

Roll No.

(To be filled in by the candidate)

Biology**H.S.S.C (12th)-A-2022**

Time : 20 Minutes

Paper : II

Objective – (iv)

Marks : 17

Paper Code 8 4 6 7 **522-22**

Note: - You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number in your answer book. Use marker or pen to fill the circles. Cutting or filling up two or more circles will result no mark.

SECTION-A

| Q.1 | Questions | A | B | C | D |
|-----|--|---|--|--------------------------------------|--|
| 1. | During pachytene: | Pairing of homologous chromosomes start | Pairing of homologous chromosomes is completed | Paired chromosomes start to separate | Separation of chromosomes is completed |
| 2. | What type of ratio 1:2:1 is? | Genotypic ratio of monohybrid cross | Phenotypic ratio of monohybrid cross | Genotypic ratio of dihybrid cross | Phenotypic ratio of dihybrid cross |
| 3. | Reverse transcription yields: | mRNA | cDNA | rDNA | tRNA |
| 4. | The use of PROBE is: | To study palindromic sequence | To study bacterial plasmids | To study phage DNA | To search genomic library |
| 5. | The change in allele frequency which occurs by chance is: | Genetic drift | Emigration | Immigration | Mutation |
| 6. | The actual location of an organism is called its: | Niche | Habitat | Behavior | Environment |
| 7. | Succulent plants are found in: | Alpine forests | Grassland | Desert | Deciduous forest |
| 8. | Which one is an environmental buffer? | Ocean | River | Desert | Forest |
| 9. | Urine leaves the kidney through: | Urethra | Ureter | Renal pelvis | Ureteral orifice |
| 10. | Which of these move first leading to the exosmosis of water during rapid movements? | Cl ⁻¹ ions | NH ₄ ⁺¹ ions | K ⁺¹ ions | Ca ⁺² ions |
| 11. | To which region of vertebral column, tetrapod's pelvic girdle is attached? | Lumber region | Sacral region | Pelvic region | Cervical region |
| 12. | Which of these commercially produced hormone promotes malting? | GA ₃ | GA | 2,4 D | N.A.A |
| 13. | Which of these differentiates into mature sperms in human male? | Spermatogonia | Primary spermatocytes | Secondary spermatocytes | Spermatids |
| 14. | Inhibitory effect of lateral shoots is caused by: | Abscisic acid | Gibberellins | Ethene | Auxins |
| 15. | Notochord is seen in the chick embryo of: | 24 hrs. | 22 hrs. | 20 hrs. | 18 hrs. |
| 16. | How many codons specify the amino acid leucine? | 2 | 4 | 6 | 3 |
| 17. | During cytokinesis in animal cells, actin and myosin form contractile ring which is then followed by the formation of: | Equatorial plate | Cleavage furrow | Phragmoplast | Cell plate |

Biology**H.S.S.C (12th)-A-2022**

Time : 2:40 Hours

Paper : II

Subjective **SwL-22**

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. Discuss adaptations of animals in terrestrial ecosystem.
- ii. What are excretophore?
- iii. Draw the sketch of Urea Cycle.
- iv. What is spondylosis?
- v. Explain all or none response of muscle fiber.
- vi. Discuss locomotion in Mammals?
- vii. What are Gonadotrophins? Give their roles in male and female.
- viii. Define afterbirth.
- ix. Differentiate between alpine and boreal forests.
- x. Discuss the soil condition of the grassland ecosystem.
- xi. Give different ways of energy conservation.
- xii. What is acid rain?

3. Write short answers to any Eight parts. (8 x 2 = 16)

- i. Differentiate between chemoreceptors and thermoreceptors.
- ii. Which receptors respond to the mechanical conditions of the internal organs? Give examples.
- iii. What happens when an impulse reaches a synaptic knob?
- iv. What is a gene pool?
- v. Write about over dominance.
- vi. Narrate epistasis.
- vii. What are restriction enzymes, who isolated them?
- viii. How transgenic bacteria promote health of plants? Give example.
- ix. Define examine method of Gene Therapy.
- x. Differentiate between population and community.
- xi. Write a note on biotic components.
- xii. How micronutrients differ from macronutrients?

4. Write short answers to any Six parts. (6 x 2 = 12)

- i. What is parthenocarpy? How it can be used commercially?
- ii. How fraternal twins are produced?
- iii. What is a nucleosome? Why histones are positively charged?
- iv. Define transformation. Who discovered this phenomenon?
- v. Compare Okazaki fragments of prokaryotes and eukaryotes.
- vi. Draw ultrastructural features of cell death by apoptosis.
- vii. Give chromosomal make up and symptoms of Turner's Syndrome.
- viii. State theory of special creation.
- ix. What is meant by endosymbiont hypothesis? Who proposed this hypothesis?

SECTION-C**(EACH QUESTION CARRIES EIGHT (8) MARKS)**

- 5.(a) Explain excretion in Cockroach with diagram. **4**
- (b) Discuss important steps of Nitrogen Cycle. **4**
6. (a) How is human skeleton deformed by trauma? Justify your answer using special reference of disc slip. **4**
- (b) What are mutations? How are they classified? **4**
7. (a) How is growth affected by STH, thyroxine and adrenal hormones of human endocrine system? **4**
- (b) Explain the reasons of Ozone layer depletion. **4**
8. (a) Describe the process of birth in human female. **4**
- (b) What is diabetes mellitus? Discuss diabetes type I disease. **4**
9. (a) What is differentiation? Explain its phenomenon in the formation of different structure of the body. **4**
- (b) How Prokaryotes evolved into Eukaryotes? Discuss the different hypothesis in this type of evolution. **4**