

Roll No. _____ (To be filled in by the candidate)

(Academic Sessions 2019 – 2021 to 2021 – 2023)

BIOLOGY

223-1st Annual-(INTER PART – II)

Time Allowed : 20 Minutes

Q.PAPER – II (Objective Type)

GROUP – I

Maximum Marks : 17

PAPER CODE = 8461 *CHP-12-1-23*

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	In urea cycle, arginine splits into urea and ornithine by an enzyme : (A) Arginase (B) Ornithase (C) Citrulase (D) Dehydrogenase
2	Which vertebra in reptiles is modified for the rotational movement : (A) Atlas (B) Thoracic (C) Axis (D) Sacral
3	At the place of attachment of leaf with the shoot, a swollen part is called : (A) Pith (B) Pit (C) Pulvinus (D) Cortex
4	Resting membrane potential of a neuron is : (A) – 50 mV (B) – 70 mV (C) – 60 mV (D) – 80 mV
5	Absciscic acid can be sprayed on tree crops to regulate : (A) Leaf drop (B) Shoot drop (C) Flower drop (D) Fruit drop
6	Vehicles for transport of male gamete in land plant is : (A) Pollen tube (B) Pollen grain (C) Vacuole (D) Anther
7	Cell wall becomes thicker and pitted during cell : (A) Maturation (B) Elongation (C) Differentiation (D) Division
8	Copying of mRNA from DNA is called : (A) Transduction (B) Transdation (C) Transformation (D) Transcription
9	DNA polymerase III : (A) Recognizes primer (B) Constructs primer (C) Initiates DNA replication (D) Unwinds DNA helix
10	Down syndrome is : (A) Trisomy 19 (B) Trisomy 18 (C) Trisomy 21 (D) Trisomy 23
11	Bombay phenotype is an example of : (A) Pleiotropy (B) Epistasis (C) Probability (D) Dominance
12	Primer for PCR contains about : (A) 05 – 07 bases (B) 10 – 20 bases (C) 25 – 30 bases (D) 30 – 40 bases
13	One common type of vector is : (A) Plasmid (B) Chromosome (C) Lysosome (D) Mitochondria
14	The ultimate source of all changes is : (A) Genetic drift (B) Migration (C) Mutation (D) Selection
15	Overgrazing may lead to : (A) Tundra (B) Grassland (C) Desert (D) Taiga
16	Scum in eutrophication is formed by : (A) Algae (B) Fungi (C) Bacteria (D) Virus
17	Which of these diseases is caused due to nutritional deficiency : (A) Diphtheria (B) Arteriosclerosis (C) Scurvy (D) Osteoarthritis

192-223-I-(Objective Type)- 7000 (8461)

2. Write short answers to any EIGHT (8) questions :

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- (i) What is counter current multiplier mechanism?
- (ii) Define excretophores. Give their functions.
- (iii) Give the role of pyrogens.
- (iv) What is negative geotropism? Give at least one example.
- (v) Write the composition of procuticle.
- (vi) Give the structure of sarcoplasmic reticulum.
- (vii) What is ovoviviparity? Give an example.
- (viii) Draw and label the diagram of C.S. of seminiferous tubule.
- (ix) What is difference between climate and weather?
- (x) What is grassland ecosystem? Give at least one example.
- (xi) Define soil.
- (xii) Draw the flow chart showing the formation of ASH and CO₂ from dead plants.

3. Write short answers to any EIGHT (8) questions :

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- (i) Define nerve impulse.
- (ii) Define nociceptors.
- (iii) What do you know about cretinism?
- (iv) How can you protect the baby against Rh⁻ incompatibility?
- (v) What is MODY?
- (vi) In birds, the female is heterogametic. How?
- (vii) Write down two practical uses of DNA finger printing.
- (viii) Discuss any two benefits of transgenic bacteria to promote health in plants.
- (ix) Define and give examples of ex-vivo and in-vivo gene therapy.
- (x) What are biogeochemical cycles?
- (xi) Discuss role of decomposers in ecosystem.
- (xii) Define food chain. Write an example.

4. Write short answers to any SIX (6) questions :

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- (i) How light plays important role in plant growth?
- (ii) Into how many layers mesoderm splits and also define the coelom?
- (iii) In what way mutation causes sickle cell disease?
- (iv) Why replication always take place in 5' → 3' direction?
- (v) What do you know about Okazaki fragments?
- (vi) Compare mitosis with meiosis.
- (vii) Write symptoms of Down's syndrome.
- (viii) Differentiate between homologous and analogous organs.
- (ix) What are vestigial organs? Give one example.

SECTION – II**Note : Attempt any THREE questions.**

5. (a) What is Renal failure? Describe its cure. 4
- (b) What is cancer? Give its causes and effects. 4
6. (a) Define joints. How are they classified? Explain. 4
- (b) Define succession. Explain xerosere in detail. 4
7. (a) What is active membrane potential? Explain its major causing factors. Also draw a graph that shows changes in membrane potential from resting to active membrane potential. 4
- (b) Define Hardy-Weinberg theorem. Also explain the Hardy-Weinberg equations for calculating the frequencies of alleles and genotypes in populations at equilibrium. 4
8. (a) Explain the birth of twins in human beings. 4
- (b) Describe the assortment of alleles of two contrasting pairs of traits when followed in the same cross by giving one example. 4
9. (a) What is growth? Discuss different conditions for growth. 4
- (b) Define gene therapy, explain in which diseases ex-vivo gene therapy are needed. 4