Paper Code Number: 4461	2024 (1st-A) INTERMEDIATE PART-II (12th Class)	Roll No: _____
BIOLOGY PAPER-II GROUP-I	MTN-1-24	
TIME ALLOWED: 20 Minutes	OBJECTIVE	MAXIMUM MARKS: 17

Q.No.1 **You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question.**

S.#	QUESTIONS	A	B	C	D
1	Which of the given is recovered in the collecting duct of the nephron?	Glucose	Water	$NaC\ell$	Potassium ions
2	The type of muscle having regular striations multinucleate and voluntary is:	Skeletal muscle	Smooth muscle	Cardiac muscle	All types of muscles
3	Cyclic activity of cross bridges is regulated by:	Calcium ions	Troponin	ATP	Actin
4	Given are the principle action of insulin except:	Increasing glycogen synthesis	Increasing cell utilization of glucose	Inhibits hydrolysis of glycogen	Promotes hydrolysis of glycogen
5	Cell bodies of sensory neurons constitute:	Dorsal root ganglion	Gray matter	Ventral root ganglion	Posterior root ganglion
6	Mature sperms are formed from spermatids through:	Meiosis-I	Meiosis-II	Differentiation	Mitosis
7	The head can be regenerated in:	Earthworm	Frog	Leech	Grasshopper
8	Which of the given is a stop codon?	UUG	UGA	UCU	CCA
9	To code 50 amino acids in a polypeptide chain, what will be the minimum number of nucleotides in its gene?	50	150	100	51
10	Which of the given is trisomy syndrome?	Down's	Edward	Patau	All of these
11	Different alleles of a gene that are both expressed in heterozygous condition are called:	Complete dominance	Incomplete dominance	Codominant	Over dominance
12	Which of the given is incorrectly matched?	Protoplast – plant cell engineering	RFLPs – DNA finger printing	DNA polymerase – PCR	DNA Ligase – Mapping humans chromosomes
13	Taq polymerase is used in PCR because of its:	Low thermal stability	High thermal stability	High fidelity	High speed
14	Lyell published the principles of:	Geology	Population	Genetics	Ecology
15	Diseases in living organisms which are caused by parasites are termed as:	Mutualism	Commensalism	Infestations	Succession
16	Coniferous forest located at high latitude are called:	Alpine	Boreal	Taiga	Prairies
17	The decline in thickness of ozone layer is caused by increasing level of:	Hydrocarbon	Nitro carbon	Chlorine	Chlorofluorocarbon

2024 (1st-A) INTERMEDIATE PART-II (12th Class)		Roll No: MTN-1-24
BIOLOGY PAPER-II GROUP-I		
TIME ALLOWED: 2.40 Hours	**SUBJECTIVE**	**MAXIMUM MARKS: 68**

NOTE: Write same question number and its parts number on answer book, as given in the question paper.

SECTION-I

2. Attempt any eight parts.		**8 × 2 = 16**
(i)	How metanephridium is better than protonephridium?	1+1
(ii)	Categorise the plants distribution on the basis of osmoregulation.	2
(iii)	How can you describe blubber?	2
(iv)	Compare Epinasty with Hyponasty?	1+1
(v)	How would you define sliding filament model?	2
(vi)	How does jet propulsion mechanism work?	2
(vii)	What are advantages of Sexual Reproduction?	1+1
(viii)	How menstrual cycle is defined?	2
(ix)	Mention role of light in Limnetic zone.	2
(x)	Compare Coniferous alpine and Boreal forests.	1+1
(xi)	Define Greenhouse effect.	2
(xii)	Write any two sources of water pollution.	2
3. Attempt any eight parts.		**8 × 2 = 16**
(i)	What are the elements of nervous system?	
(ii)	Which factors control secretion of Antidiuretic hormone or Vasopressin?	
(iii)	Define Habituation. Give example.	
(iv)	Differentiate between Homozygote and Heterozygote.	
(v)	What are multiple Alleles? Give example.	
(vi)	How does sex determination occur in birds?	
(vii)	How can gene of interest be obtained?	
(viii)	What are the applications of PCR amplification and analysis?	
(ix)	Mention forensic application of DNA analysis.	
(x)	What is Biosphere?	
(xi)	Define Food web. Give its importance.	
(xii)	Write a note on Limnetic zone.	
4. Attempt any six parts.		**6 × 2 = 12**
(i)	How do environmental factors contribute to abnormal development?	
(ii)	Why growth pattern in plants is called an open growth?	
(iii)	What are Fixed alleles?	
(iv)	How can you differentiate between Homologous and Analogous organs?	
(v)	Why do DNA replication always proceeds $5' \rightarrow 3'$ directions?	
(vi)	What is a Point Mutation? Give one example.	
(vii)	How do different chromosomes differ from each other?	
(viii)	How are cancerous cells distinguished from normal cells?	
(ix)	Is interphase a resting phase? Why?	

SECTION-II

NOTE: Attempt any three questions.		**3 × 8 = 24**
5.(a)	Explain different methods of excretion in plants.	4
(b)	What is Meiosis? Discuss prophase-I of meiosis in detail.	4
6.(a)	Define Joints. How they are classified? Explain.	4
(b)	Define Succession? Explain Xerosere in detail.	4
7.(a)	What is Synapse? How impulse can pass through synapse? Discuss it with suitable diagram.	4
(b)	Define Endangered species. Explain three measures to save endangered species.	4
8.(a)	What are autosomes and sex-chromosomes? Explain sex-determination in humans.	4
(b)	Discuss the role of phytochromes in photoperiodism.	4
9.(a)	Explain embryonic induction in detail.	4
(b)	What are transgenic bacteria? Write down their practical use in various fields.	4