DIRECTORATE OF GOVERNMENT EXAMINATIONS, CHENNAI-6
HIGHER SEONDARY FIRST YEAR EXAMINATION, MAY 2022
ZOOLOGY ANSWER KEY

PART - I

NOTE: **Answer all the questions**
Choose the correct answer
Each question carries 1 mark **15 x 1 = 15**

Q. NO	Option	TYPE - A	Option	TYPE - B
1	(b)	Myoglobin	(a)	500 mL
2	(a)	urea	(d)	Pivot joint
3	(d)	Thyroid	(d)	Both (b) and (c)
4	(c)	agglutinogens	(a)	Attacus ricini
5	(b)	Walter Rosen	(c)	agglutinogens
6	(a)	Attacus ricini	(d)	Thyroid
7	(a)	(1) – iv, (2) – (iii), (3) – (ii), (4) – (i)	(b)	Walter Rosen
8	(d)	Both (b) and (c)	(b)	Ultra sonogram
9	(a)	500 mL	(c)	Frogs evolved from gilled ancestor
10	(c)	Hypothalamus	(a)	(1) – iv, (2) – (iii), (3) – (ii), (4) – (i)
11	(a)	Arthropoda	(c)	Hypothalamus
12	(b)	Ultra sonogram	(c)	Fish
13	(c)	Frogs evolved from gilled ancestor	(a)	urea
14	(d)	Pivot joint	(b)	Myoglobin
15	(c)	Fish	(a)	Arthropoda

PART - II

NOTE: **Answer any SIX questions** **6 x 2 = 12**
Question No 24 is compulsory

<table>
<tr><th>Q.NO</th><th>ANSWER</th><th>MARKS</th></tr>
<tr><td>16</td><td>
<table>
<tr><th>White adipose tissue</th><th>Brown adipose tissue</th></tr>
<tr><td>1. White fat
2. It stores nutrients
3. Less mitochondria</td><td>1.Brown fat.
2.It produce to heat the blood stream to warm the body
3. Abundant mitochondria Any two</td></tr>
</table>
</td><td>2</td></tr>
</table>

17	<table><tr><th>Male Frog</th><th>Female Frog</th></tr><tr><td>1. Vocal sac is present 2. Nuptial pad is present</td><td>1.Vocal sac is absent 2.Nuptial pad is absent</td></tr></table>	**2**
18	There is no Villi in the stomach due to the absence of absorption and assimilation process.	**2**
19	**Heart Beat :** Rhythmic contraction and expansion of heart	**2**
20	**Urion Formation Steps :** 1. Glomerular filteration 2. Tubular reabsorption 3. Tubular secretion	**2**
21	The walls of the ventricles are thicker than the auricles due to the presence of papillary muscles.	**2**
22	**Hormones are chemical messenger :** They act as organic catalysts and co-enzymes to perform specific functions in the target organs.	**2**
23	1. Hayem's solution - RBC diluting fluid 2. Turk's solution (or) Toisson solution - WBC diluting fluid	**2**
24	Prolonged intake of oily snacks alteration in the composition of the bile can cause the formation of stones in the gall bladder.	**2**

PART - III

Answer any SIX questions **6 x 3 = 18**

Question No 33 is compulsory

Q.NO	ANSWER	MARKS
25	**Domain Archaea :** 1. It includes single celled organisms, the prokaryotes 2. **Extremophiles** 3. They are capable of synthesizing their food without sunlight and oxygen by utilizing hydrogen sulphide and other chemicals from the volcanic vents. **4. Methanogens** 5. **Halophiles**. **6. Thermoacidophiles** **(Any 3 Points)**	**3**
26	<table><tr><th>Schizocoelom</th><th>Enterocoelom</th></tr><tr><td>1. The body cavity is formed by splitting of mesoderm. 2. It possess Schizocoelomates **3. Eg :** Annelids, arthropods, molluscs</td><td>1.The body cavity is formed from the mesodermal pouches of archenteron. 2.It possess Enterocoelomates **3.Eg :** Echinoderms, hemichordates, chordates</td></tr></table>	**3**
27	**Areolar tissue :** Diagram ----- **2** Parts ----- **1**	**3**

28	**Nitrogen narcosis :** Increase in blood nitrogen content can lead to a condition called **nitrogen narcosis.**	**3**
29	**Parts of L.S of human Kidney :** a - Cortex, b – Renal pelvis, c – Renal vein, d - Renal Artery,e – Renal pyramid, f - Ureter	**3**
30	**1.** Atrial natriuretic peptide 1 **2.** It increase Na+ Excretion **3.** Increase the blood flow to the glomerulus **4.** The afferent glomerular arterioles as a vasodilator. 2 **5.** Efferent arterioles as a vasoconstrictor. **(Any two)**	**3**
31	**Differences between Rod cells and Cone cells : Any 3 points** **Rod Cells** 1. Rods are responsible for vision in dim light. 2. Rhodopsin pigment is present 3. The pigment present in the rods is rhodopsin, formed of a protein scotopsin and retinal. (an aldehyde of vitamin A) 4. There are about 120 millions rod cells. **5.** Rods are predominant in the extra fovea region. **Cone cells** 1. the cones are responsible for colour vision and works best in the bright light. 2. Photopsin pigment is present 3. The pigment present in the cones is photopsin, formed of opsin protein and retinal. 4. There may be 6-7 millions cone cells. **5.** Cones are concentrated in the fovea region.	**3**
32	Adrenalin and noradrenalin 1½ Fight, Flight, Fright hormones 1½	**3**
33	Positive feed back occurs when there is excessive loss of fluid from the body or when there is an increase in the blood pressure, the osmoregulators of the hypothalamus respond by stimulating the neurohypophysis to secrete anti diuretic hormone.(ADH) or vasopressin (**1½**) Negative feed back occurs when you drink excess amounts of your favourite juice, osmoreceptors of the hypothalamus is no longer stimulated and the release of ADH is suppressed from the neurohypophysis. (**1½**)	**3**

PART – IV

NOTE : Answer ALL questions **5x5=25**

Q.NO	ANSWER	MARKS
34 (a)	**Common Characteristics found in most animals :** 1. The arrangement of cell layers 2. The levels of organization- diploblastic / triploblastic organization. (Diploblastic – presence of ectoderm and endoderm only) (Triploblastic-presence of ectoderm , mesoderm and endoderm) 3.The patterns of symmetry – asymmetry,bilateral symmetry, radial symmetry , biradial symmetry 4.Nature of coelom – eucoelomates, acoelomates, pseudocoelomates 5. Segmentation and Notochord **(OR)**	**5**

(b)	**External morphology of Earth worm :-** **(Any five Points)**	**5**
35 (a)	**Digestion in the stomach :** **1.** HCL – Pepsinogen → pepsin **------ 2** **2.** Pepsin – Proteins → Proteoses, Peptones **------ 2** **3.** Renin – Milk protein → Caseinogen – Casein **------ 1** **(OR)**	**5**
(b)	**Transport of CO_2 from the tissue cells to the lungs : With Explanation** 1. Dissolved in plasma **------ 2** 2. Bound to haemoglobin **------ 2** 3. As bicarbonate ions in plasma **------ 1**	**5**
36 (a)	**Cardiac Cycle :** 1. Definition **------- 1** 2. Ventricular diastole **------- 1** 3. Atrial systole **------- 1** 4. Ventricular systole **------- 1** 5. Ventricular diastole, Ventricular systole **------- 1** **(OR)**	**5**
(b)	**Mechanism and healing of bone fracture :** 1. Mechanism of bone fracture **------- 1** 2. Formation of haematoma **------- 1** 3. Formation of fibrocartilaginous callus **------- 1** **4.** Formation of Bony callus **------- 1** 5. Remodeling of Bone Bony callus **------- 1** **(OR)**	**5**
37 (a)	**L.S of human brain :** Diagram **------ 3** Labelling **------ 2**	**5**
(b)	**Hormones secreted by thyroid gland :** Tri-iodothyronine (T_3) **------ 1** Tetra-iodothyronine (T_4) **------ 1** Thyrocalcitonin (TCT) **------ 1** Function (Any Two) **------ 2**	**5**
38 (a)	**X-rays and its clinical significance :** Definition **------- 2** Clinical significance **(Any 4 points)** **------- 3** **(OR)**	**5**
(b)	**Life cycle of Bombyx mori :** Diagram **------- 2** Explanation **------- 3**	**5**