

**Meghalaya Board
Class XI
Bio-Zoology
Sample Paper 2 – Solution**

GROUP A

1. In frogs, the partially digested food passes from the stomach into the duodenum, which is the first part of the intestine.
2. Terminalisation of chiasmata marks the beginning of diakinesis
3. The gastro-oesophageal sphincter regulates the opening of the oesophagus into the stomach.
4. External intercostal muscles
5. Fibrinogen, globulin and albumin are the major proteins of plasma.
6. The occipital condyles help the skull to articulate with the superior region of the vertebral column

GROUP – B

7. Melatonin is secreted by the pineal gland. It plays a role in the regulation of the diurnal rhythm of our body.

Or

Vasopressin is responsible for the reabsorption of water and electrolytes by the distal tubules, and it reduces the loss of water through urine.

In summer, the secretion of vasopressin increases which helps the body to conserve more water. Hence, the urine is more concentrated and thick in summer.

8. Pneumatic bones in Aves keep the animal body light and hence help in flight. Air sacs in birds help in respiration and buoyancy.
9. A flagellum is the locomotory organ in motile bacteria. The filament is its longest portion.
10. When the intra-pulmonary pressure, i.e. the pressure within the lungs, is lesser than the atmospheric pressure, the diaphragm contracts.
The contraction of the diaphragm increases the volume of the thoracic chamber, thus increasing space for more air which is withdrawn during inspiration. Hence, the person is able to inspire

GROUP - C

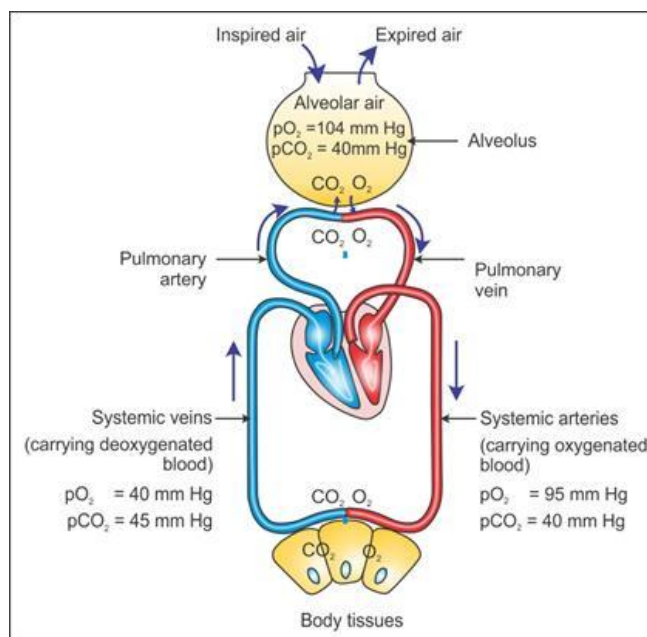
- 11.** Electrocardiogram or ECG is the graphical representation of the electrical activity of the heart during a cardiac cycle. It is measured or monitored by an electrocardiograph. Any deviation or change in the shape of ECG indicates a cardiac disorder or abnormality.
- 12.**
- (a) A fall in glomerular blood pressure activates the juxta glomerular cells to release renin.
 - (b) Renin converts angiotensin, first to angiotensin I and then to angiotensin II.
 - (c) Angiotensin II increases the glomerular blood pressure which increases the glomerular filtrate rate (GFR).
 - (d) At the same time, angiotensin II activates the adrenal cortex to release aldosterone.
 - (e) Aldosterone stimulates the reabsorption of sodium ions and water from DCT. This also results in an increase in GFR.

Or

- (a) Maintenance of the glomerular filtration rate is carried out by the juxtaglomerular apparatus in the kidneys.
 - (b) It is the region formed by the close contact between the distal convoluted tubule and the afferent arteriole at a region.
 - (c) When GFR falls, it stimulates JGA to release rennin.
 - (d) Renin helps to bring reduced GFR back to normal.
- 13.** Some cells do not exhibit cell division or some cells divide only when the body has lost cells during an injury. Such cells enter the quiescent stage. In this stage, the cells are metabolically active. However, the cells do not divide. They undergo division only when there is a requirement by the body under certain conditions.

GROUP - D

14.



Or

For the formation of oxyhaemoglobin, the factors required such as high pO_2 , low pCO_2 , low concentration of H^+ ions and low temperature are maintained in the alveoli. Hence, the binding of oxygen with haemoglobin at lung surfaces is faster.

Low pO_2 , high pCO_2 , high H^+ ion concentration and high temperature are the factors found in tissues which always favour the dissociation of oxygen.

15. Uraemia is the accumulation of urea in the blood due to malfunctioning of the kidneys.

In individuals suffering from uraemia, the waste substances are removed by haemodialysis.

In this process, blood is drained from the convenient artery (usually radial artery), mixed with anticoagulant such as heparin and pumped into the dialysing unit.

The dialysing unit consists of a coiled tube surrounded by a dialysing fluid.

The dialysing unit has the same composition as that of the plasma membrane, but it does not contain any nitrogenous waste.

The absence of nitrogenous waste in the dialysing unit enables the easy movement of waste from urine into the tube through the porous membrane, thus clearing the blood from any waste.

The cleared blood is then pumped back into the body through the same vein after adding anti-heparin.

16.

Mitosis	Meiosis
Two daughter cells are formed.	Four daughter cells are formed.
Cytoplasm and nucleus divide once during cell division.	Cytoplasm and nucleus divide twice during cell division.
Mitosis occurs in diploid cells, but it also occurs in some haploid cells.	It occurs in diploid cells.
It helps in growth and cell repair in organisms.	It helps maintain a constant number of chromosomes in a species.