

(Section-A) Marks= (18) Time Allowed: 20 Minutes

All questions of this section must be answered on this page and handed over to the Superintendent within given time

991234



Student Name

Name of Paper: BIOLOGY (BIO I)

Paper Date: 16-MAY-26

160

Paper Code: 75

Signature of Student: _____

Paper Version

Sign and Seal of Suptd: _____

SEAL

A B C



سوالات

- The unexpected result in Griffith's experiment was: a) live S-type killed the mouse, b) heat-killed S-type killed the mouse, c) heat-killed S-type + live R-type killed the mouse, d) heat-killed R-type + live S-type killed the mouse
- The antibiotic penicillin is produced by: a) penicillium chrysogenum, b) saccharomyces cerevisiae, c) Aspergillus niger, d) claviceps purpurea
- In a plant specimen, the main axis keeps elongating while flowers arise laterally with the youngest flowers toward the apex. This development pattern is characteristic of: a) biparous cyme, b) uniparous cyme, c) multiparous cyme, d) racemose inflorescence
- A mammal gives birth to a very immature young that continues development inside a pouch attached to the mother's body. This subclass of mammals indicates: a) Prototheria, b) Metatheria, c) Eutheria, d) Monotremata
- Identify parts of plant where sclereids are found: a) the leaves only, b) the growing tips, c) the shell of seeds and fruits, d) the epidermis
- Elements considered as primary macronutrients for plants are: a) Calcium, Magnesium, Sulfur, b) Nitrogen, Phosphorus, Potassium, c) Iron, Chlorine, Copper, d) Carbon, Hydrogen, Oxygen
- The primary function of mucus secreted by mucus-secreting cells in human stomach is: a) to convert pepsinogen into pepsin, b) to bind with vitamin B₁₂ for absorption, c) to protect the stomach wall from acid damage, d) to stimulate the secretion of hydrochloric acid
- If the voltage amplitude of an ECG wave is 10mm vertically, the approximate electrical potential recorded is: a) 0.5 mV, b) 2.0 mV, c) 1.0 mV, d) 0.2 mV
- Composition of pus is: a) live bacteria and red blood cells, b) dead neutrophils and other cellular debris, c) a mixture of interferons and complement proteins, d) only the enzymes released by macrophages
- Feulgen's stain is used for staining: a) nuclei, b) blood cells, c) DNA, d) plant tissues
- The sedimentation coefficient used to classify ribosome is expressed in: a) Dalton units, b) Svedberg units, c) Joule units, d) Angstrom units
- Pentose sugar present in RNA is: a) ribose, b) deoxyribose, c) glucose, d) fructose
- During cellular respiration, certain molecules transfer electrons between metabolic reactions. One of those molecules is: a) ATP, b) DNA, c) AMP, d) NAD
- Deficiency of certain vitamins in the body may reduce the efficiency of enzyme-catalyzed reactions because many vitamins act as: a) substrates, b) energy sources, c) coenzymes, d) products
- Chlorophyll "a" is present in: a) all green plants, b) all fungi, c) only algae, d) only bacteria
- Glycolate is converted into glycine during photorespiration in: a) chloroplast, b) mitochondria, c) peroxisome, d) nucleus
- In lysogenic cycle, the phage-host relationship is: a) predator-prey, b) parasitic, c) competitive, d) guest-host
- Specific region in the cytoplasm of bacterial cell where the single circular bacterial chromosome is located is called: a) nucleus, b) nucleoid, c) ribosome, d) plasmid

سوال نمبر کے مطابق درست جواب نمبر کا دائرہ پر کریں۔

- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D
- A B C D

If the Candidate is absent, The Superintendent Should fill this Circle and pack the sheet with solved OMR sheets in roll number order

11261 P-426
BIOLOGY
PART-I

Time: 2 Hours 40 Minutes

SECTION-B

Marks: 40

1. Attempt any ten of the following short questions. Each question carries 4 marks.
 - i. Briefly describe any two parts of nucleus. State two reasons why nucleus is regarded as an important organelle?
 - ii. What are lipids, fatty acids and triglycerides? Name one saturated and one unsaturated fatty acid.
 - iii. Explain how pH influences enzyme activity? Why does each enzyme have an optimum pH for maximum activity?
 - iv. Describe non-cyclic electron transport in four steps, starting from the activation of photosystem II to the formation of NADPH.
 - v. Define poliomyelitis. Explain the mode of transmission of poliovirus. Also state its incubation period.
 - vi. Explain the disease profile of typhoid fever, including its causative agent, modes of transmission (five Fs), symptoms, diagnosis and treatment with immunization.
 - vii. Analyze the complete life cycle of plasmodial slime molds in four stages from plasmodium formation to spore production.
 - viii. Elaborate the reproductive features of gymnosperms, focusing on cone types, spore production, fertilization process and embryo production.
 - ix. Define polymorphism. Explain polymorphism in coelenterates.
 - x. Briefly describe the discovery of gibberellins as plant hormone. State any six effects of gibberellin on plants.
 - xi. What is peptic ulcer? What was the former belief about the causes of peptic ulcers and what is the current understanding about it? State treatment of ulcer.
 - xii. Differentiate between hypertension and hypotension.
 - xiii. Define antibodies and memory cells. Describe two types of memory cells and their role in providing immunity.

SECTION-C

Marks: 27

NOTE: Attempt any three of the following questions. Each question carries 9 marks.

2.
 - i. Describe the general structure of an amino acid and outline the significance of the R-group.
 - ii. Chloroplast is considered heterogeneous structures. Justify this statement by describing the four different components visible within a chloroplast under an electron microscope.
3.
 - i. Explain bacterial wilt disease. List its causative agent, symptoms, plants affected and control.
 - ii. Explain the general rules for naming enzymes and mention any exceptions too. Describe lyases, ligases and isomerases with examples.
4.
 - i. Describe the characteristic features of reptilian skin and explain its importance for a terrestrial life style. Differentiate between the heart structure of a typical reptile and that of an amphibian.
 - ii. Explain the oxidative phase of glycolysis in four steps.
5.
 - i. Explain hydrotropism and geotropism by stating their stimulus, mechanism, examples and importance.
 - ii. Define lymph and explain the structure and function of lymph nodes including their distribution and the type of cells they produce.