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

(Academic Sessions 2019 – 2021 to 2021 – 2023)

IOLOGY 223-1st Annual-(INTER PART – II) Time Allowed : 20 Minutes

).PAPER – II (Objective Type) GROUP – II Maximum Marks : 17

PAPER CODE = 8464 LHR-12-7-23

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	Hair end organs : (A) Receive deep pressure stimulus (B) Receive touch stimulus (C) Are located in the limbs (D) Are sensitive for vibration sense
2	During the replication process of DNA, the lagging strand : (A) Replicates towards replication fork (B) Is synthesized by DNA ligase (C) Replicates away from replication fork (D) Replicates continuously
3	Lamarckism means : (A) To calculate the gene frequency (B) Inheritance of acquired traits (C) Descent with modification (D) Natural selection and adaptation
4	Which one is a degenerative disease : (A) Scurvy (B) Kwashiorkor (C) Beriberi (D) Arteriosclerosis
5	The central cavity of the kidney where urine is collected is called : (A) Bowman's capsule (B) Vasa recta (C) Pelvis (D) Renal medulla
6	EcoR1 is : (A) Used in PCR (B) Used in reverse transcription (C) A viral enzyme (D) A restriction enzyme
7	Most of the increase in the thickness of stem is caused by : (A) Secondary xylem (B) Secondary phloem (C) Cork (D) Bark
8	Which of these dominance relations is characterized by the intermediate phenotype of heterozygote between the phenotypes of two homozygotes : (A) Complete dominance (B) Over dominance (C) Partial dominance (D) Co-dominance
9	A grassland present in temperate climate is called : (A) Prairies (B) Taiga (C) Savanna (D) Alpine grassland
10	Intercalary meristems in plants get separated from apical meristems by : (A) Permanent tissue (B) Cork tissue (C) Vascular cambium (D) Cork cambium
11	Which of these exist in xylem as solid bundles : (A) Collenchyma (B) Fibers (C) Sclereides (D) Vessels
12	According to Erwin Chargaff : (A) A + T = C + G (B) A + G = C + T (C) A + C = G + T (D) C + T = A + T
13	Alternating diploid sporophyte with haploid gametophyte generation in plants is called : (A) Diplontic life cycle (B) Haplontic life cycle (C) Diplohaplontic life cycle (D) Haplodiplontic life cycle
14	G-2 of interphase : (A) Lasts for 90 minutes (B) Is post mitotic phase (C) Is pre mitotic phase (D) Is characterized by DNA synthesis
15	Which of these plant hormones inhibits the growth of root and stem during physiological stress : (A) Auxin (B) Cytokinin (C) Gibberellins (D) Abscisic acid
16	A probe is used : (A) As restriction enzyme (B) In gene therapy (C) To search genomic library (D) For the treatment of cystic fibrosis
17	Succession starting in pond is called : (A) Halosere (B) Hydrosere (C) Xerosere (D) Derosere

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 : 2.40 hours

PAPER – II (Essay Type) GROUP – II Maximum Marks : 68

SECTION – I CHR-12-2-23

2. Write short answers to any EIGHT (8) questions : 16

(i) What are heat shock proteins? Give their role.
(ii) How are animals able to do osmoregulation in hypotonic environment?
(iii) Define homeostasis. Give components of homeostatic control system.
(iv) Write name of regions of vertebral column with number of vertebrae.
(v) Define remolding.
(vi) How does digitigrade differ from unguligrade?
(vii) Write cause and symptoms of syphilis.
(viii) What do you mean by fruit set and fruit ripening?
(ix) Name two common animals and two plants of temperate deciduous forests.
(x) Differentiate between coniferous alpine and boreal forests.
(xi) Define non-renewable resources. Give one example.
(xii) How environment is a source essential to maintain life?

3. Write short answers to any EIGHT (8) questions : 16

(i) Define coordination. Give its types in animals.
(ii) Give only two commercial uses of Gibberellins.
(iii) Write the distribution of pain and cold receptors on animal body.
(iv) Give the relationship between the terms gene and locus.
(v) What do you understand by over-dominance?
(vi) Write the pattern of inheritance of sex influenced traits.
(vii) What are restriction endonucleases? Give their functions.
(viii) Give the biotechnological uses of bacteria in mining.
(ix) What is gene therapy? Write at least one example.
(x) Write difference between habitat and niche.
(xi) Define climax community with one example.
(xii) Give the significance of predation.

4. Write short answers to any SIX (6) questions : 12

(i) What is grey crescent? Give its role.
(ii) How can aging be slowed down?
(iii) How do histone and DNA interact with each other in chromosome?
(iv) What is transforming principle?
(v) How is initiation complex formed in translation?
(vi) In what respect mitosis in plants differ from that of animal cell?
(vii) Differentiate between benign and malignant tumor.
(viii) State endosymbiont hypothesis with example.
(ix) What is meant by "Modern Synthesis"?

SECTION – II

Note : Attempt any THREE questions.

5. (a) Discuss osmoregulation in plants for their survival. 4
   (b) Define cell cycle and also give a detailed account of phases of interphase. 4

6. (a) Highlight the main points of that model which explains the muscle contraction. 4
   (b) Discuss important steps of nitrogen cycle. 4

7. (a) Describe the location, secretion and roles of thyroid gland. 4
   (b) State and explain Hardy-Weinberg theorem. 4

8. (a) Give details of menstrual cycle in human females. 4
   (b) Define law of independent assortment. Explain it with an example. 4

9. (a) What are growth correlations? Explain Apical Dominance, its removal and its applications. 4
   (b) Explain the methodology to carried out DNA finger-printing. 4