

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

(Academic Sessions 2017 – 2019 to 2019 – 2021)

BIOLOGY

221-(INTER PART – II)

Time Allowed : 20 Minutes

Q.PAPER – II (Objective Type)

GROUP – I

Maximum Marks : 17

PAPER CODE = 8463

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	Nissl's granules are group of : (A) Mesosomes (B) Lysosomes (C) Ribosomes (D) Chromosomes
2	Morphological characteristics of chromosomes are collectively called : (A) Karyotype (B) Neotype (C) Holotype (D) Phenotype
3	According to endosymbiont hypothesis, the aerobic bacteria developed into : (A) Ribosome (B) Lysosome (C) Mitochondria (D) Plastids
4	Establishment of new forests, where no forests existed before is called : (A) Reforestation (B) Afforestation (C) Deforestation (D) Desertification
5	Contractile vacuoles are found in : (A) Plants (B) Fresh water protozoa (C) Land animals (D) Land plants
6	Locus is : (A) Part of DNA (B) Position of gene (C) Partner of gene (D) Part of gene
7	The process of moulting is controlled by enzyme called : (A) Ecdysone (B) Aldosterone (C) Oxytocin (D) Androgen
8	Full cell cycle in yeast cells has length of : (A) 30 minutes (B) 60 minutes (C) 90 minutes (D) 120 minutes
9	The abiotic component of an ecosystem is : (A) Temperature (B) Producer (C) Consumer (D) Decomposer
10	Immediately after fertilization, the egg under goes some series of mitotic divisions called : (A) Morulla (B) Blastula (C) Gastrulation (D) Cleavage
11	In 1 gm of ammonia nitrogen requires how much water for excretion : (A) 50 ml (B) 100 ml (C) 200 ml (D) 500 ml
12	Hatching period of chick is : (A) 15 days (B) 20 days (C) 21 days (D) 25 days
13	Which one is the type of asexual reproduction : (A) Apomixes (B) Vernalization (C) Fertilization (D) Phototropism
14	DNA synthesis and chromosomal doubling occurs in : (A) G ₁ - phase (B) G ₂ - phase (C) G ₀ - phase (D) S - phase
15	Mature bone cells are called : (A) Osteoblast (B) Osteocytes (C) Osteoclasts (D) Chondrocytes
16	The enzyme which joins the two pieces of DNA is : (A) DNA ligase (B) DNA polymerase (C) Endo nuclease (D) Lipase
17	Which of the following is vestigial organ of whole : (A) Gills (B) Leg bones (C) Lungs (D) Pelvis and leg bones

SECTION – I

2. Write short answers to any EIGHT (8) questions : 16
- Differentiate between hydrophytes and mesophytes.
 - What are osmoconformers and osmoregulators animals?
 - How vasodilation differ from vasoconstriction?
 - Define ecdysis or moulting, give its two stages.
 - Differentiate between troponin and tropomyosin.
 - Give two functions of skeletal system.
 - Define seed dormancy. Write its two significance.
 - Define oviparous and viviparous animals.
 - What is profundal zone?
 - How many biomes are present in the World, name any four of them.
 - Differentiate between deforestation and reforestation.
 - Define eutrophication, give its one effect upon animal life.
3. Write short answers to any EIGHT (8) questions : 16
- Differentiate between kinesis and taxis.
 - Write the role of progesterone.
 - What is Addison's disease?
 - What is gene and its locus?
 - What is dihybrid cross?
 - Write dominant and recessive trait.
 - What are three possible ways to get a gene?
 - Write the role of Lambda phage as a vector.
 - Write any two uses of PCR.
 - What is Niche, explain according to Charles Elton?
 - What are decomposers?
 - Write crustose lichens in xerosere.
4. Write short answers to any SIX (6) questions : 12
- Define growth and development.
 - Define teratogens. Give two examples.
 - Draw structural formula of nucleotide.
 - Differentiate between leading strand and lagging strand.
 - Define transformation. In which bacterium it was discovered?
 - What are cancer cells? How cancer cells can be distinguished from normal cells?
 - What is meant by non-disjunction? Write its consequences.
 - Differentiate between homologous and analogous organs.
 - How the oxygen accumulation liberated during photosynthesis changed the environment of earth?

SECTION – II

Note : Attempt any THREE questions.

- (a) Give the homeostatic roles of liver in the form of a table. 4
- (b) Define ecosystem. Discuss its components and their interaction. 4
- (a) Write down four phases in the repair process of a fracture. 4
- (b) Write a note on genetic code. 4
- (a) Explain structure and function of forebrain in man. 4
- (b) Write a note on algal bloom or eutrophication. 4
- (a) Write a note on identical twins and fraternal twins. 4
- (b) Write a note on diabetes mellitus. 4
- (a) Describe the types of meristems. 4
- (b) Explain the evidences of evolution by fossil record and comparative anatomy. 4

(To be filled in by the candidate)

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BIOLOGY

221-(INTER PART – II)

Time Allowed : 20 Minutes

Q.PAPER – II (Objective Type)

GROUP – II

Maximum Marks : 17

PAPER CODE = 8464

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	The part of the brain which is best developed in birds : (A) Cerebellum (B) Medulla (C) Hippocampus (D) Pons
2	If the centromere is located in the middle of the chromosome it is called : (A) Metacentric (B) Sub metacentric (C) Telocentric (D) Acrocentric
3	The actual remains or traces of organisms that lived in the ancient geological times are called : (A) Analogous organs (B) Homologous organs (C) Vestigial organs (D) Fossils
4	The rain fall less than 25 to 50 cm is found in : (A) Desert (B) Grassland (C) Temperate deciduous forest (D) Tropical rain forest
5	The blood passing through glomerulus is filtered into : (A) Bowman's capsule (B) Ureter (C) Bladder (D) Urethra
6	The Ginkgo plant is : (A) Monoecious (B) Dioecious (C) Triecious (D) Polyecious
7	In plant cell turgor pressure is generated by : (A) Cell wall (B) Cell membrane (C) Mitochondria (D) Vacuole
8	XYY condition is found in : (A) Patau (B) Edward (C) Turner (D) Jacobs
9	In Pakistan grassland ecosystem is found in : (A) Kara Koram (B) Shogran (C) Malam Jabba (D) North Kallat
10	In the development of chick the 24 hours embryo is called : (A) Morulla (B) Gastrula (C) Blastula (D) Neurula
11	The hormone which actively transport water from filtrate in collecting tubules back to kidney is : (A) Aldosterone (B) ADH (C) Testosteron (D) Oxytocine
12	Healing of fracture and repair of the skin wound is example of : (A) Meiosis (B) Regeneration (C) Development (D) Necrosis
13	The follicle cells after release of the egg are modified to form special structure called : (A) Follicle atresia (B) Corpus luteum (C) Uterus (D) Placenta
14	The stage which may lasts for days, weeks or even years is : (A) Leptotene (B) Zygotene (C) Pachytene (D) Diplotene
15	Which one of the following is a facial bone : (A) Frontal (B) Occipital (C) Vomer (D) Sternum
16	The patients lack a gene that code for trans-membrane carrier of the chloride ions : (A) Cancer (B) ADA (C) SCID (D) Cystic fibrosis
17	Which of the following is biotic factor : (A) Topography (B) Gravity (C) Soil energy (D) Decomposers

SECTION – I**2. Write short answers to any EIGHT (8) questions :**

16

- (i) Differentiate between osmoconformers and osmoregulators.
- (ii) Define uremia. What is its permanent treatment?
- (iii) Define pyrexia and pyrogens.
- (iv) Define Herniation of disc. How is it treated?
- (v) Differentiate between bone and cartilage.
- (vi) Give two modifications in the exoskeleton of arthropods.
- (vii) What is seed dormancy? Write its significance.
- (viii) Write the functions of sertoli cells and interstitial cells.
- (ix) Characterize limnetic zone and profundal zone of fresh water lake.
- (x) Write down the name of two dominant plants and two dominant animals of temperate deciduous forest.
- (xi) What is nutrient cycle? What is driving force behind these cycles?
- (xii) Write four effects of removal of forests.

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

16

- (i) What condition result due to hypo and hyper function of cortical hormones?
- (ii) Write the actions of nicotine on nervous and circulatory system.
- (iii) Define imprinting with the example of precocial birds.
- (iv) Differentiate between X-linked dominant and X-linked recessive traits.
- (v) Define monohybrids and dihybrids.
- (vi) Define linkage. Enlist linkage groups of chromosome no. 11 and 23.
- (vii) What do you know about palindromic sequence? Give an example.
- (viii) What are protoplasts? Give scientific name of biodegradable plastic.
- (ix) Give the process of coronary artery angioplasty briefly, using biotechnology.
- (x) Differentiate between food chain and food web.
- (xi) Define ammonification and nitrification.
- (xii) State parasitism and its significance.

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

12

- (i) Define apical meristem.
- (ii) What is inhibitory effect?
- (iii) Define transcription.
- (iv) Differentiate between heterochromatin and euchromatin.
- (v) What are three main components of a DNA?
- (vi) Differentiate between leptotene and zygotene.
- (vii) Explain Turner's syndrome.
- (viii) How genetic drift effect gene frequency?
- (ix) What are homologous organs?

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

5. (a) Explain the structure of nephron. 4
- (b) Describe predation and parasitism with their significance. 4
6. (a) Write a note on sclerenchyma cells and collenchyma cells. 4
- (b) Explain Watson and Crick Model of DNA. 4
7. (a) What is resting membrane potential? How is resting membrane potential maintained across neurolema? 4
- (b) Describe the importance of forests. 4
8. (a) Describe fruit set and fruit ripening in angiosperms. 4
- (b) What is X-linked recessive inheritance? Explain it with an example. 4
9. (a) Describe various types of meristems. 4
- (b) How did eukaryotes evolve from prokaryotes? 4