

**HIGHER SECONDARY PUBLIC EXAMINATION, MARCH – 2022**  
**TENTATIVE SCORING KEY**

**SUBJECT: BIO - ZOOLOGY****CLASS: 11****PART-I****8 x 1 = 8**

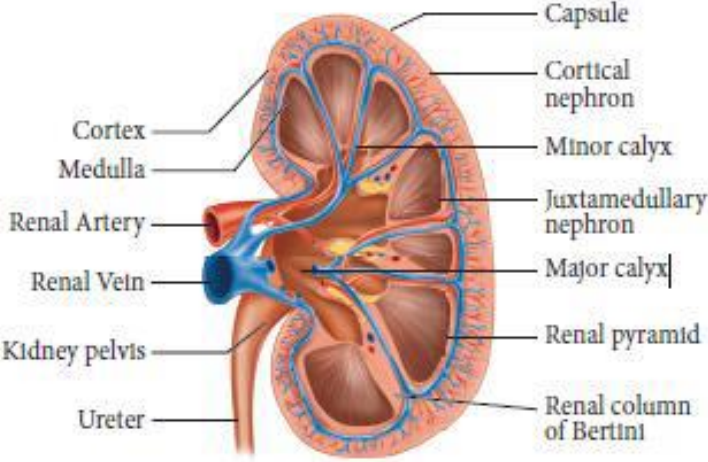
Q.NO	A - TYPE		Q.NO	B - TYPE	
1	d	Organ of Corti	1	c	Iodine
2	b	Insects	2	a	Closure of semi lunar valves
3	c	Iodine	3	d	Both (b) and (c)
4	b	Myocytes	4	d	Organ of Corti
5	d	Both (b) and (c)	5	d	Segments 14 - 17
6	b	Emulsification	6	b	Insects
7	d	Segments 14 - 17	7	b	Emulsification
8	a	Closure of semi lunar valves	8	b	Myocytes

**PART-II****4 x 2 = 8**

9	<p><b>Schizocoelomates:</b></p> <ol style="list-style-type: none"> <li>1. Animal's the body cavity is formed by splitting of mesoderm. -- ½ Mark</li> <li>2. (e.g., annelids, arthropods, molluscs) – <b>Any One example.</b> -- ½ Mark</li> </ol> <p><b>Enterocoelomate:</b></p> <ol style="list-style-type: none"> <li>3. The body cavity is formed from the mesodermal pouches of archenteron. -- ½ Mark</li> <li>4. (e.g., Echinoderms, hemichordates and chordates) – <b>Any One example.</b> -- ½ Mark</li> </ol>
10	<p><b>Components of frog Blood in frog.</b></p> <ol style="list-style-type: none"> <li>1. The blood of frog consists of plasma [60%] and blood cell [40 %] includes red blood cells, white blood cells, and platelets. -- 1 Mark</li> <li>2. RBCs are loaded with red pigment, nucleated and oval in shape. -- ½ Mark</li> <li>3. Leucocytes are nucleated, and circular in shape -- ½ Mark</li> </ol>
11	<p><b>Peculiar character of Duck</b></p> <ol style="list-style-type: none"> <li>1. The body is fully covered with oily feathers. -- ½ Mark</li> <li>2. They have a layer of fat under their skin which prevents it from getting wet. -- ½ Mark</li> <li>3. They lay eggs at night or in the morning. -- ½ Mark</li> <li>4. The ducks feed on rice bran, kitchen wastes, waste fish and snails. -- ½ Mark</li> </ol>
12	<ol style="list-style-type: none"> <li>1. In 1859 Charles Darwin - book <b>Origin of species.</b> -- 1 Mark</li> <li>2. He explains the evolutionary connection of species by the process of natural selection. -- 1 Mark</li> </ol>
13	<p><b>Types of WBC:</b></p> <ol style="list-style-type: none"> <li>1. <b>Granulocytes:</b> Neutrophils, eosinophils and basophils. -- 1 Mark</li> <li>2. <b>Agranulocytes:</b> Lymphocytes and Monocytes. -- 1 Mark</li> </ol>
14	<p><b>Homeostasis:</b></p> <ol style="list-style-type: none"> <li>1. Maintenance of constant internal environment of the body by the different coordinating system. -- 2 Mark</li> </ol>

## PART-III - QUESTION NO – 19. IS COMPULSORY

3 X 3 = 9

15	<p><b>Biradial symmetry:</b></p> <ol style="list-style-type: none"> <li>Biradial symmetry is a combination of radial and bilateral symmetry. -- 1 Mark</li> <li>There are only two planes of symmetry, one through the longitudinal and sagittal axis and the other through the longitudinal and transverse axis. -- 1 Mark</li> <li>(e.g., Comb jellyfish – <i>Pleurobrachia</i>) -- 1 Mark</li> </ol>
16	<p><b>Economic importance of frog:</b> – (Any Three 3 x 1 = 3).</p> <ol style="list-style-type: none"> <li>Frog is an important animal in the <b>food chain</b>; it helps to maintain our ecosystem. -- 1 Mark</li> <li>Frog are beneficial to man, since they feed on insects and helps in reducing insect pest population. -- 1 Mark</li> <li>Frogs are used in traditional medicine for controlling <b>blood</b> pressure and for its <b>anti-aging properties</b>. -- 1 Mark</li> <li>In USA, Japan, China and North East of India, frogs are <b>consumed</b> as delicious food as they have high nutritive value. (Any three) -- 1 Mark</li> </ol>
17	 <p><b>Diagram</b> -- 2 mark. <b>Any four parts</b> -- 1 mark</p> <p>Labels in the diagram: Capsule, Cortical nephron, Minor calyx, Juxtamedullary nephron, Major calyx, Renal pyramid, Renal column of Bertini, Ureter, Kidney pelvis, Renal Vein, Renal Artery, Cortex, Medulla.</p> <p><b>Figure 8.3 L S of kidney</b></p>
18	<ol style="list-style-type: none"> <li>We can perceive colour only in bright light, because</li> <li>The cones are responsible for colour vision and works best in the bright light. -- 2 Mark</li> <li><b>Blind spot</b> is the region of our eye that devoid of photo receptors. -- 1 Mark</li> </ol>
19 COM	<ol style="list-style-type: none"> <li>Thymus gland is partially an endocrine and partially a lymphoid organ. -- ½ Mark</li> </ol> <p><b>As a Endocrine organ:</b></p> <ol style="list-style-type: none"> <li>It secretes four hormones such as thymulin, thymosin, thymopoietin and thymic humoral factor (THF). (Any three hormone). -- 1 ½ M</li> </ol> <p><b>Lymphoid organ:</b></p> <ol style="list-style-type: none"> <li>Production of immuno competent 'T' lymphocytes. -- ½ Mark</li> <li>Provides cell mediated immunity. -- ½ Mark</li> </ol>
<b>PART – IV</b>	
<b>2 x 5 = 10</b>	
20 .A	<ol style="list-style-type: none"> <li>Destroys aging and defective blood cells.</li> <li>Stores glucose in the form of glycogen or disperses glucose into the blood stream with the help of pancreatic hormones.</li> <li>Stores fat soluble vitamins and iron.</li> <li>Detoxifies toxic substances.</li> <li>Involves in the synthesis of non- essential amino acids and urea.</li> </ol>

OR

**Methods of Animal breeding:****Any five technique = 5 x 1 = 5****Inbreeding:**

1. Breeding between animals of the same breed for 4-6 generations is called inbreeding.
2. Inbreeding increases homozygosity and exposes the harmful recessive genes.
3. Continuous inbreeding reduces fertility and even productivity, resulting in "inbreeding depression".

**Outbreeding:**

1. The breeding between unrelated animals is called outbreeding. Individuals produced do not have common ancestors for 4-6 generations.
2. Outbreeding helps to produce new and favourable traits, to produce hybrids with superior qualities and helps to create new breeds.

**Out crossing:**

1. It is the breeding between unrelated animals of the same breed but having no common ancestry. The offspring of such a cross is called outcross.
2. This method is suitable for breeding animals below average in productivity.

**Cross breeding:**

1. Breeding between a superior male of one breed with a superior female of another breed.
2. The cross bred progeny has superior traits ( hybrid vigour or heterosis.)

**Interspecific hybridization:**

3. In this method of breeding mating is between male and female of two different species.
4. Mule - produced by the process of interspecific hybridization between a male donkey and a female horse.

**Controlled breeding experiments:****Artificial insemination:**

1. Artificial insemination is a technique in which the semen collected from the male is injected to the reproductive tract of the selected female.
2. Artificial insemination is economical measure where fewer bulls are required and maximum use can be made of the best sire

**Multiple ovulation embryo transfer technology (MOET):**

1. It is another method of propagation of animals with desirable traits.
2. This method is applied when the success rate of crossing is low even after artificial insemination.

20. B

**Mechanism of breathing:**

--- 1 Mark

1. The movement of air between the atmosphere and the lungs is known as ventilation or breathing.
2. Inspiration and expiration are the two phases of breathing.
3. Inspiration is the movement of atmospheric air into the lungs and expiration is the movement of alveolar air that diffuse out of the lungs.

**Inspiration:**

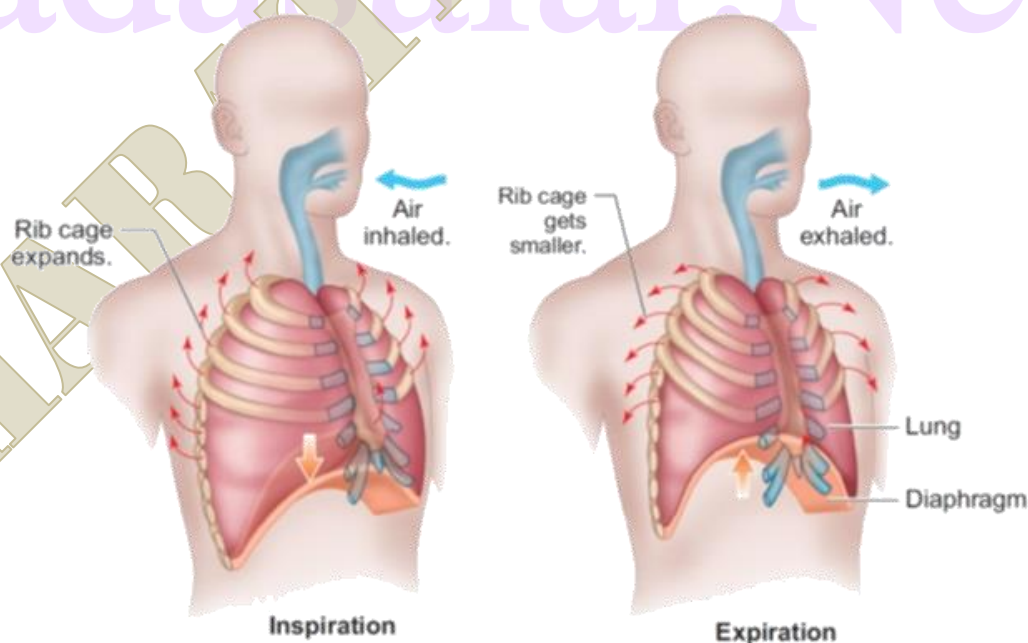
--- 1 ½ Mark

1. Inspiration occurs if the pressure inside the lungs (intrapulmonary pressure) is less than the atmospheric pressure likewise expiration takes place when the pressure within the lungs is higher than the atmospheric pressure.
2. Inspiration is initiated by the contraction of the diaphragm muscles and external intercostal muscles, which pulls the ribs and sternum upwards and outwards and increases the volume of the thoracic chamber in the dorso-ventral axis, forcing the lungs to expand the pulmonary volume.
3. The increase in pulmonary volume and decrease in the intrapulmonary pressure forces
4. The fresh air from outside to enter the air passages into the lungs to equalize the pressure. This process is called **inspiration**.

**Expiration:**

--- 1 ½ Mark

1. Relaxation of the diaphragm allows the diaphragm and sternum to return to its dome shape and the internal intercostal muscles contract, pulling the ribs downward reducing the thoracic volume and pulmonary volume.
2. This results in an increase in the intrapulmonary pressure slightly above the atmospheric pressure causing the expulsion of air from the lungs. This process is called **expiration**.

**Diagram** $\frac{1}{2} + \frac{1}{2} = 1$  Mark

21. A

OR

**Distinct features of chordates possess three fundamental:**

**Presence of elongated rod like notochord:**

**(Any two pints)**

**-- 1 Mark**

1. It lies below the nerve cord and above the alimentary canal.
2. It serves as a primitive internal skeleton.
3. It may persist throughout life in lancelets and lampreys.
4. In adult vertebrates, it may be partially or completely replaced by backbone or vertebral column.

**A dorsal hollow or tubular fluid filled nerve cord:**

**(Any two pints)**

**-- 1 Mark**

1. It lies above the notochord and below the dorsal body wall.
2. It serves to integrate and co-ordinate the body functions.
3. In higher chordates, the anterior end of the nerve cord gets enlarged to form the brain and the posterior part becomes the spinal cord, protected inside the vertebral column.

**Presence of pharyngeal gill slits or clefts:**

**(Any two pints)**

**-- 1 Mark**

1. In all chordates at some stage of their lifecycle.
2. It is a series of **gill slits or clefts that perforates** the walls of pharynx and appears during the development of every chordate.
3. In aquatic forms, **pharyngeal gill slits are vascular, lamellar and form the gills** for respiration.
4. In terrestrial chordates, traces of **non-functional gill clefts** appear during embryonic developmental stages and disappear later.

**Basic features:**

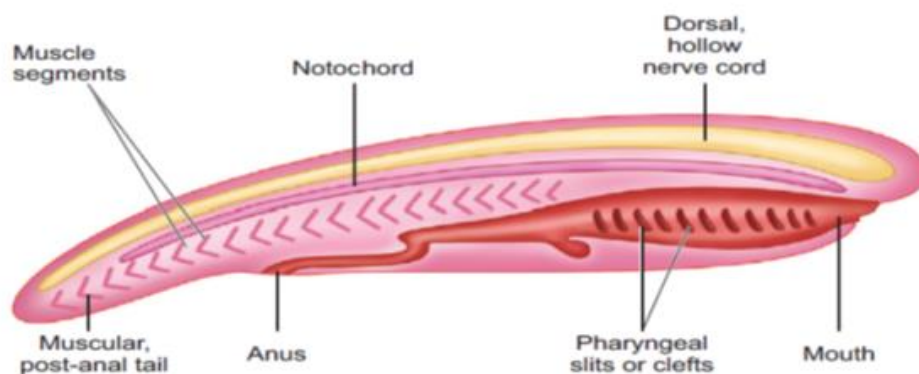
**(Any two pints)**

**-- 1 Mark**

1. Bilaterally symmetrical,
2. Triploblastic,
3. Coelomates
4. Organ system level of organization.
5. They possess post anal tail.
6. Closed circulatory system.
7. Ventral myogenic heart except in *Amphioxus*.
8. **Diagram**

**(With Any two parts )**

**-- 1 Mark**



**Figure 2.19 A Typical Chordate**

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