PM SHRI KENDRIYA VIDYALAYA SITAPUR (FIRST SHIFT)

UNIT TEST -2 (2024-2025)

CLASS - XI SUBJECT – BIOLOGY TIME - 90 MINUTES

Multiple choice questions (6×1 = 6 MARKS)

Q1. **_____ is a product of aerobic respiration .**

(a) Malic acid (b) Lactose (c) Pyruvate (d) Ethylene

Q2. **Protons accumulate on the _____ in mitochondria**. **(1M)**

(a) Inner membrane
(b) Outer membrane
(c) Intermembrane space
(d) None of the above

Q3. **Intercalary meristems are of** **(1M)**

(a) Permanent nature
(b) Some are permanent some temporary
(b) Temporary nature
d) None of these

Q4 . **Thoracic cavity is enlarged by contraction of** **(1M)**

(a) Internal Intercostal muscles (b) Diaphragm (c) Lungs (d) All of above

Q5. **When CO2 concentration in blood increases, breathing becomes: (1M)**

(a) shallower and slow
(c) slow and deep
(b) there is no effect on breathing
(d) faster and deeper

Q6. Book lungs are respiratory organs of **(1M)**

(a) Mammals (b) Mollusca (c) Earthworm (d) Arachnida

Fill in the blank (1×1 = 1 MARKS)

Q8. ……. is a gaseous plant hormone ? **(1M)**

One word/ one sentence type . (3×1=3 MARKS)

Q9. What is the product of Aerobic glycolysis in skeletal muscle **(1M)**

Q10. Plants grow throughout their life due to ? **(1M)**

Q11. How much oxygen, blood supplies to tissues in one circulation? **(1M)**

True / false questions (3×1=3 MARKS)

Q12. Growth in dorsiventral leaf is measured in terms of increase in cell number . **(T/F) (1M)**

Q13. The regulatory centres for respiration are located in pons & cerebellum **(T/F) (1M)**

Q14. Expiration involves- Relaxation of diaphragm and intercostal muscles . (**T/F). (1M)**

Q15 . Assertion- reason question . (1 MARKS)

Assertion (A): The partial pressure of oxygen in the alveoli is higher than in the blood.

Reason (R): This gradient helps oxygen move from the alveoli into the blood by diffusion.

Options:

(a) Both Assertion and Reason are true, and the Reason is the correct explanation for the Assertion.
(b) Both Assertion and Reason are true, but the Reason is not the correct explanation for the Assertion.
(c) The Assertion is true, but the Reason is false.
(d) The Assertion is false, but the Reason is true.

Q16. Match the column. (1×4 =4 MARKS)

Column 1	Column 2
(a) Tidal volume	(1) 2500-3000ml.
(b) Residual volume.	(2) 1500-1600m
(C) Inspiratory reserve volume	(3) 500ml
(d) Expiratory capacity	(4) 1100-1200 ml

Q17. Case based question (2×1=2 MARKS)

Glycolysis is the first step in cellular respiration, occurring in the cytoplasm of the cell. It involves the breakdown of one molecule of glucose (a six-carbon sugar) into two molecules of pyruvate (a three-carbon compound). This process occurs in ten enzymatic steps and does not require oxygen, meaning it is an anaerobic process. During glycolysis, a small amount of energy is released and captured in the form of ATP and NADH.

The process begins with the phosphorylation of glucose, which requires two ATP molecules. As the pathway progresses, energy is released, and four ATP molecules are produced, resulting in a net gain of two ATPs. In addition, two molecules of NADH are produced, which can be used later in the electron transport chain for further energy production. The end product of glycolysis is pyruvate, which can either enter the aerobic respiration pathway (if oxygen is available) or be converted to lactate or ethanol in anaerobic conditions

Questions

Q17A. **What is glycolysis, and where does it occur in the cell?**

Q17B. How does the presence or absence of oxygen affect the fate of pyruvate produced during glycolysis ?

Short answer question (3+2= 5MARKS)

Q18. Differentiate between Aerobic respiration and Anaerobic respiration.

Q19. Is there a difference in the growth pattern of plants and animals? Do all parts of the plant grow endlessly? List the regions of the plant that can grow endlessly .

Long answer question (5*3 = 15MARKS)

Q20. Explain the following with examples from various plant tissues .
a) Differentiation
b) De-differentiation
c) Redifferentiation

Q21 . Give the schematic representation of an overall view of Krebs' cycle.

Q22. Write a note on the mechanism of breathing.