ZIAUDDIN UNIVERSITY
EXAMINATION BOARD

Total Time 3 hours
Total Marks: 60

Class: X **SECONDARY SCHOOL CERTIFICATE ANNUAL (I) EXAMINATION 2025**
Time Allowed: 20 minutes **SUBJECT: BIOLOGY**
Q1: **SECTION "A" (MULTIPLE CHOICE QUESTIONS)** **Marks: 12**

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

i. Which disorder is caused by the destruction of alveoli in the lungs?
A. Asthma B. Bronchitis C. Emphysema D. Pneumonia

ii. Which branch of biology focuses on heredity and variation?
A. Anatomy B. Genetics C. Physiology D. Ecology

iii. What do most living organisms produce using oxygen?
A. Water B. Carbon dioxide C. Energy D. Glucose

iv. Which type of reproduction is essential for evolution?
A. Binary fission B. Budding C. Asexual reproduction D. Sexual reproduction

v. What are the chemical messengers carried in blood to distant cells called?
A. Enzymes B. Hormones C. Neurotransmitters D. Vitamins

vi. What is the process of automatically focusing on near objects called?
A. Dilation B. Contraction C. Reflex D. Accommodation

vii. Which system of the body is responsible for gaseous exchange?
A. Circulatory system B. Digestive system C. Excretory system D. Respiratory system

viii. What part of the body detects a stimulus?
A. Neurons B. Muscles C. Receptors D. Hormones

ix. Which unicellular structure reproduces asexually without fusion?
A. Gamete B. Spore C. Embryo D. Zygote

x. What is the life-supporting layer of Earth called?
A. Lithosphere B. Hydrosphere C. Atmosphere D. Biosphere

xi. What is a major consequence of the misuse of antibiotics?
A. Increased digestion B. Antibiotic resistance C. Improved immunity D. Faster metabolism

xii. What do we call an organism that maintains a constant internal body temperature?
A. Ectotherm B. Poikilotherm C. Homeotherm D. Thermometer

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

Q2: Attempt **ALL** questions.

i. A student blows exhaled air through a straw into a test tube containing clear limewater. After a few seconds, the limewater turns milky. This practical test confirms the presence of:
A. Oxygen B. Nitrogen C. Carbon dioxide D. Water vapor

ii. In a bell-jar model of the human respiratory system, pulling down the rubber sheet at the bottom causes the balloons inside to inflate. The rubber sheet represents the:
A. Trachea B. Diaphragm C. Rib cage D. Alveoli

iii. A student observes a potted plant that has severely wilted on a hot, sunny day. The physiological reason for this wilting is that the rate of transpiration has:
A. Exceeded the rate of water absorption B. Stopped completely
C. Become equal to water absorption D. Reversed direction

iv. After running a 100-meter sprint, a person's skin is flushed and covered in sweat. The evaporation of this sweat acts as a homeostatic mechanism to:
A. Excrete excess glucose B. Lower the core body temperature
C. Increase blood pressure D. Retain water

v. A doctor taps a patient's knee just below the kneecap with a small rubber hammer, and the lower leg instantly kicks forward. This rapid, involuntary action is a:
A. Conditioned reflex B. Spinal reflex arc C. Voluntary movement D. Cranial nerve response

vi. A student places a potted seedling near a sunny window. After three days, the stem has bent prominently towards the glass. This growth response is known as:
A. Geotropism B. Phototropism C. Thigmotropism D. Hydrotropism

vii. When a person walks from a brightly lit courtyard into a dark cinema hall, the pupils of their eyes immediately dilate (widen). This adaptation allows:
A. The lens to change shape B. More light to enter the eye
C. The retina to rest D. Less light to enter the eye

viii. A student places a clean chicken bone in a beaker of dilute hydrochloric acid for three days. The bone becomes soft and flexible enough to tie into a knot because the acid has removed the:
A. Bone marrow B. Collagen fibers C. Calcium salts D. Spongy bone tissue

ix. When lifting a heavy book, a student physically bends their arm at the elbow. The muscle acting as the primary flexor in this scenario is the:
A. Triceps B. Biceps C. Deltoid D. Hamstring

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x. A student observes a prepared slide of yeast under a microscope and sketches a small outgrowth forming on the parent cell, which will eventually pinch off. This process is:
A. Budding B. Spore formation C. Fragmentation D. Multiple fission

xi. During a flower dissection practical, a student carefully removes the male reproductive parts that contain the pollen sacs. These structures are the:
A. Carpels B. Sepals C. Stamens D. Petals

xii. A student places dry bean seeds on moist cotton wool in a warm, dark cupboard. After 48 hours, a small white root (radicle) emerges. This process is called:
A. Germination B. Fertilization C. Pollination D. Plasmolysis

xiii. A class visits a local pond and charts the feeding relationships:
Algae →Mosquito →Larvae →Small Fish →Kingfisher bird. This linear sequence represents a:
A. Food web B. Trophic pyramid C. Food chain D. Nitrogen cycle

xiv. A baker mixes yeast with warm sugar water and flour to make dough. After an hour, the dough doubles in size because the yeast has undergone:
A. Aerobic respiration producing oxygen B. Alcoholic fermentation producing carbon dioxide
C. Photosynthesis producing glucose D. Lactic acid fermentation

xv. A lab technician places a small paper disc soaked in penicillin in the center of an agar plate covered in bacteria. After 24 hours, there is a clear circular zone around the disc where no bacteria have grown. This indicates that:
A. The bacteria are resistant to the antibiotic B. The antibiotic successfully inhibited bacterial growth
C. The agar is contaminated D. The antibiotic promoted bacterial reproduction

END OF SECTION A

Class: X **SECONDARY SCHOOL CERTIFICATE ANNUAL (I) EXAMINATION 2025**
Time: 2 hours 40 minutes **SUBJECT: BIOLOGY (SECTION "B" & SECTION "C")** **Total Marks 48**

SECTION "B" (SHORT ANSWER QUESTIONS) **24 Marks**

Q3: Answer any **EIGHT** questions from section.

i. Why is smoking harmful to health? How is it linked to respiratory disorders?
ii. What is epilepsy? Briefly describe its effect on the human body.
iii. State any three differences between bone and cartilage.
iv. Describe any three functions of joints in the human body.
v. What is variation in organisms? Explain any two causes of variation.
vi. What is pollution? Suggest two ways to control water pollution.
vii. Define any three of the following terms:
   a. Allele
   b. Dominant allele
   c. Homologous chromosomes
   d. Recessive allele
viii. Write a short note on acid rain and its harmful effects.
ix. Briefly describe the structure of DNA.
x. Draw a neat and labeled diagram of an ovule.
xi. What are xerophytes? Give one example and describe their adaptation to dry conditions.
xii. How does a vaccine protect the body from pathogens?

SECTION "C" (DETAILED ANSWER QUESTIONS) **24 Marks**

Q4: Answer any **FOUR** questions from this section.

i. What are addictive drugs? Describe the effects of any two commonly used addictive substances.
ii. Draw a neat and labeled diagram of a nephron.
iii. Describe the structure and function of the human ear.
iv. Define biotechnology. Explain two ways biotechnology is used in medicine and agriculture.
v. What is an endocrine gland? Discuss one hormone secreted by each of the pituitary and thyroid glands and their functions.
vi. What is the difference between sexual and asexual reproduction? List any five points of comparison.

END OF PAPER