

2010



Roll No.

Answer Sheet No.

Sig. of Candidate. _____

Sig. of Invigilator. _____

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BIOLOGY HSSC-II
SECTION - A (Marks 17)

Time allowed: 25 Minutes

NOTE:- Section-A is compulsory. All parts of this section are to be answered only. It should be completed in the first 25 minutes and handed over to the invigilator. Deleting/overwriting is not allowed. Do not use lead pencil.

- Q. 1 Circle the correct option i.e. A / B / C / D. Each part carries one mark.**
- (i) Classify the category of Brassica with respect to different Habitats.
A. Halophytes B. Xerophytes C. Hydrophytes
 - (ii) Which of the following excretory products needs maximum water for its elimination?
A. Ammonia B. Urea C. Uric Acid D. Creatinine
 - (iii) Which of the following is a direct source of energy for muscle contraction?
A. ATP B. Creatine phosphate
C. Both A and B D. Lactic acid
 - (iv) Sarcolemma is a term used in the structure of _____
A. Bone B. Cartilage C. Muscle fibre D. All of these
 - (v) Muscle fatigue occurs after strenuous exercise due to _____
A. CO_2 B. Ethyl Alcohol C. Acetic Acid D. Accumulation of Lactic Acid
 - (vi) Jet aeroplanes fly in the air due to jet propulsion mechanism. Which of the following animals move on this pattern?
A. Snail B. Paramecium C. Jelly fish D. Silver fish
 - (vii) A plant Hormone that promotes cell enlargement in region behind apex of a shoot _____
A. Auxins B. Gibberellins C. Cytokinins D. Ethene
 - (viii) Human body temperature is co-ordinated and controlled by _____
A. Hypothalamus B. Thalamus C. Cerebrum D. Cerebellum
 - (ix) Grave's disease with ex-opthalmic goiter and increase in the basal metabolic rate occurs due to the excessive production of _____
A. Thyroxine B. Parathormone C. ADH D. Adrenaline
 - (x) A snail crawling on a sheet of glass retracts into its shell when glass is tapped. What is this type of learning behaviour called?
A. Imprinting B. Habituation C. Latent Learning D. Insight Learning
 - (xi) The Reptiles that lay shelled eggs to protect their developing embryos from harsh terrestrial conditions are called _____
A. Viviparous B. Oviparous C. Ova-Viviparous D. All of these
 - (xii) Neurula is the stage in which embryo has _____
A. Blastocoele B. Neural tube C. The germ layer D. Archenteron
 - (xiii) Which American scientist presented the chromosomal theory of inheritance?
A. Karl Correns B. W. Sutton C. T.H. Morgan D. Mendel
 - (xiv) In man if autosomal non-disjunction occurs at the 21st-chromosome, it is considered as _____ syndrome.
A. Down's B. Patau's C. Edward's D. Turner's
 - (xv) The fruit fly has eight chromosomes in their somatic cells. Which of the figures shows diploid homologous chromosomes in the cells of female fruit fly?



Cell-1



Cell-2

- A. Cell-1
 - B. Cell-2
 - C. Both Cell-1 and Cell-2
 - D. None of these
- (xvi) A transgenic tobacco plant glows when introduced with firefly enzyme _____ in its protoplast during tissue culture.
A. Luciferase B. Ligase C. Polymerase D. Endonuclease
- (xvii) Who presented the theory of evolution in 1809?
A. Mendel B. Malthus C. Darwin D. Lamarck

For Examiner's use only:

Total Marks:

17

Marks Obtained:



BIOLOGY HSSC-II

Time allowed: 2:35 Hours

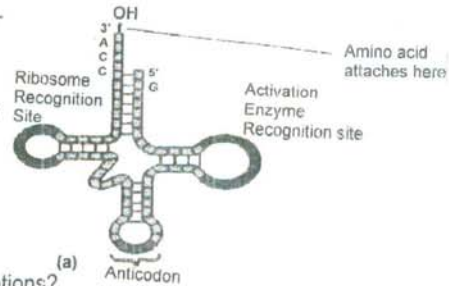
Total Marks

NOTE:- Answer any fourteen parts from Section 'B' and any two questions separately provided answer book. Use supplementary answer sheet. Write your answers neatly and legibly.

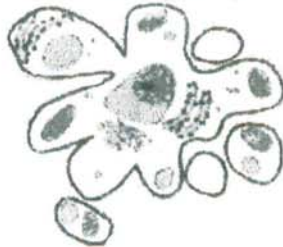
SECTION – B (Marks 42)

Q. 2 Attempt any FOURTEEN parts. The answer to each part should not exceed

- (i) Write down any three major Homeostatic functions of the liver.
- (ii) Differentiate among Ammonotelic, Ureotelic, Uricotelic animals.
- (iii) Define the following:-
 - a. Geotropism
 - b. Digitigrade
 - c. Secondary growth
- (iv) The skeleton is the tough and rigid frame work of the body of animals. Write down any two functions of the skeletal system.
- (v) What is Tetany?
- (vi) The following diagram is the structure of RNA:-
 - a. Name the type of RNA.
 - b. What is the main function of this type of RNA?
 - c. What is the significance of Anticodon?



- (vii) What do you know about Chromosomal aberrations?
- (viii) Write a short note on Gastrin.
- (ix) Define the following:-
 - a. Neuron
 - b. Synapse
 - c. Feedback Mechanism
- (x) How are the identical twins different from Fraternal twins or triplets?
- (xi) Define Parthenogenesis. Write briefly about the diploid parthenogenesis.
- (xii) With reference to the given figure, answer the following questions:-



- Nuclear Fragmentation
- Blebbing
- Cell fragmentation

- a. Identify the type of cell death.
- b. Mention the role of Phagocyte cells.
- c. Define the type of cell death.
- (xiii) Differentiate between IDDM and NIDDM types of diabetes. Which type is called Juvenile diabetes? Also write the cause of the IDDM type of diabetes.
- (xiv) Compare Gene linkage and Crossing over.
- (xv) What is Pleiotropy? Also give one example.
- (xvi) Evolution refers to the processes that have transformed life on Earth. Discuss the role of Homologous and Analogous organs towards the Convergent and Divergent Evolution.
- (xvii) What is Genomic Library?
- (xviii) Name three zones in Lake Ecosystem with reference to life in profundal zone.
- (xix) What is Acid rain? Write down any four harmful effects of the Acid Rain.

SECTION – C (Marks 26)

Note:- Attempt any TWO questions. All questions carry equal marks.

(2 x 13 = 26)

- Q. 3 Living organisms depend on various Bio-geo-chemical cycles:-
 - a. Write a detailed note on the Nitrogen Cycle.
 - b. What is Parasitism? Also write its significance.
 - c. Explain Neo-Darwinsim.
- Q. 4
 - a. Define Nerve impulse. Explain its initiation and the factors involved in changing it from resting to active membrane potential.
 - b. Write a note on Parkinson's disease.
 - c. What is Imprinting?
- Q. 5 Mendel laid the foundation of classical genetics by giving the Laws of Heredity.
 - a. Define Mendel's Law of segregation.
 - b. Explain test cross with its significance.
 - c. What is the method of preparation of Recombinant DNA (Chimaeric DNA)?