesis. Image: hormone synthesis. PART – III Answer any 3 questions from 17 – 20. Each carry 3 scores 17. (a) The arrangement of flowers on the floral axis is called inflorescence. (b) Cymose The main axis continues to grow. The main axis terminates in a flower. Flowers develop in acropetal succession. Flowers develop in basipetal succession.		(i) Endoplasmic reticulum withoutribosomes on the surface.(ii) Actively involved in lipid and steroid	(i) Endoplasmic reticulum withribosomes on the surface.(ii) Actively involved in protein	
PART – III Answer any 3 questions from 17 – 20. Each carry 3 scores 17. (a) The arrangement of flowers on the floral axis is called inflorescence. (b) Racemose Cymose The main axis continues to grow. The main axis terminates in a flower. Flowers develop in acropetal succession. Flowers develop in basipetal succession.	1 + 1 = 2	hormone synthesis.	synthesis.	
Answer any 3 questions from 17 – 20. Each carry 3 scores 17. (a) The arrangement of flowers on the floral axis is called inflorescence. (b) Racemose Cymose The main axis continues to grow. Flowers develop in acropetal succession.		RT – III	PA	
17. (a) The arrangement of flowers on the floral axis is called inflorescence. (b) Racemose Cymose The main axis continues to grow. The main axis terminates in a flower. Flowers develop in acropetal Flowers develop in basipetal succession. succession. Flowers develop in basipetal succession.		from 17 – 20. Each carry 3 scores	Answer any 3 questions	
RacemoseCymoseThe main axis continues to grow. Flowers develop in acropetal succession.The main axis terminates in a flower. Flowers develop in basipetal succession.		(a) The arrangement of flowers on the floral axis is called inflorescence.(b)		
The main axis continues to grow.The main axis terminates in a flower.Flowers develop in acropetalFlowers develop in basipetal succession.succession.Flowers develop in basipetal succession.		Cymose	Racemose	
	1 + 1 =2	The main axis terminates in a flower. Flowers develop in basipetal succession.	The main axis continues to grow. Flowers develop in acropetal succession.	
Dr. SUNIL KUMAR. S, NVT Biology GFVHSS Cheruvathur, 9495824297 Page 2	2	Pa	: SUNIL KUMAR. S, NVT Biology WHSS Cheruvathur, 9495824297	Dr. GF

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
1		

		PART -B	
	7	COOLOGY	
Qn. No.	Scoring indicators		
	P	PART - I	
	Answer any 3 questio	ns from 1 – 6. Each carry 1 score	
1.	D) / Musca domestica		1
2.	C) / Species \rightarrow Genus \rightarrow Family \rightarrow Order \rightarrow Class \rightarrow Phylum \rightarrow Kingdom		1
3.	Physalia		1
4.	Glycine / Amino acid		1
5	Tracheal system		
5.	Cuticle		1
	P	PART - II	
	Answer any 9 question	ns from 6 – 16. Each carry 2 scores	
6.	A) ICZN - International Code of Zoological NomenclatureB) ICBN - International Code for Botanical Nomenclature		1 + 1 =2
7.	Radula Moll	usca	
	Comb plates Cten	ophora	
	Flame cells Platy	helminthes	
	Proboscis gland Hem	ichordata	$\frac{1}{2} \ge 4 = 2$
8.	a) A – Chondrichthyes B – Osteichthyes b)		
	Chondrichthyes	Osteichthyes	16 1 2
	They are marine animals.	It include both marine and fresh water animals	$72 \times 4 = 2$
	Mouth is ventral in position.	Mouth is mostly terminal in position.	
	They have cartilaginous endoskeleton	They have bony endoskeleton	
	Gill slits are separate and without	They have four pairs of gills covered by	
	operculum.	operculum.	
	Air bladder is absent.	Air bladder is present Skin is covered by cycloid/ctenoid scales	
	Skin is covered by placoid scales.	Shin is covered by cycloral etchora scales	
		(Any two characters)	

	Poikilothormous	Homoiothormous	
		Esure	$\frac{1}{2} \ge 4$
	Hippocampus	Equus	
	Irygon	rengum	
	b) Poikilothermous - They are cold- their body temperature.Homoiothermous - They are warm- constant body temperature.	-blooded animals/ They lack the capacity to regulate -blooded animals / They are able to maintain a	
10.	Jointed appendaged animals / Body bilateral symmetry / Animals are tra- of circulation.	v is covered by chitinous exoskeleton / Animals show iploblastic and coelomate / Animals show open type	
		(Any two relevant characters)	1 + 1
11.	 A) Cnidoblasts or Cnidocytes B) Coelenterata / Cnidaria C) They are used for anchorage, det 	fense and for the capture of prey.	1 + 1
12.	 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 		¹∕2 x 4
13.	A – Oxidoreductases/dehydrogenases		
	B – Transferases		
	C – Lyases D – Ligases		¹ ∕2 x 4
14.	A) Glycosidic bond B) Peptide bond.		1 + 1
15.	A) – Adipose tissue B) – Tendons C) – Blood D) – Ligaments		1/2 X 4
	D) Diguinentis	DELETED CHAPTER / PORTION AS PER SCERT	,
16.	a – Jejunum b – Ileum c – Colon d – Rectum	DELETED CHAPTER AS PER SCERT	1⁄2 X 4

Qn. No.	Scoring indicators		Marks
	PART – III		
	Answer any 3 questions fr	rom 17 – 20. Each carry 3 scores	
17.	A) X – Gill slits		
	Y - Post anal tail		
	B) Chandatas		
		Non-chordates	
	1. Notochord present	1. Notochord absent	
	2. Pharynx perforated by gill slits.	2. Gill slits are absent.	
	3. Heart is ventral.	3. Heart is dorsal (if present).	
	4. A post-anal part (tail) is present.	4. post-anal tail is absent.	
			1+2 =3
18.	a) B - Pseudocoelomate		
	C - Accelomate b) Coelomate Animals possessing true c	colom are called coolomates	
	Pseudocoelomate - If the body cavity is	s not lined by mesoderm, it is called	
	pseudocoelomate / the mesoderm is pr	esent as scattered pouches in between the	
	ectoderm and endoderm.	-	1+2 =3
19.	A) S - Substrate P - Product		
	B) Temperature, pH, Concentration of Su	bstrate (Any two)	
	C) The enzyme releases the products of the bind to another substrate molecule	he reaction and the free enzyme is ready to	1+1+1 =3
			1 + 1 + 1 = 5
20.	Α	В	
	PROTEINS	FUNCTIONS	
	Collagen	Intercellular ground substances	
		Engumon	
	Trypsin	Enzymes	
	Insulin	Hormone	¹⁄₂ x 6 =3
	Insulin Antibody	Hormone Fights infectious agents	¹ ⁄ ₂ x 6 =3
	Insulin Antibody Receptor	Enzymes Hormone Fights infectious agents Sensory reception	¹ ⁄₂ x 6 =3