

Time Allowed: 3 Hrs

Marks: 85

Note: There are **Three Sections** in this paper i.e. A, B and C. Attempt Section-A and return it to the Superintendent within the given time. No marks will be awarded for **Cutting, Erasing and Overwriting**.

Mobile Phone is strictly prohibited in Examination Hall.

Time: 20 Minutes

SECTION "A"

Marks: 18

Q.1. Choose the correct option and shade one of (A, B, C, D) in the given **Bubble Answer Sheet**.

- i. Leishman's stain is used for staining:

(A) Nuclei	(B) Blood cells	(C) DNA	(D) Plant tissues
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- ii. Eukaryotic ribosomes are primarily composed of:

(A) DNA and protein	(B) RNA and lipid	(C) RNA and protein	(D) DNA and carbohydrate
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- iii. Ribonucleic acid (RNA) is chemically defined as a polymer of:

(A) Amino acids	(B) Nucleotides	(C) Fatty acids	(D) Monosaccharides
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- iv. During a biochemical experiment, a molecule composed of adenine and ribose sugar was isolated from a cell. The molecule is also known as:

(A) Adenosine Triphosphate	(B) Adenosine Diphosphate	(C) Phosphoric Acid	(D) Adenosine
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- v. After release of products from an enzyme, the enzyme:

(A) Is destroyed	(B) Remains attached to product	(C) Becomes free to catalyze another reaction	(D) Converts into substrate
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- vi. Photosynthetic pigments in plant cells are mainly present in:

(A) Cytoplasm	(B) Nucleus	(C) Vacuole	(D) Chloroplast
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- vii. The primary factor that determines whether the enzyme rubisco acts as a carboxylase or an oxygenase is the:

(A) Intensity of sunlight	(B) Temperature of the leaf	(C) Relative concentrations of CO ₂ and O ₂	(D) Number of stomata on the leaf
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- viii. In lytic cycle, the phage is called "virulent" because it:

(A) Destroys the host cell	(B) Helps the host to grow	(C) Lives harmoniously	(D) Integrates into host DNA
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- ix. Mesosomes are pocket like structures in bacterial cell membrane that are involved in:

(A) Protein synthesis and lipid storage	(B) Cell division and DNA replication	(C) Motility and surface attachment	(D) Capsule formation and sporulation
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- x. The three methods of bacterial recombination are:

(A) Fission, budding, fragmentation	(B) Mutation, adaptation, evolution	(C) Transformation, transduction, conjugation	(D) Cloning, sequencing, ligation
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- xi. Ergotamine used to facilitate delivery of babies and migraine relief is obtained from:

(A) Claviceps purpurea	(B) Morcella esculenta	(C) Aspergillus niger	(D) Rhizopus nigricans
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- xii. In a racemose inflorescence, the youngest flowers are usually found:

(A) At the base	(B) In the middle	(C) Randomly arranged	(D) Toward the apex
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- xiii. A mammal lays eggs, shows reptile-like characteristics, and lacks a placental connection between mother and embryo. This mammal most likely belongs to the sub class:

(A) Metatheria	(B) Prototheria	(C) Eutheria	(D) Placentalia
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- xiv. A group of characteristics giving resemblance to collenchyma with parenchymal tissues is:

(A) Dead, hard and empty	(B) Dead and contains cellulose	(C) Living, hard and contains lignin and cellulose	(D) Living, engaging in meristematic activities and contains chloroplasts
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- xv. Macronutrients required for plants are further divided into:

(A) Organic and inorganic nutrients	(B) Major and minor nutrients	(C) Primary and secondary nutrients	(D) Essential and non-essential nutrients
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- xvi. The central and largest region of human stomach is:

(A) Body	(B) Fundus	(C) Cardiac region	(D) Pylorus
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- xvii. An ECG paper shows three small blocks horizontally between two points of electrical activity. The approximate time interval represented is:

(A) 0.08 sec	(B) 0.20 sec	(C) 0.12 sec	(D) 0.40 sec
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- xviii. Identify the precursor cells and the location of macrophages formation:

(A) Neutrophils, in the bone marrow	(B) Monocytes, in tissues from the blood stream	(C) Natural killer cells, in the lymphnodes	(D) Lymphocytes, in the spleen
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