

Objective  
Paper Code  
**8465**

Intermediate Part Second - 103  
**BIOLOGY (Objective) GROUP - I**  
Time: 20 Minutes 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 the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.coa

FBD-91-22

S.#	Questions	A	B	C	D
1	In DNA structure are more strongly linked:	Adenine with thymine	Guanine with cytosine	Bases with sugar	All these
2	Intercalary meristems are situated at:	Root apex	Shoot apex	Top of internode	Base of internode
3	Germ layers are formed at:	Cleavage	Gastrulation	Organogenesis	Neurulation
4	The plants which are stimulated to flower by exposure to low temperature are said to have:	Vernalization	Parthenocarpy	Parthenogenesis	Apomixis
5	Adrenocorticotrophic hormone (ACTH) is secreted by:	Adrenal gland	Hypothalamus	Pituitary gland	Thyroid gland
6	Bone dissolving cells are:	Osteoblasts	Osteoclasts	Osteocytes	Chondrocytes
7	Disease in which bone resorption outpaces bone deposit:	Osteoporosis	Osteomalacia	Rickets	Spondylosis
8	Liver functions are pivotal to:	Osmo-regulation	Excretion	Homeostasis	Thermo-regulation
9	As CFCs rise to atmosphere, ultraviolet rays release:	Chlorine	Fluorine	Carbon	Hydrogen
10	The desert of Southern Punjab is:	Thal	Sahara	Thar	Cholistan
11	The conversion of nitrate to ammonium with in plant cell is called:	Ammonification	Nitrification	Assimilation	Denitrification
12	Prokaryotes have arisen more than:	1.5 billion years ago	2.5 billion years ago	3.5 billion years ago	4.5 billion years ago
13	If correct proportions of auxin and cytokinin are added in a liquid medium, thousands of copies of new shoots will develop from a single shoot tip by:	Protoplast culture technique	Meristem culture technique	Anther culture technique	Cell suspension technique
14	Which one of them is mostly used to develop transgenic animal?	Sanger method	Maxam Gilbert method	Particle gun method	Micro injection method
15	What is the risk of a haemophiliac child in a family when father is haemophiliac but mother is carrier?	All sons normal	All sons affected	All sons affected but all daughters normal	Half sons and half daughters affected
16	The actual decrease of chromosome number occur in:	Meiosis-I	Meiosis-II	Mitosis	Cytokinesis
17	Which tumor has branches:	Malignant	Benign	Both	None of these

313-XII132021-30000

**BIOLOGY (Subjective) GROUP - I**

Time: 02:40 Hours

Marks: 68

FRD-51-2

**SECTION - I**

2. Write short answers to any EIGHT parts. 16
- Distinguish between osmoconformers and osmoregulators.
  - Compare the nitrogen excreted in lower quantities with the one excreted in very small quantities.
  - Differentiate between protonephridium and metanephridium. Give examples.
  - What is vascular cambium? Which new tissues develop from it?
  - What is phototactic movement? Give example.
  - Define vertebral column. What names can be given to them according to their location?
  - Differentiate between identical and fraternal twins.
  - Which hormone is released by pituitary gland at puberty? Also define follicle atresia.
  - Write a note on profundal zone. Which organisms inhabit this zone?
  - Write the names of any eight animals which inhabit coniferous alpine and boreal forests.
  - Write a note on ocean thermal gradient.
  - Write any two factors which are responsible for modification of environment.
3. Write short answers to any EIGHT parts. 16
- Compare Addison's disease and Cushing's disease.
  - Give the role of midbrain in humans.
  - What are neurotransmitters? How acetylcholine is different from other neurotransmitters?
  - Why Mendel uses *Pisum sativum* (Garden Pea) in his experiments?
  - What is test cross? Write its significance.
  - What are multiple alleles?
  - What are restriction endonucleases? Give an example.
  - What is PCR? Write the role of taq polymerase.
  - What is gene therapy? What are its two methods?
  - How the relationship of predator and prey is maintained?
  - Compare primary and secondary succession.
  - Differentiate between autecology and synecology.
4. Write short answers to any SIX parts. 12
- Define neurulation. State events of neurulation and explain its significance.
  - What is morulla and blastula?
  - Interpret how many types of tRNA molecules are necessary for a living cell, if the genetic code is triplet code.
  - On the basis of position of centromere describe the four types of chromosomes.
  - Differentiate between point mutation and chromosomal mutation.
  - Describe the symptoms and causes of down syndrome.
  - Compare mitosis with meiosis.
  - How does fossil record provide evidence of evolution?
  - What is genetic drift?

<b>SECTION - II</b> Attempt any THREE questions. Each question carries 08 marks.
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5. (a) Explain the structure of nephron with the help of a diagram. 04  
 (b) What predation? Discuss its significance. 04
6. (a) How is support provided to those animals which lack a hard skeleton? Explain your answer with two examples. 04  
 (b) Describe the replication process of DNA in detail. 04
7. (a) Explain how reflex action prevent the body damage during emergency. 04  
 (b) Describe the importance of forest. 04
8. (a) Explain the process of birth in humans. 04  
 (b) Define diabetes and explain type-I in detail. 04
9. (a) Define growth correlation. Describe apical dominance in detail. 04  
 (b) Can the comparative anatomy and fossil record be discussed as evidence of evolution? Explain it. 04

Objective  
Paper Code  
**8462**

Intermediate Part Second  
**BIOLOGY ( Objective ) GROUP - II**  
Time: 20 Minutes Marks: 17

Roll No. : \_\_\_\_\_



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 the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.

FBD-42-22

S.#	Questions	A	B	C	D
1	The special excretory structures of terrestrial arthropods are called:	Nephridia	Protonephridia	Malpighian tubules	Nephrons
2	The plant tissues that lack secondary walls.	Parenchyma	Collenchyma	Sclerenchyma	Aerenchyma
3	How many pair of ribs are present in human rib cage?	Ten pairs	Twelve pairs	Six pairs	Twenty four pairs
4	The neurotransmitter that lie outside the central nervous system:	Adrenaline	Serotonin	Dopamine	Acetylcholine
5	The plant which is not a day neutral:	Tomato	Soya bean	Cucumber	Zea mays
6	The optimum temperature for maximum growth of plant is:	0 – 35 °C	25 – 30 °C	5 – 10 °C	10 – 15 °C
7	Grey equational cytoplasm give rise to:	Notochord & neural tube	Gut	Muscle cells	Larval epidermis
8	Each segment of DNA that is coiled around eight histone proteins:	Karyotype	Genotype	Phenotype	Nucleosome
9	In which syndrome the 21st pair of chromosome fails to segregate?	Klinefelter's syndrome	Turner's syndrome	Down's syndrome	Jacobs
10	In human cell the duration of G2 phase is:	10 hours	30 min	9 hours	4.5 hours
11	The chromosomes that carry its linked genes en bloc in the form of called:	Linkage groups	Linkage	Recombinants	Linked genes
12	The major goal of genetic engineer is to increase the efficiency of rubisco to introduce cycle:	C2 cycle	C4 cycle	C3 cycle	C6 cycle
13	The example of vestigial organ is:	Nose	Hairs	Bones	Vermiform appendix
14	The profession or job of any organism in their ecosystem called:	Ecology	Niche	Autecology	Synecology
15	The overall weather patterns are known as:	Climate	Weather	Humidity	Precipitation
16	The last biome seen before reaching the polar ice caps is:	Taiga	Boreal	Arctic tundra	Desert
17	Nuclear power station can last only for years:	10 years	20 years	30 years	40 years

314-XII122-3000

**BIOLOGY (Subjective) GROUP - II**

Time: 02:40 Hours

Marks: 68

FBD-92-22

**SECTION - I**

2. Write short answers to any EIGHT parts. 16
- How are xerophytes adapted to survive in dry environment?
  - What are the structural differences between protonephridium and metanephridium?
  - Describe the procedure adopted to remove kidney stones.
  - Differentiate between heartwood and sapwood.
  - What is sciatica?
  - What do you know about antagonistic arrangements of muscles?
  - What is the location and function of Sertoli cells in the male reproductive system of man?
  - Describe the process of generation of labour pain in human females.
  - What do you know about deserts of Pakistan?
  - Describe the profundal zone in fresh water lakes.
  - What is algal bloom?
  - Define soil and write its composition.
3. Write short answers to any EIGHT parts. 16
- How does the nervous system of hydra differ from planaria? Give any two differences.
  - Which part of the hind brain controls body movements and maintains the position of the body?
  - Write the effects of over-secretion and under-secretion of somatotropin hormone.
  - What are multiple alleles?
  - What is meant by a genic system?
  - What are sex-limited traits?
  - What are restriction enzymes?
  - What is the significance of Taq polymerase enzyme?
  - What is gene pharming?
  - Differentiate between autecology and synecology.
  - What is ammonification?
  - What are decomposers? Give their significance in an ecosystem.
4. Write short answers to any SIX parts. 12
- Why are morphogenetic determinants essential in gene selection?
  - Discuss the concept of differentiation.
  - Why is CsCl used for ultracentrifugation?
  - Discuss the properties of DNA Polymerase-III.
  - Discuss the findings of Archibald Garrod in certain genetic diseases.
  - Discuss the importance of meiosis.
  - What are events of cell death?
  - What is artificial selection?
  - What is the difference between endangered species and threatened species?

**SECTION - II** Attempt any THREE questions. Each question carries 08 marks.

5. (a) Write a detailed note on excretion in earthworm with the help of a diagram. 04  
(b) Explain the principle stages of the nitrogen cycle. Draw the nitrogen cycle as well. 04
6. (a) Justify the division of joints on the basis of their structure. 04  
(b) How does DNA encode protein structure? Discuss with special reference to the central dogma of molecular biology. 04
7. (a) How does insulin depress blood glucose levels. Also discuss diabetes mellitus. 04  
(b) Describe the importance of forests. 04
8. (a) Describe the events of the menstrual cycle and explain its hormonal regulation. 04  
(b) Discuss the Rh-blood group system in man. 04
9. (a) Write a note on differentiation in plants. 04  
(b) Discuss any two factors affecting gene frequency. 04