



INDIAN SCHOOL MUSCAT

FIRST PERIODIC TEST

BIOLOGY

CLASS: XI

Sub.Code: 044

Time Allotted: 50mts.

18.05.2023

Max .Marks: 20

GENERAL INSTRUCTIONS:*There are three sections in the question paper.**All questions are compulsory, but internal choice is given in one question each of sections B and C and attempt any one question in such case.**Draw neat labeled diagram wherever required***SECTION A**

1. Mark the correct pair of muscles involved in the normal breathing in humans 1
 - (a) External and internal intercostal muscles
 - (b) Diaphragm and abdominal muscles
 - (c) Diaphragm and external intercostal muscles
 - (d) Diaphragm and intercostal muscles
2. Which of the following is entirely made of cartilage? 1
 - (a) Nasal septum
 - (b) Larynx
 - (c) Glottis
 - (d) Trachea

3. Mark the incorrect combination with respect to pulmonary capacities 1

- (a) $IC = TV + IRV$
- (b) $FRC = RV + ERV$
- (c) $VC = TLC + RV$
- (d) $EC = TV + ERV$

4. Receptors associated with carotid artery and aortic arch can recognize changes in 1
_____ and _____ concentration and send necessary signals to
_____ for remedial action.

- (a) O_2 , CO_2 , pneumothorax
- (b) CO_2 , H^+ , rhythm centre
- (c) CO_2 , H^+ , apneustic centre
- (d) O_2 , H^+ , pneumothorax

5. 6000 to 8000 ml of air is the 1

- (a) Vital capacity of lungs
- (b) Volume of normal expiration per minute
- (c) Sum of $IRV + ERV$
- (d) Inspiratory capacity of lungs

6. Assertion: Carbonic anhydrase is present in the erythrocytes. 1

Reason: In plasma carbon dioxide combines with water and is transported.

- (a) Both assertion and reason are true and the reason is the correct explanation of the assertion.
- (b) Both assertion and reason are true but the reason is not the correct explanation of the assertion.
- (c) Assertion is true but the reason is false.
- (d) Assertion and reason are false.

7. Assertion: fluid filled double membranous layer surrounds the lungs. 1

Reason: The pleural fluid in between the membranes reduces the friction on the lung surface.

- (a) Both assertion and reason are true and the reason is the correct explanation of the assertion.
- (b) Both assertion and reason are true but the reason is not the correct explanation of the assertion.
- (c) Assertion is true but reason is false.

(d) Assertion and reason are false.

SECTION B

8. Mention any four functions of the conducting part of the respiratory system. 2

9. Define oxygen dissociation curve. 2

OR

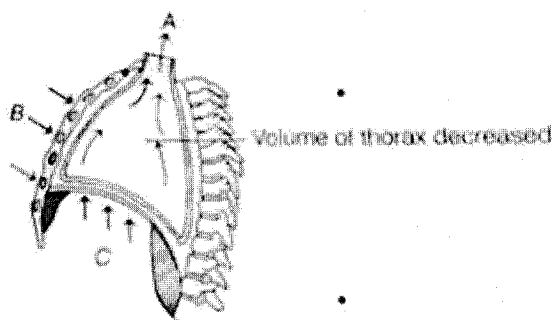
How does breathing in aquatic arthropods differ from that in terrestrial arthropods?

SECTION C

10. a) List two factors which affect the rate of diffusion of a gas. 3

b) What is one of the major causes of emphysema?

11. 3



In the above diagram, comment on A, B and C.

OR

Mechanism of Inspiration

12. Complete the missing terms 3

a. Inspiratory Capacity (IC) = _____ + IRV

b. _____ = TV + ERV

c. Functional Residual Capacity (FRC) = ERV + _____

8/12/15

ROLL NUMBER				
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SET B



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Draw neat labeled diagram wherever required

SECTION A

1. Trachea divides into left and right primary bronchi at _____ thoracic vertebra. 1
 - (a) 4
 - (b) 5
 - (c) 3
 - (d) 7
2. Which of the following is wrong about larynx? 1
 - (a) It is a bony box
 - (b) Glottis is the opening into the larynx
 - (c) During swallowing glottis is covered by epiglottis to prevent choking
 - (d) Larynx is also known as voice box
3. Mark the incorrect combination with respect to pulmonary capacities 1
 - (a) $IC = TV + IRV$

(b) $FRC = RV + ERV$

(c) $VC = TLC + RV$

(d) $EC = TV + ERV$

4. Inspiration occurs when there is a negative pressure in the lungs with respect to atmospheric pressure. This negative pressure is achieved due to 1

- (a) Intrapulmonary pressure is less than the atmospheric pressure
- (b) Intrapulmonary pressure is greater than the atmospheric pressure
- (c) Intrapulmonary pressure is equal to the atmospheric pressure
- (d) Intrapleural pressure becomes higher than the alveolar pressure

5. In breathing movements air volume can be estimated by 1

- (a) Stethoscope
- (b) Hygrometer
- (c) Sphygmomanometer
- (d) spirometer

6. Assertion: Carbonic anhydrase is present in the erythrocytes. 1

Reason: In plasma carbon dioxide combines with water and is transported.

- (a) Both assertion and reason are true and the reason is the correct explanation of the assertion.
- (b) Both assertion and reason are true but the reason is not the correct explanation of the assertion.
- (c) Assertion is true but reason is false.
- (d) Assertion and reason are false.

7. Assertion: The role of oxygen in the regulation of respiratory rhythm is quite insignificant. 1

Reason: Increased pCO_2 and H^+ concentration inputs from chemoreceptors can activate respiratory rhythm centre to make necessary adjustments.

- (a) Both assertion and reason are true and the reason is the correct explanation of the assertion.
- (b) Both assertion and reason are true but the reason is not the correct explanation of the assertion.
- (c) Assertion is true but reason is false.
- (d) Assertion and reason are false.

SECTION B

8. Thoracic cavity is an airtight chamber. Justify. 2
9. Identify the three major layers that form the diffusion membrane. What is its total thickness? 2

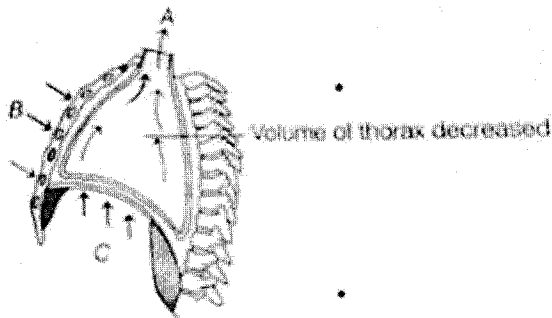
OR

How does breathing in aquatic arthropods differ from that in terrestrial arthropods?

SECTION C

10. a) List two factors which affect the rate of diffusion of a gas. 3
b) What is one of the major causes of emphysema?

11.



In the above diagram, comment on A, B and C.

OR

Mechanism of Expiration.

12. Complete the missing terms 3
- a. Inspiratory Capacity (IC) = _____ + IRV
- b. _____ = TV + ERV
- c. Functional Residual Capacity (FRC) = ERV + _____

VPS

ROLL NUMBER

SET

C



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SECTION A

1. RBC plasma also carries oxygen in solution. The percentage is

1

- (a) 70%
- (b) 3%
- (c) 97%
- (d) 25%

2. Which of the following is wrong?

1

- (a) Oxygen binds with haemoglobin in a reversible manner to form oxyhaemoglobin.
- (b) Every 100 ml of oxygenated blood can deliver around 5ml of oxygen to the tissues.
- (c) Occupational respiratory disorders are characterized by fibrosis.
- (d) None

3. Mark the incorrect combination with respect to pulmonary capacities

1

(a) $IC = TV + IRV$

(b) $FRC = RV + ERV$

(c) $VC = TLC + RV$

(d) $EC = TV + ERV$

4. The structure that does not contribute to the breathing movements in mammals is 1

- (a) Diaphragm
- (b) Ribs
- (c) Larynx
- (d) Intercostal muscles

5. Partial pressure of oxygen and partial pressure of carbon dioxide are identical in 1

- (a) Alveoli and deoxygenated blood
- (b) Tissues and oxygenated blood
- (c) Oxygenated blood and tissues
- (d) Tissues and deoxygenated blood

6. Assertion: Carbonic anhydrase is present in the erythrocytes. 1

Reason: In plasma carbon dioxide combines with water and is transported.

- (a) Both assertion and reason are true and the reason is the correct explanation of the assertion.
- (b) Both assertion and reason are true but the reason is not the correct explanation of the assertion.
- (c) Assertion is true but reason is false.
- (d) Assertion and reason are false.

7. Assertion: The role of oxygen in the regulation of respiratory rhythm is quite insignificant. 1

Reason: Increased pCO_2 and H^+ concentration inputs from chemoreceptors can activate respiratory rhythm center to make necessary adjustments.

- (e) Both assertion and reason are true and the reason is the correct explanation of the assertion.
- (f) Both assertion and reason are true but the reason is not the correct explanation of the assertion.
- (g) Assertion is true but reason is false.
- (h) Assertion and reason are false.

SECTION B

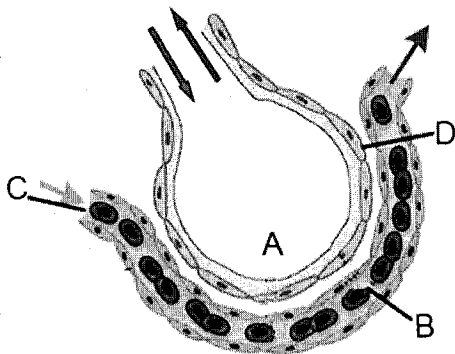
8. Thoracic cavity is an airtight chamber. Justify. 2
9. Explain the transport of carbon dioxide as bicarbonate. 2

OR

How does breathing in aquatic arthropods differ from that in terrestrial arthropods?

SECTION C

10. a) List two factors which affect the rate of diffusion of a gas. 3
b) What is one of the major causes of emphysema?
11. 3



In the above diagram, identify B, C and D.

OR

Mechanism of oxygen transport by haemoglobin.

12. Complete the missing values 3
- a. IRV is _____ ml
- b. RV is _____ ml
- c. FRC is _____ ml (calculate upper range)

