

**AJK-21**

Fictitious Roll No. (For Office Use)

Sign. Dy. Supdnt.

Sign. Candidate

BIOLOGY
(PART -II)
(OBJECTIVE PART)021/1
(INTERMEDIATE)
(*)**

(Smart Syllabus)

Marks : 17

Time : 20 Minutes

Note:- Write your Roll No. in space provided. Over writing, cutting, using of lead pencil will result in loss of marks. All questions are to be attempted.

1- Each question has four possible answers, Tick () the correct answer. (17)

| | | | | | | | |
|----|--|---|-----------------------------|---|----------------------------|---|------------------------------|
| 1 | Condensation of chromosomes reaches to its maximum during; | | | | | | |
| A | Diakinesis | B | Diplotene | C | Pachytene | D | Zygotene |
| 2 | Insulin gene is located on short arm of chromosome; | | | | | | |
| A | 7 | B | 9 | C | 11 | D | 19 |
| 3 | EcoR1 is used as; | | | | | | |
| A | Vector | B | Expression system | C | Restriction enzyme | D | Gene of interest |
| 4 | In fish, the gill pouches develop into; | | | | | | |
| A | Gills | B | Pharynx | C | Eustachian tube | D | Fins |
| 5 | All food chains and food webs begin with; | | | | | | |
| A | Primary consumers | B | Secondary consumers | C | Tertiary consumers | D | Producers |
| 6 | In temperate grasslands, the rate of primary productivity is annually; | | | | | | |
| A | 4000 g/m ² | B | 700 - 1500 g/m ² | C | 500 - 700 g/m ² | D | 2000 - 2500 g/m ² |
| 7 | The cause of stone cancer is; | | | | | | |
| A | Green house effect | B | Water pollution | C | Acid rain | D | Ozone depletion |
| 8 | Liver synthesizes; | | | | | | |
| A | Iron | B | Glycogen | C | Glucose | D | Bile |
| 9 | In juxtamedullary nephrons, addition capillaries extend down to form; | | | | | | |
| A | Peritubular capillaries | B | Vasa recta | C | Glomerulus | D | Loop of Henle |
| 10 | Vertebral column extends from skull to which region; | | | | | | |
| A | Neck | B | Thorax | C | Pelvis | D | Lumber |
| 11 | The disease which causes the fusion and immobility of vertebral joints is; | | | | | | |
| A | Spondylolysis | B | Sciatica | C | Rickets | D | Osteomalcia |
| 12 | Chemical nature of insulin and glucagon is; | | | | | | |
| A | Proteins | B | Amino acid derivatives | C | Steroids | D | Polypeptides |
| 13 | Germinating pollen grain is a rich source of; | | | | | | |
| A | Ethene | B | Gibberellins | C | Cytokinins | D | Auxins |
| 14 | In chick, the egg is fertilized as it passes through its; | | | | | | |
| A | Shell gland | B | Cloaca | C | Kidney | D | Liver |
| 15 | Acetabularia is a/an; | | | | | | |
| A | Fungus | B | Alga | C | Fern | D | Gymnosperm |
| 16 | In bacteria, human and all living organisms, AGA specifies; | | | | | | |
| A | Phenylalanine | B | Leucine | C | Methionine | D | Arginine |
| 17 | A period of extensive metabolic activity in which cell grows in size is; | | | | | | |
| A | G ₁ | B | G ₁ | C | G ₂ | D | S |

Note:- Attempt any TWENTY TWO (22) short questions in all selecting eight from Q. 2 and Q. 3 each and six from Q. 4. (22 x 2 = 44)

SECTION – I

2- Write short answers of any eight questions. (2 x 8 = 16)

| | | | |
|----|--|----|--|
| 1 | What do you mean by Homeostasis? | 2 | What are xerophytes? Write their adaptations. |
| 3 | Differentiate between Osmoconformers and Osmoregulators. | 4 | What are collenchyma cells? |
| 5 | What is ribcage? | 6 | Name the types of cells associated with bones. |
| 7 | What is menopause? At what age it starts? | 8 | Define parthenocarpy with examples. |
| 9 | What are planktons? Give their types. | 10 | What do you mean by taiga? |
| 11 | What is ozone layer? Give its advantage. | 12 | What is acid rain? |

3- Write short answers of any eight questions. (2 x 8 = 16)

| | | | |
|----|---|----|--|
| 1 | What are the commercial applications of Auxin? | 2 | What is Neuroglia? Give its role. |
| 3 | Name the Hormones secreted by pancreas and their role. | 4 | What is Gene linkage? |
| 5 | Define Gene and Locus. | 6 | What are Sex-linked traits? |
| 7 | Compare Ex-vivo gene therapy with in-vivo gene therapy. | 8 | What are three possible ways to get a gene of interest for gene cloning? |
| 9 | Discuss Sanger's Method of Gene sequencing. | 10 | Define ecosystem. |
| 11 | Write down the significance of Root Nodules in plants. | 12 | Define parasitism and give one example. |

4- Write short answers of any six questions. (2 x 6 = 12)

| | | | |
|---|----------------------------------|---|-------------------------------------|
| 1 | What are lateral meristems? | 2 | Explain regeneration in Salamander. |
| 3 | Name four types of Chromosomes. | 4 | What are Okazaki fragments? |
| 5 | What are non sense codons? | 6 | Write a note on Diakinesis. |
| 7 | What is Turner's Syndrome? | 8 | What is Genetic drift? |
| 9 | Explain Endosymbiont Hypothesis. | | |

SECTION – II

Note:- Attempt any three questions. (3 x 8 = 24)

- 5- (a) Describe the role of liver as a major homeostatic organ. (04)
 (b) Describe parasitic and mutualistic relationships in an ecosystem. (04)
- 6- (a) Define Antagonism. Discuss the phenomenon with the example of elbow joint. (04)
 (b) Define transcription. Discuss the detailed steps in prokaryotes. (04)
- 7- (a) Explain Feedback Mechanism. (04)
 (b) Write note on importance of Forests. (04)
- 8- (a) Explain about "Seed Dormancy". (04)
 (b) Define and explain Mendel's Law of Segregation. (04)
- 9- (a) What is regeneration? Explain it with the help of examples in different groups of animals. (04)
 (b) Describe Biogeography and molecular biology as an evidence of evolution. (04)

(The End)