

Paper Code Number: 4461	2024 (1 st -A) INTERMEDIATE PART-II (12 th Class)		Roll No: _____		
BIOLOGY PAPER-II GROUP-I					
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	NaCl	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

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2024 (1 st -A)		Roll No: <i>MTN-1-24</i>
INTERMEDIATE PART-II (12 th Class)		
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' → 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

Paper Code		2024 (1 st -A)		Roll No: _____	
Number: 4466		INTERMEDIATE PART-II (12 th Class)			
BIOLOGY PAPER-II GROUP-II					
TIME ALLOWED: 20 Minutes			OBJECTIVE	MAXIMUM MARKS: 17	
<p style="text-align: center;"><i>MTN-2-24</i></p> 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 one of these syndromes is rare X-linked recessive trait?	Color blindness	Testicular feminization	Hemophilia	Hypophosphatemic rickets
2	Bacterial cells take up recombinant DNA when treated with:	$CaCl_2$	DNA ligase	RNA polymerase	Bacteriophage
3	Luciferase enzyme is found only in:	Fruit fly	Dragon fly	Fire fly	Butterfly
4	The main cause of extinction of species is:	Pollution	Habitat destruction	Global warming	Parasitism
5	The relationship between insects and flowering plants is an example of:	Mutualism	Parasitism	Commensalism	Predation
6	Which zone is rich in life in aquatic ecosystem?	Profundal zone	Limnetic zone	Littoral zone	All of these
7	Stone cancer is a result of _____ pollution.	Water	Soil	Sound	Air
8	Which one of these requires least amount of water for its elimination from body?	Creatinine	Uric acid	Ammonia	Urea
9	There are _____ muscles present in human body.	650	630	680	206
10	The action of venus flytrap is called:	Nytinasty	Photinasty	Thermonasty	Haptonasty
11	Nociceptors in our body are related with:	Vibration	Touch	Pain	Light
12	Which one of these hormones promotes flowering in pineapple?	Auxins	Ethene	Abscisic acid	Cytokinins
13	Which of these is present between uterus and vagina?	Urinogenital duct	Oviduct	Cervix	Fallopian tube
14	During chick development, nervous system arises from:	Ectoderm	Mesoderm	Endoderm	Coelom
15	In sickle cell anemia, valine is present in hemoglobin in place of:	Proline	Glutamine	Glutamic acid	Isoleucine
16	X-Ray diffraction analysis of DNA was performed by:	Erwin Chargaff	Rosalind Franklin	Watson and Crick	Frederick Miescher
17	In yeast, cell cycle is completed in:	9 hours	10 hours	4.5 hours	1.5 hours

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2024 (1 st -A)		Roll No: <u>MTN-2-24</u>
INTERMEDIATE PART-II (12 th Class)		
BIOLOGY PAPER-II GROUP-II		
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 does aldosterone play its role in concentration of urine?	
(ii)	What is special or unique feature of Malpighian tubules in insects?	
(iii)	Why does temperature of body increase during fever?	
(iv)	What is "All or None" response in muscle contraction?	
(v)	How does exercise affect a muscle?	
(vi)	How is pulvinus involved in sleep movements?	
(vii)	How are identical twins produced?	
(viii)	What do you know about the term oviparity?	
(ix)	Write down any two properties of hydrospheric ecosystem.	
(x)	Differentiate between Prairies and Savanna grasslands.	
(xi)	How are solid wastes useful in overcoming energy crisis?	
(xii)	Mention causes of Beriberi and Haemophilia.	
3. Attempt any eight parts.		8 × 2 = 16
(i)	Define Habituation. Give two examples.	
(ii)	Write the role of a hormone in regulation of bile and pancreatic juice secretion.	
(iii)	Give the functions of sympathetic nervous system.	
(iv)	What are compound sex chromosomes? Write one example.	
(v)	Differentiate the sex-determination pattern in humans and birds.	
(vi)	What are Pseudoautosomal genes? Give one example.	
(vii)	What are Transgenic bacteria? Give their role in cleaning up beaches.	
(viii)	How Transgenic bacteria are better than Transgenic animals?	
(ix)	What is meristem culture? Write its one advantage.	
(x)	Draw a flow sheet of an energy pyramid showing transfer of energy from producers to tertiary consumers.	
(xi)	Differentiate between Primary and Secondary Succession.	
(xii)	Define the terms habitat and niche.	
4. Attempt any six parts.		6 × 2 = 12
(i)	Highlight the role of morphogenetic determinants during development of an individual.	
(ii)	What do you know about discoidal cleavage?	
(iii)	"Genetic code is universal but not quite universal". Justify this statement.	
(iv)	How is lagging strand synthesized in the replication process?	
(v)	What is point mutation? Give one example.	
(vi)	Why interphase is called resting phase?	
(vii)	How is Phragmoplast formed? Give its importance for future daughter cells.	
(viii)	What are Hydrothermal vents?	
(ix)	Differentiate between Divergent and Convergent evolution.	
SECTION-II		
NOTE: Attempt any three questions.		3 × 8 = 24
5.(a)	Explain thermoregulatory strategies in mammals.	4
(b)	Describe Necrosis and Apoptosis.	4
6.(a)	Explain process of repair of broken bones.	4
(b)	Write a note on Xerosere.	4
7.(a)	What is a Nerve Impulse? Discuss the major factors involved in Resting Membrane Potential.	4
(b)	Discuss major points of Darwin's theory of natural selection.	4
8.(a)	Enlist the names of different types of asexual reproduction in animals.	4
(b)	Explain Parthenogenesis and its types. Write a note on Erythroblastosis foetalis.	4
9.(a)	Discuss the role of nucleus in development by giving the example of Acetabularia?	4
(b)	Write a detailed note on Gene sequencing.	4