ZIAUDDIN UNIVERSITY EXAMINATION BOARD

Total Time 3.5 hours
Total Marks: 100

Class: XI **MODEL PAPER EXAMINATION 2025**
Time Allowed: 50 minutes **SUBJECT: BIOLOGY**
Q1: **SECTION "A"** **Marks: 17**

Note: Attempt **ALL** questions from this section. Each question carries **ONE** mark.

i. Tracheophytes lacking roots and leaves are categorized in:
A. Psiopsida B. Syphenpsida C. Lycopsida D. Pteropsida

ii. All amino acids share the same general formula except:
A. Alpha carbon B. Hydroxyl group C. Radical group D. Amino group

iii. Infectious agents smaller than viruses with single-stranded RNA are:
A. Viroids B. Priors C. Minus strand virus D. Double-stranded DNA virus

iv. Plants growing in salt marshes near the sea are called:
A. Hydrophytes B. Xerophytes C. Mesophytes D. Halophytes

v. Which is not involved in antigen presentation?
A. Macrophage B. Dendritic cell C. Neutrophil D. None of these

vi. The hypothalamic secretion that raises body temperature during infection is:
A. Oxytocin B. Vasopressin C. Prostaglandin D. Somatostatin

vii. When bacterial habitats become harsh and nutrients are depleted, they form:
A. Capsule B. Cell wall C. Endospore D. Mesosome

viii. Unsegmented animals with pseudocoelom and dimorphism are:
A. Arthropods B. Annelids C. Flatworms D. Roundworms

ix. Immunity developed after receiving a vaccine for a dog bite is _____ immunity.
A. Active natural B. Active artificial C. Passive naturalD. Passive artificial

x. The process in plants oxidizing sugar in chloroplasts during the day without energy production is:
A. C4 Cycle B. Photorespiration C. C3 Cycle D. Photophosphorylation

xi. From where do plants primarily obtain essential nutrients?
A. Water B. Air C. Soil D. Light

xii. The total number of ATPs generated by complete oxidation of a glucose molecule is:
A. 36 B. 38 C. 37 D. 40

xiii. In banana plants, flowers are covered by one or more large bracts called:
A. Spathes B. Spadix C. Capitulum D. None of these

xiv. What is the function of the trachea?
A. Gaseous exchange B. Filters the air we breathe
C. Exhales air from the body D. All of the above

xv. Coenzymes are composed of:
A. Protein B. Carbohydrate C. Lipid D. Vitamin

xvi. In animal cells, which organelle prevents hydrolytic enzyme damage by compartmentalization?
A. Chloroplast B. Lysosome C. Peroxisome D. Glyoxysome

xvii. This disease is caused by an arbovirus:
A. Mumps B. Yellow fever C. Measles D. Rabies

Practical Based Assessment (PBA) **Marks: 15**

Note: Attempt **ALL** questions. **Q18** carries **ONE** mark, all others carry **TWO** marks each.

xviii. After boiling a sample of milk with Benedict's solution, a yellow colour is observed. Which conclusion about the sample of milk is correct?
A. Reducing sugars are not present B. Reducing sugars are present
C. There is a high concentration of fructose D. There is a low concentration of sucrose

xix. Tests for biological molecules were carried out on three solutions. The observations were as follows:
Solution 1 Benedict's test – blue to orange
Solution 2 Benedict's test after acid hydrolysis – blue to red
Solution 3 Biuret test – blue to purple
Which observations would show the solutions that contained sucrose and amylase?
A. 1, 2 and 3 B. 1 and 3 only C. 2 and 3 only D. 2 only

xx. What are the characteristics of a non-competitive enzyme inhibitor?

	binding	effect of adding more substrate
A	At active site	Reduces inhibition
B	At active site	Not reduces inhibition
C	Not at active site	Reduces inhibition
D	Not at active site	Not reduces inhibition

xxi. Which of the following statements are true of all enzymes?
A. Soluble in water B. Catalyse the breakdown of large molecules
C. Only have one active site D. Have a quaternary structure

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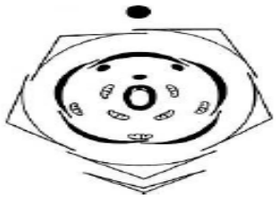
xxii. Which terms describe the method by which water is transported within xylem vessel elements?
1. Mass flow 2. Cohesion-tension 3. Osmosis
A. 1 and 2 B. 1 and 3 C. 2 only D. 3 only

xxiii. In the Gram staining technique, when alcohol is applied on the bacterial smear, the smear will appear:
A. Pink B. Violet C. Dark blue D. Colourless

xxiv. Given is the floral diagram of the flower *Cassia fistula*. The arrangement of sepals and petals in the flower is:



A. Valvate B. Twisted C. Vexillary D. Imbricate

xxv. Some stains can be used to identify cell structures in living cells. A dilute solution of one stain causes the whole cell to appear blue. The blue colour rapidly disappears in most cell structures. Those cell structures that release energy stay blue. Which type of cell structure is likely to stay blue?
A. Endoplasmic reticulum B. Golgi body C. Lysosome D. Mitochondrion

Class: XI **MODEL PAPER EXAMINATION 2025**
Time: 2 hours 40 minutes **SUBJECT: BIOLOGY SECTION "B" AND SECTION "C"** **Total Marks 68**
Q2: **SECTION "B" SHORT ANSWER QUESTIONS** **36 Marks**

Note: Answer any **FOUR** questions from reasoning question and any **FIVE** questions from non-reasoning question. All questions carry equal marks.

Q.2. (a) Reasoning questions

i. How do plants adapt to high temperatures?
ii. Reptiles and birds are both vertebrates: Why are birds capable of flight while most reptiles are not?
iii. Why are protostomes named so?
iv. Why is the SA node referred to as the pacemaker of the heart?
v. What advantages does osmotic adjustment provide to plants?
vi. Why do desert plants minimize their leaf size?
vii. How does having a double-circuit heart benefit organisms compared to a single-circuit heart?

Q.2. (b) Non-Reasoning Questions

i. What is the role of Nitrogen and Potassium in plants, and what are the symptoms of their deficiency?
ii. What is meant by the term 'prosthetic group'?
iii. What characteristics enable fungi to thrive in various environments where life is possible?
iv. Write the botanical names of any four of the following plants:
A. Brinjal B. Tomato C. Pear D. Sweet pea E. Rice F. Mulhethi
v. How are hepatitis and jaundice related to the liver's function?
vi. What is meant by the 'ascent of sap' in plants?
vii. What are the health risks associated with obesity?
viii. Differentiate between peroxisomes and glyoxysomes.

SECTION "C" DETAILED ANSWER QUESTIONS **32 Marks**

Note: Answer any **TWO** questions from this section. All question carries equal marks.

Q3
(a) Describe the structure and function of the Golgi complex.
(b) Differentiate between transformation and transduction in bacteria.

Q4
(a) What is the difference between arteries and veins? Explain in detail.
(b) Define lipids and describe the characteristics and functions of acylglycerols, phospholipids, and terpenoids.

Q5
(a) What is circulation? Explain its importance and the reasons for its necessity.
(b) What is respiration? Describe the human respiratory system in detail.

END OF PAPER