

Biology

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(To be filled in by the candidate)

HSSC (12th) 2nd Annual 2022

Time : 2:40 Hours

Paper : II

Subjective

Marks : 68

Note:- Section B is compulsory. Attempt any 3 questions from Section C.

SECTION-B

2. Write short answers to any Eight parts.

(8 x 2 = 16)

- i. Write any two adaptations of xerophytes for reduced rate of transpiration.
- ii. Differentiate between endotherms and ectotherms.
- iii. Compile the mechanism for production of concentrated urine.
- iv. What are cartilaginous joints? Give an example.
- v. What is ecdysis? How it is controlled?
- vi. Give the role of testosterone (at least 2 points)
- vii. Give the role of Vascular Cambium in secondary growth.
- viii. Interpret the method of test tube babies.
- ix. Write two adaptations in plants and animals for terrestrial ecosystem.
- x. Narrate rainfall and plant life of desert ecosystem.
- xi. Differentiate between renewable and non-renewable resources.
- xii. Differentiate between reforestation and afforestation.

3. Write short answers to any Eight parts.

(8 x 2 = 16)

- i. How nicotine interacts with the normal nervous activity?
 - ii. What happens when an impulse reaches a synaptic knob?
 - iii. How the secretion of Insulin is controlled?
 - iv. A man who has type "B" blood and a woman who has type "A" blood, could have children of which blood type?
 - v. In monohybrid cross why did only about one fourth of Mendel's F₂ plants exhibit the recessive trait?
 - vi. What are sex limited traits?
 - vii. Why urine is preferred to isolate biotechnology products than milk?
 - viii. Write two applications of PCR.
 - ix. What steps are involved to produce recombinant DNA?
 - x. How Biogeochemical cycles maintain the fertility of soil.
 - xi. Define Autecology with the help of an example.
 - xii. Differentiate between Biomes and Biosphere.
- #### 4. Write short answers to any Six parts.
- (6 x 2 = 12)
- i. Compare gastrulation and organogenesis
 - ii. How inhibiting effect and compensatory effect are caused?
 - iii. Give karyotype application in species recognition.
 - iv. Define mutations. What are mutants?
 - v. How are the information in a DNA shifted to RNA? Also mention role of RNA polymerase?
 - vi. What is mitotic apparatus? What is its role during cell division?
 - vii. What changes occur in pachytene stage of meiosis?
 - viii. What is inheritance of acquired characters and who proposed it?
 - ix. What are vestigial organs? Quote example.

SECTION-C

(EACH QUESTION CARRIES EIGHT (8) MARKS)

- 5.(a) Describe osmoregulation in the animals of marine environment. 4
(b) Write a note on predation and parasitism. 4
6. (a) How the support is gained in plants? 4
(b) Explain One-gene/ One-polypeptide hypothesis? 4
7. (a) Comprehend the orientation of movements of various ions across neuronal membrane during depolarization and repolarization. 4
(b) Write a note on Acid Rain. How does it affect on ecosystem. 4
8. (a) Explain various steps involved in human female reproductive cycle. 4
(b) Describe genetics of colour blindness with the help of pedigree diagram? 4
9. (a) What is embryonic induction? Explain this phenomenon. 4
(b) What are endangered species? Is there any role of human being in their extinction? 4

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