

MODEL PAPER “BIOLOGY”
Intermediate Part-II Examination, 2008 & Onward

Roll No.
In Figures _____
In Words _____

OBJECTIVE

Time: 20 Minutes

Marks: 17

Note: Write your Roll No. in the space provided. Over-writing, Cutting, Erasing, Using lead pencil will result in loss of marks.

Q.No.7. Each question has four possible answers. Choose the correct Answer and encircle it. 17

- (i) The protection of internal environment from the harms of the fluctuations in external environment of an organism is termed:
(a) osmosis (b) apoptosis (c) homeostasis (d) anhydrobiosis
- (ii) The number of bones in our wrist is:
(a) 5 (b) 4 (c) 7 (d) 8
- (iii) Fibers are included in.
(a) collenchyma (b) parenchyma
(c) sclerenchyma (d) chlorenchymes
- (iv) Cerebral hemispheres communicate with each other by:
(a) pons (b) medulla (c) corpus callosum (d) thalamus
- (v) Loss of Na⁺ ions through kidney is conserved by :
(a) parathormone (b) aldosterone
(c) testosterone (d) adrenaline
- (vi) Organisms produced by culturing single cells are:
(a) apomicts (b) drones (c) twins (d) clones
- (vii) Post fertilization development of endosperm:
(a) Gymnosperms (b) Pteridophytes
(c) Angiosperms (d) Bryophytes
- (viii) Environmental factors causing abnormal development are:
(a)carcinogens (b) toxins (c) mutagens (d) teratogens
- (ix) The genetic code not related to others:
(a) AUG (b) UGA (c) UAA (d) UAG
- (x) Separation of homologous chromosomes takes place:
(a) Interphase (b) Metaphase-I (c) Anaphase-I (d) telophase
- (xi) Heterozygote exceeds in quantity the phenotypic expression of both the homzygotes:
(a) Co-dominant (b) Over dominant
(c) Incomplete dominant (d) Complete dominant
- (xii) Sex linkage in Drosophila was discovered by:
(a) Sutton (b) Mendel (c) Wastson (d) Morgan

- (xiii) To search a genetic library for a certain gene scientists use:
(a) RNA- Polymerase (b) DNA- Ligase
(c) DNA- Polymerase (d) a Probe
- (xiv) Cystic fibrosis patients lack a gene that codes for trans-membrane carrier of:
(a) Calcium ion (b) Sodium ion
(c) Chloride ion (d) Potassium ion
- (xv) A species in imminent danger of extinction throughout its range is called:
(a) declared extinct (b) threatened
(c) endangered (d) conserved
- (xvi) Loss of nitrates from the soil takes place by:
(a) soil erosion (b) fire (c) certain soil bacteria (d) All these
- (xvii) The most fragile of all the biomes is:
(a) Desert ecosystem (b) grassland ecosystem
(c) Tundra ecosystem (d) Taiga ecosystem

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SUBJECTIVE

Time: 2:40 Hours

Marks: 68

Note: - Attempt any TWENTY TWO (22) questions from Section -I and any THREE questions form Section-II

SECTION -I

Q.No.1. Attempt any TWENTY TWO (22) questions.

(22x2)=44

- (i) What is the difference between ectotherms and endotherms?
- (ii) Compare osmoconformers with osmoregulators.
- (iii) Write two functions of the liver.
- (iv) What is the difference between heartwood and sapwood?
- (v) What is a cartilage?
- (vi) Explain the skeleton of Earthworm.
- (vii) What is the practical application of 2,4D?
- (viii) What is a neurotransmitter?
- (ix) What is the role of TSH?
- (x) Explain the importance of seed Dormancy.
- (xi) What is parthenogenesis?
- (xii) Differentiate between the gametes and gamete formation in human male and female.
- (xiii) What do you now about Test Tube Babies?
- (xiv) Differentiate between growth and development.
- (xv) Differentiate between blastocoel and neurocoel.
- (xvi) Explain two causes of aging.
- (xvii) What is a nucleosome?
- (xviii) What are the following scientists famous for?
(a) Griffith (b) Franklin & Wilkins
- (xix) What is sickle cell anemia?
- (xx) Give a diagrammatic expression of cell cycle.
- (xxi) What is the importance of pachytene?
- (xxii) Explain Mongolism.
- (xxiii) What is meant by F_1 & F_2
- (xxiv) Is there any role of antosomes in sex-determination in *Drosophila*?
- (xxv) Explain Testicular feminization syndrome.
- (xxvi) What are molecular scissors?
- (xxvii) What are the advantages of the PCR amplification and analysis?
- (xxviii) What is relationship of luciferase gene with Tobacco plant?

- (xxix) Explain endosymbiont hypothesis about the evolution of eukaryotic cell.
- (xxx) Compare divergent evolution with convergent evolution.
- (xxxii) How does genetic drift change gene frequency?
- (xxxii) Differentiate between macronutrients and micronutrients.
- (xxxiii) What do you know about environmental buffers?

SECTION -II

Note: - Attempt any THREE questions.

(8x3)=24

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| Q.No2. | Describe the structure and function of a sarcomere. | 8 |
| Q.No3. | Write an essay on nerve impulse. | 8 |
| Q.No4. | Describe the mechanism of Transcription and Translation. | 8 |
| Q.No5. | Define Mendel's Law of independent Assortment. Explain it with the help of an example | 8 |
| Q.No6. | (a) Explain Hardy-Weinberg theorem | 4 |
| | (b) Give the importance of Transgenic bacteria. | 4 |