Roll No: | | | | | | | Answer Sheet No: _____

Signature of Candidate: _____ Signature of Invigilator: _____

Federal Board HSSC-I Examination
Biology Model Question Paper

SECTION – A

Time allowed: 30 minutes Marks: 17

Note: Section-A is compulsory and comprises pages 1-4. All parts of this section are to be answered on the question paper itself. It should be completed in the first 30 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

Q.1 Encircle the correction option i.e. A / B / C / D / E. All parts carry equal marks.

i. Dengue fever is spreading as a fatal disease of humans. Effective control of this disease can be achieved by:

A. Virology B. Gene therapy
C. Environmental biology D. Biotechnology
E. Integrated disease management

ii. The group of Birds evolved in the:

A. Proterozoic era B. Palaeozoic era
C. Mesozoic era D. Cenozoic era
E. Cambrian era

iii. Carbon atom can combine with four atoms or radicals because it is:

A. Polyhedral B. Bivalent
C. Trivalent D. Tetravalent
E. Pentavalent

iv. Cellulose is a polysaccharide found in plant cell wall. Its solubility and Iodine test results are:

A. Soluble in water; Blue color with Iodine solution
B. Insoluble in water; No change in color with Iodine solution
C. Insoluble in water; Red color with Iodine solution
D. Soluble in water; No change in color with Iodine solution
E. Soluble in water; Purple color with Iodine solution

v. The rate of an enzyme catalyzed reaction:

A. Is constant under all conditions B. Cannot be measured
C. Is not affected by pH D. Decrease as temperature decrease
E. Decreases as substrate concentration increases

vi. If substrate is added to enzyme in optimum conditions, but no reaction happens: What could be the reason?

A. Inhibition B. Saturation
C. Denaturation D. Catalysis
E. Activation

DO NOT WRITE ANYTHING HERE

vii. Modifications of proteins and lipids as glycopeptides and lipo-proteins occur in:

A. Ribosome
B. Golgi apparatus
C. SER
D. RER
E. Mitochondria

viii. Which of the following pairs of structure-function is mismatched?

A. Microtubules-Spindle fiber formation
B. Intermediate filaments-Muscle contraction
C. Vacuoles-Turgidity in plants
D. Centrioles-Mitosis
E. Nucleolus-Ribosome formation

ix. A Prion is a/an:

A. Infectious protein
B. Viral protein
C. Viral DNA
C. Viral RNA
D. Infectious virus

x. Which one of the following is not a viral disease?

A. Cow pox
B. Small pox
C. Mumps
D. Tetanus
E. Polio

xi. The smallest Bacterion is approximately the size of the largest virus i.e:

A. Adenovirus
B. Paramyxovirus
C. Pox virus
D. Parvovirus
E. Polio virus

xii. Bacterial grow most rapidly in:

A. Lag phase
B. Log phase
C. Stationary phase
D. Death phase
E. Immunization

xiii. Most Ciliates are capable of sexual reproduction by a process called:

A. Mating
B. Transformation
C. Oogamy
D. Copulation
E. Conjugation

xiv. Multicellular algae which contain Phycoerythrin are:

A. Dinoflagellates
B. Diatoms
C. Brown algae
D. Red algae
E. Green algae

xv. The absorptive nutrition of Fungi is aided by:

A. Spore formation
B. Parasitic nature
C. Fruiting body formation
D. Haploid nucleus
E. Large surface area to volume ratio

xvi. Poisonous mushroom can cause death on consumption. They include:

A. Rhizopus
B. Yeast
C. Penicillium
D. Amanita
E. Mycorrhiza

xvii. In Mosses like Funaria, the sporophyte generation is:

A. Green
B. Independent
C. Dependent
D. Prominent
E. Thalloid

xviii. Double fertilization in Angiosperms results in the formation of:

A. Oospore & Endosperm
B. Zygote & Endosperm
C. Zygote & Sperm
D. Zygote & Oospore
E. Zygote & Cotyledon

xix. Which of the following characteristics is not found in Deuterostomes?

A. Blastopore forms anus
B. Mesoderm from gut
C. Blastopore forms mouth
D. Radial cleavage
E. Enterocoelous

xx. Swim bladder is absent in Chondrichthyes but they maintain their floating capability with the help of:

A. Cartilagenous skeleton
B. Placoid scales
C. Uncovered gills
D. Large fins
E. Small size

xxi. Chlorophyll molecule is embedded in the Thylakoid membrane with the help of:

A. Phytol chain
B. Porphyrin ring
C. Pyrrole ring
D. Magnesium atom
E. Nitrogen atom

xxii. How many molecules of NADH are produced when a glucose molecule is completely oxidized to CO_2?

A. 06
B. 10
C. 24
D. 12
E. 14

xxiii. Chlorosis is lack of chlorophyll in plant parts. Strong chlorosis in older leaves of plant takes place due to deficiency of:

A. Magnesium
B. Nitrogen
C. Phosphorus
D. Potassium
E. Sodium

xxiv. Grinding of food in the digestive system of cockroach takes place in:

A. Mesenteron stomach
B. Crop
C. Gizzard
D. Midgut
E. Hepatic caecum

xxv. Symplast pathway is the movement of water through:

A. Vacuoles
B. Cell wall
C. Intercellular spaces
D. Cytoplasm of cells
E. Epidermal cells

xxvi. Photorespiration takes place in green parts of the plants during:

A. Cold day
B. Hot day
C. Hot and humid day
D. Dry day
E. Hot and dry day

xxvii. Breakdown of lung alveoli results in:

A. Lung cancer
B. Tuberculosis
C. Asthma
D. Emphysema
E. Pneumonia

xxviii. Plasma contains 7-9% proteins. These proteins are synthesized in:

A. Liver
B. Spleen
C. Bone marrow
D. Lymph nodes
E. Blood

xxix. Antigens bind with specific antibodies at:

A. Constant region
B. Variable region
C. Light chain
D. Heavy chain
E. Disulphide bridge

xxx. Hydathodes are associated with:

A. Transpiration
B. Translocation
C. Guttation
D. Conduction
E. Respiration

For Examiner's use only

Q. No.1: Total Marks:	17
Marks Obtained:	

Federal Board HSSC-I Examination
Biology Model Question Paper

Time allowed: 2.30 hours Total Marks: 68

Note: Sections 'B' 'C' and 'D' comprise pages 1-2 and questions therein are to be answered on the separately provided Answer Book. Use supplementary answer sheet i.e., sheet B if required. Write your answers neatly and legibly.

SECTION – B (Marks 21)
(Chapter 1-8)

Q.2 Attempt any SEVEN parts from the following. All parts carry equal marks. (7 × 3 = 21)

i. What is bioremediation and pasteurization?
ii. Differentiate between Glycosidic linkage and peptide bonding.
iii. Write down pH of Pepsin, Sucrase, Enterokinase, Arginase.
iv. Differentiate between
    a. competitive and non-competitive inhibitors
    b. capsid and capsomere
    c. Foraminiferans and Actinopodes
v. What is endocytosis?
vi. Diagrammatically show the functions of lysosomes in eukaryotic cells.
vii. Show different steps of infectious cycle of HIV.
viii. List the land adaptations of fungi.
ix. Enlist steps which are adopted by plants for the evolution of seed habit..
x. Compare coelomic characteristics of all groups of kingdom animalia.

SECTION – C (Marks 21)
(Chapter 9-14)

Q.3 Attempt any SEVEN parts from the following. All parts carry equal marks. (7 × 3 = 21)

i. How does an enzyme accelerate a metabolic reaction?
ii. Why kingdom Protista is regarded as polyphyletic group of organisms?
iii. Show cohesion tension theory of water flow from root to leaf in plants.
iv. Enlist all types of cells present in human blood along with their major functions.
v. Show diagrammatically the structure and functions of different organs of human respiratory system.
vi. Enlist secretions of different organs of human digestive system.
vii. Enlist different stages are involved in cellular respiration. Also give energy budget sheet of aerobic respiration.
viii. How do Cnidaria exhibit alternation of generation?
ix. Write a note on lichens.
x. Describe the types of transpiration?

SECTION – D (Marks 26)

Note: Attempt any **TWO** questions. All questions carry equal marks. (2 × 13 = 26)

Q.4	a.	Write a note on size and shapes of bacteria?	(7)
	b.	Which adaptations are required for parasitic mode of animal life?	(6)
Q.5	a.	State the role of diaphragm in breathing and Give the composition of exhaled air in man.	(7)
	b.	Describe non-cyclic phosphorylation.	(6)
Q.6	a.	Describe the life cycle of Adiantum.	(7)
	b.	What is meant by artificial pace maker? What is its importance?	(6)