SECTION - A

Q.1. MULTIPLE CHOICE QUESTIONS: [04]

1. The enzyme that increases the reaction rate between CO\textsubscript{2} and H\textsubscript{2}O in red blood cells is___________.
   (a) Carbonic anhydrase  (b) adenylyl cyclase
   (c) Alkaline phosphatase  (d) Carbonic synthetase

2. Which of the following options is incorrect about the larynx___________.
   (a) It is a bony box.
   (b) Glottis is the opening into the larynx
   (c) During swallowing of food glottis is covered by epiglottis to prevent food entry into the larynx
   (d) Larynx is a sound producing organ.

3. Apneustic center in the ____________ is antagonistic to the pneumotaxic center.
   (a) Medulla  (b) Pons
   (c) Spinal cord  (d) Cerebral hemisphere

4. The oxygen dissociation curve is ____________.
   (a) Parabola  (b) Sigmoid
   (c) slope  (d) Straight line

Q.2. VSA [03]

(i) Name the cartilage which divides nasal cavity into right and left nasal chambers.
(ii) Define expiratory reserve volume.
(iii) Name the bone present above the larynx.

SECTION – B

SA-I (Attempt any four) [08]

Q.3 What are the two steps of Cellular Respiration? Explain.

Q.4 List the advantages of nasal respiration over the mouth respiration?

Q.5 Given below are the characteristics of some modified respiratory movement. Identify them.
   a) Spasmodic contraction of muscles of expiration and forceful expulsion of air through nose and mouth.
   b) A prolonged inspiration through widely opened mouth due to increase in CO\textsubscript{2} concentration in lungs followed by many short convulsive expiration accompanied by facial expression.

Q.6 What is tidal volume? Find out the tidal volume (approximate value) for a healthy human in an hour time.

Q.7 Match the column

\begin{tabular}{ll}
A & B \\
i) Scorpion & a) External gills \\
ii) Limulus & b) Internal gills \\
iii) Salamander & c) Book gills \\
iv) Fish & d) Book lungs
\end{tabular}
Q.8 While working with the car engine in a closed garage, John suddenly felt dizzy and fainted. What is the possible reason?

SECTION –C

SA-II (Attempt any two) [06]

Q.9 What do you mean by Hering-Breuer reflex? State its function.

Q.10 Distinguish between Expiration and Inspiration.

Q.11 How does partial pressure help in gaseous exchange at the alveolar level? Explain.

SECTION –D

LA (Attempt any one) [04]

Q.12 Explain Hamburger phenomenon. Why does it occur?

Q.13 How does haemoglobin help in transport of oxygen to the cells?