

**DIRECTORATE OF GOVERNMENT EXAMINATIONS, CHENNAI - 6**  
**HIGHER SECONDARY EXAMINATION FIRST YEAR MARCH - 2018**  
**KEY FOR ZOOLOGY**

**Note :**

1. Answers written only in BLACK or BLUE should be evaluated
2. Choose the correct answer and write the option code in section I

**Maximum Marks: 70**

**SECTION - I**

Q. No	Option	TYPE A	Q. No	Option	TYPE B
1	d	135 g	1	d	Cuvier
2	b	Eohippus	2	d	errector pili
3	a	Endoplasmic reticulum	3	a	Persons having AB and B blood group
4	b	Siberia	4	a	age of palaeozoic
5	a	Birds	5	d	Cleavage
6	d	Atlas-Pelvic girdle	6	c	(i)-(C), (ii)-(A), (iii)-(B), (iv)-(D)
7	a	age of palaeozoic	7	b	Apis indica
8	d	errector pili	8	b	Eohippus
9	d	Cuvier	9	c	triangular
10	d	Y-chromosomes only	10	a	Endoplasmic reticulum
11	c	(i)-(C), (ii)-(A), (iii)-(B), (iv)-(D)	11	a	Birds
12	a	Persons having AB and B blood group	12	b	Siberia
13	d	Cleavage	13	d	Y-chromosomes only
14	b	Apis indica	14	d	Atlas-Pelvic girdle
15	c	triangular	15	d	135 g

**SECTION - II**

**Answer any six of the following**

**Question No.21 is compulsory**

**6x2 = 12**

16.	<b>"Ice Age"</b> 1. Pleistocene epoch 2. Several glaciations happened during this time and the melting of ice happened 1500 years ago.	1 1	2
17.	<b>Half Life</b> The time required for the breakdown of half the given quantity of unstable isotope is called the half-life.		2
18.	<b>Two edible crabs</b> 1. <i>Matuta lunaris</i> 2. <i>Scylla serrata</i> 3. <i>Portunus sanguinolentus</i> 4. <i>Charybdis cruciata</i>  any 2	2 x 1	2
19.	<b>Two rooted plants used in aquarium</b> 1. <i>Vallisneria</i> 2. <i>Myriophyllum</i>	2 x 1	2
20.	<b>Functions of B-lymphocytes :-</b> Synthesize antibodies for recognizing and neutralising alien macromolecules		2
21.	<b>Skin – referred to as "Jack of all trades"</b> Since the integument performs several functions( such as regulates body temperature, produces vitamin D,etc) it is commonly referred to as Jack of all trades.		2
22.	<b>Triploblastic animals – having ectoderm, mesoderm and endoderm as three layers in the body wall.</b>		2



27.	<p><b>Urey – Miller hypothesis</b></p> <ol style="list-style-type: none"> <li>To prove amino acids can be synthesized outside the living system.</li> <li>Gas mixture containing hydrogen, ammonia, methane, and water vapour was subjected to electric spark, this yielded aldehydes, amino acids and carboxylic acids.</li> <li>They visualised the existence of a similar situation and happening of events resulting in a large scale accumulation of diverse bio molecules in the primordial earth and these chemical incidents could have paved the way for the origin of a cellular organisation.</li> </ol>		3
28.	<p><b>Basic principle of a compound light microscope.</b></p> <p>This microscope uses visible light for illuminating the object.</p> <p>If contains two glass lenses, the object lens and the ocular lens or eye piece, in a hollow tube, to magnify the image of the object and focus the light on the retina of the observer's eye.</p> <p>A third lens – condenser lens located between the object and the light source which serves to focus the light on the object.</p> <p>Diagram</p>	2          1	3
29.	<p><b>Various units of measurement used in cell biology</b></p> <p>millimeters (mm) micrometres (<math>\mu\text{m}</math>) nanometres (nm) picometres (pm) Angstrom (<math>\text{A}^0</math>)</p>		3
30.	<p><b>In Human</b> - Plasmodium reproduce asexually – Rapid spore formation - affects liver cells, RBC and blood vessels get clogged.</p> <p><b>In Mosquito</b> - Plasmodium reproduce sexually – slow rate of reproduction – no damage to body tissues.</p>	1½       1½	3

31.	<p><b>The structure of the brain of pigeon</b></p> <ol style="list-style-type: none"> <li>Brain is divisible into fore ,mid and hind brain. Cerebral hemispheres are large, round and distinct. Olfactory lobes are small without cavities.</li> <li>Diencephalon is hidden by cerebellum. The diencephalon has pineal body dorsally and infundibullum and pituitary ventrally. Optic lobes are lateral and the medulla oblongata descends vertically from cerebellum.</li> </ol> <p>Diagram</p>	1  1  1	3
32.	<p><b>a) Lymph nodes :</b></p> <ol style="list-style-type: none"> <li>Small round structures 1-25 mm</li> <li>Found all over the body in three aggregations – inguinal nodes ,axillary nodes and cervical nodes.</li> <li>Contain sinuses lined with phagocytic cells.</li> </ol> <p><b>b) Tonsils :</b></p> <ol style="list-style-type: none"> <li>Largest lymph nodules</li> <li>Provide protection against bacteria and other harmful materials</li> <li>Found in three groups in the pharyngeal walls – palantine tonsils , pharyngeal tonsils ,lingual tonsils</li> <li>In adults tonsils decrease in size and may disappear</li> </ol>	1 ½      1 ½	3
33.	<p><b>Thymus :</b></p> <ol style="list-style-type: none"> <li>Roughly triangular, bilobed gland located in the mediastinum</li> <li>size varies with age at birth it weighs 10-15 g after puberty it greatly decreases in size</li> <li>surrounded by a thin capsule made of the connective tissue , inner layer – Medulla , outer layer – cortex lymphocytes found in cortex region.</li> </ol>	1  1  1	3

**SECTION - IV**

**Answer all question :**

**5 x 5 = 25**

<p><b>34. Primates are highly evolved - Justification</b></p> <ol style="list-style-type: none"> <li>1. It is an order coming under the subclass Eutheria , It includes man</li> <li>2. Brain development , Tree dwelling (arboreal), Omnivorous</li> <li>3. Body is covered with hairs except palm, sole and parts of faces ,The fore limbs are shorter than the hind limb , The limbs have five digits , All the digits end in flat nail</li> <li>4. The Pollex or thumb are smaller than other digits and are opposable.</li> <li>5. The eyes are directed forward and the vision is binocular and stereoscopic.</li> </ol> <p align="center"><b>(OR)</b></p> <p><b>Arterial system of Pigeon</b></p> <p>Diagram with parts</p> <p><b>Description</b></p> <p>Pulmonary and systemic artery</p> <p>Right aortic arch ,Branches systemic artery</p> <p>Dorsal aorta and its branches</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>1</p> <p>1</p> <p>1</p>	<p>5</p> <p>5</p>
<p><b>35. Diagram of an animal cell</b></p> <p>Diagram</p> <p>Parts</p> <p align="center"><b>(OR)</b></p> <p><b>Two circulation present in our body</b></p> <ol style="list-style-type: none"> <li>1. Systemic Circulation - Explanation</li> <li>2. Pulmonary Circulation - Explanation</li> </ol> <p>Diagram with parts</p>	<p>2</p> <p>3</p> <p>1½</p> <p>1½</p> <p>2</p>	<p>5</p> <p>5</p>

36.	<p><b>Structure of skin derivatives</b></p> <p><b><u>Hair :</u></b>  Description 1  Diagram ½</p> <p><b><u>Glands</u></b>  Description 1  Diagram ½</p> <p><b><u>Nails :</u></b>  Description 1½  Diagram ½</p> <p style="text-align: center;"><b>(OR)</b></p> <p><b><u>Sex anomalies in human beings</u></b></p> <ol style="list-style-type: none"> <li>1. Turner"s syndrome – Explanation 1</li> <li>2. Klinefelter"s syndrome- Explanation 1</li> <li>3. Super females- Explanation 1</li> <li>4. XYY – males – Explanation 1</li> <li>5. Hermaphroditism- Explanation 1</li> </ol>		5
37.	<p><b>Fossil and Fossilization Methods</b></p> <p>The fossils are the preserved remains of animals palnts or their parts found in various strata of earth.</p> <p><b>Methods :</b></p> <p>Petrifaction and Petrifaction of soft parts- Explanation 1</p> <p>Preservation of foot prints and Moulds and casts – Explanation 1</p> <p>Fossilization in resins and amber and Preservation in ice – Explanation 1</p> <p style="text-align: center;"><b>(OR)</b></p>	2	5

	<p><b>Pattern and causes of extinction</b></p> <p><b>Pattern of extinction</b></p> <p><b><u>Causes of extinction :</u></b></p> <ol style="list-style-type: none"> <li>1. A mass extinction may be due to drastic changes in the environmental conditions Any adaptive advance in one species decreases the fitness of all other species.</li> <li>2. Over specialisation to a specific situation may cause extinction The spread of an epidemic disease without any control can cause extinction An increase in the population strength of herbivorous animals can cause rapid food shortage</li> <li>3. A sudden cosmic radiation can cause the death of large organisms A dust storm formed due to falling of a meteorite is commonly mentioned as a cause for the disappearance of dinosaurs.</li> </ol>	<p>2</p> <p>1</p> <p>1</p> <p>1</p>	<p>5</p>
<p>38.</p>	<p><b><u>Economic importance of fishes</u></b></p> <ol style="list-style-type: none"> <li>1. Fish liver oil</li> <li>2. Fish body oil</li> <li>3. Fish meal</li> <li>4. Fish flour</li> <li>5. Fish manure and guano</li> <li>6. Fish glue</li> <li>7. Isinglass</li> <li>8. Fish skin</li> <li>9. Omega fatty acid - Explanation</li> </ol> <p style="text-align: center;">(OR)</p> <p><b><u>Process of gastrulation in frog</u></b></p> <p>Description</p> <p>Diagram</p>	<p>Explanation</p> <p><math>8 \times \frac{1}{2} = 4</math></p> <p>1</p> <p>3</p> <p>2</p>	<p>5</p> <p>5</p>