

HIGHER SECONDARY EXAMINATION MARCH – 2018
KEY FOR ZOOLOGY – ENGLISH VERSION

Note: Answer written only in BLACK or BLUE ink should be evaluated

Maximum Marks:150

PART – I

Each question carries 1 mark 30X1=30

Type A

Type B

1	a	Zona Radiata	1	c	IgE
2	c	Huntington's Chorea	2	d	(a) and (b)
3	a	Pinctada fucata	3	b	Acetylcholine
4	d	Lamarck	4	a	Pinctada fucata
5	b	Acetylcholine	5	c	21%
6	d	(a) and (b)	6	d	Diagrammatic representation of chromosomes
7	c	Cochin - Mediterranean breed	7	b	Relaxin
8	c	IgE	8	c	Cochin - Mediterranean breed
9	d	12 years	9	d	Lakshadweep island
10	c	Prothrombin	10	d	12 years
11	c	21%	11	c	Huntington's Chorea
12	a	125 ml/min	12	b	Right atrium
13	b	Relaxin	13	a	Multiple Sclerosis
14	c	Gutta – persa resin	14	a	Iodine
15	d	Diagrammatic representation of chromosomes	15	d	Protozoa
16	d	Dializer	16	b	(i) True (ii) False (iii) True (iv) False
17	d	Theory of Pangenesis	17	b	Mullberry leaves
18	b	Methane	18	d	Theory of Pangenesis
19	b	Mullberry leaves	19	d	Worker bee
20	b	Right atrium	20	a	Zona Radiata
21	a	Interferon	21	b	Tilapia mosambica
22	a	Multiple Sclerosis	22	a	Interferon
23	b	(i)True (ii) False (iii)True (iv) False	23	d	Dializer
24	b	Scotopic Vision	24	c	Gutta – persa resin
25	d	Protozoa	25	a	125 ml/min
26	b	Tilapia mosambica	26	b	Methane
27	a	C and G	27	c	Prothrombin
28	d	Lakshadweep island	28	d	Lamarck
29	d	Worker bee	29	b	Scotopic Vision
30	a	Iodine	30	a	C and G

PART II

Answer any Fifteen Questions

15X3=45

31	Essential aminoacids Arginine, Valine, Histidine, Isoleucine, Leucine, Lycine, Methionine, Phenylalanine, Threonine and Tryptophan		3
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32	Embolus, Thrombus Embolus: A portion of a thrombus clot becomes fragmented and enters the circulating blood. Thrombus: A blood clot within an intact blood vessel.	1 ½ 1 ½	3
33	Zoo- Anthroponoses: Infections in which man is not merely an incidental host but an essential link in the life cycle of the parasite	3	3
34	PUFA Poly unsaturated fatty acids Significance: 1.Capable of easier oxidative breakdown 2.Favoured for persons having high blood pressure. 3.Abundant in sunflower oil and safflower oil.	1 2	3
35	Functions of Calcitonin 1. Calcium-Lowering hormone 2.Antagonistic to that of parathormone. 3.inhibits bone resorption 4.inhibits the reabsorption of calcium, phosphorus, sodium,potassium,magnesium and other ions. 5.decreases gastric HCl secretion 6.decreases the insulin and glucagon secretion		3
36.	National Family Welfare Programme –schemes 1) Maternal and Child Health Care 2) Immunization of mothers ,infants and children 3) Nutritional supplement to pregnant women and to children 4) Contraception with health education		3
37.	Functions of Spleen 1) Graveyard for effete(aged) red blood cells 2) Reserve tank and setting bed for blood 3) Filter for trapping circulating blood borne foreign particles	3X1=3	3
38	Physiotherapy The therapaeutic exercise to make the limbs work normally	3	3
39	Pedigree Analysis 1. The scrutiny of established matings 2. To obtain information about the genetic characters or traits is called pedigree analysis	1½ 1½	3
40.	Differentiation : 1. Multitudes of cells arise by mitotic divisions of the fertilized egg cell 2. These cells later become distinct cell types differing in form and function. This process is called differentiation.	1½ 1½	3

41	<p>Reasons for cataract:</p> <ul style="list-style-type: none"> 1. Aging 2. Sunlight exposure 3. Smoking 4. Poor nutrition 5. Eye trauma 6. Diabetes mellitus 7. Infection and injuries 8. Steroids 9. German measles in pregnant mothers causes cataract in the child 	1	
		1	3
		1	
42	<p>Uses of stethoscope</p> <ul style="list-style-type: none"> 1. Helps to find normal (lub-dub) versus abnormal heart sounds (heart murmurs) 2. To diagnose valve function 3. Indicate fluid in lungs in case of pneumonia and pulmonary edema 4. Diagnose airway diseases like bronchitis and pleuritis. 5. Used to compare the movements in the normal versus overactive or underactive intestinal tract. 		3
43.	<p>Seeding of clouds Seeding clouds with dry ice or potassium iodide can initiate rain. If water laden clouds and conditions favour precipitation are present.</p>	3	3
44	<p>Prevention of Cow Pox</p> <ul style="list-style-type: none"> 1) Segregation of affected animal 2) Giving sloppy food for swallowing and digestion 3) Fomenting udder with warm disinfectant solution 4) Giving saline laxative and diuretics 5) Treating lesions with mild antiseptic ointment 6) Cow shed should be kept clean. 		3
45	<p>Royal jelly: Royal jelly is secreted by glands of nurse bees of the age of 6-12 days. It is very nutritious food and is fed to the young larvae and adult queen. (OR) Queen larvae are fed only royal jelly. The royal jelly (bee milk) is a salivary secretion of the worker bees</p>	3	3
46	<p>Asiatic Breeds of Chick</p> <ul style="list-style-type: none"> 1) Brahma 2) Cochin 3) Langshan 	3	3
47	<p>Hypophysation The hypophysation is a process of stimulating the breeding activity of fish through the injection of pituitary extract resulting timely release of eggs and sperms from the ripe gonads. Or Induced breeding technique enhances seed production. It is performed by a technique called hypophysation.</p>	3	3
48	<p>Hardy-Weinberg's law The relative frequencies of various kinds of genes in a large and randomly mating sexual population tend to remain constant from generation to generation in the absence of mutation, selection and gene flow or migration.</p>	3	3

49	Stages in Seri-culture 1) Cultivation of food plants (Plant origin) 2) Rearing of larvae (Animal origin) 3) Reeling of thread from cocoon (Technical origin)	3X1=3	3
50	Dropsy Caused by a bacterium Symptoms 1) Accumulation of water fluid in the body cavity 2) Inflation of intestine 3) Protrusion of scales and eyes.	1 1/2 1/2 1	3

PART III

Answer any seven questions including question No.56 which is compulsory

51	Carbohydrates and their significance Types of carbohydrates Monosaccharides 1) Trioses 2) Pentoses 3) Hexoses Disaccharides 1) Maltose 2) Sucrose 3) Lactose Polysaccharides 1) Starch, 2) Glycogen , 3) Chitin. 4) Cellulose Significance 1) Provide energy 2) Energy stored –ATP 3) 4.1calories	1 1/2 1 1/2 1 1	5
52	Pathogenic Adaptations 1) Pathogens are able to attach to the external or the internal surfaces 2) Penetrate the body surfaces and gain access to the internal tissues 3) In some infections the pathogen may remain localized growing near its point of entry 4) Some pathogen become widely distributed in tissues or organs 5) Pathogens can grow with in the cells of the host causing disturbances to physiological processes 6) Pathogen may grow extracellular and bring damage by elaborating substances called toxin	1/2 1/2 1 1 1 1	5
53	Control and preventive measures of AIDS 1) Screening of blood and blood products 2) Education to people –bringing more awareness 3) Education about protected sexual behavior and practices 4) Participation of voluntary agencies teachers ,NGO's paramedical workers several other voluntary health organization in AIDS awareness programmes 5) Making the antiretro viral drugs such as AZT's available to the patients	5X1=5	5

54	Functions of skin <ol style="list-style-type: none"> 1) Effective barrier against infection 2) Prevents dehydration, defense against chemical, osmotic, thermal and photic damage 3) Limits and regulates heat loss 4) Major sensory surface with a range of receptors 5) It has limited excretory and absorptive function 6) Helps in the formation of Vitamin D 7) Characteristic texture helps in movement and handling various substances 		5
55	Ozone is a natural Sun-block <ol style="list-style-type: none"> 1. Electromagnetic radiation emitted from the sun includes UV radiation – Damage DNA 2. 1% reduction in ozone or no ozone the amount of UV radiation reacting us would be high. All living things would suffer. 3. Ozone formation and destruction occur at about the same rate. The total amount of ozone usually stay constant 4. Human activity has recently changed the natural balance. 5. CFC and HCFC destroy ozone faster than it is formed. 	5X1=5	5
56	Waste water treatment and management (Compulsory Question) <p>Coagulation Settling Filtration Aeration Chlorination</p> Primary treatment <p>Treatment of sewage Mechanical filtration Screening and settling Chlorination Removes 50 -65 % suspended solids</p> Secondary Treatment <p>Organic wastes are transformed by bacteria Oxygen is provided by aeration Consisting largely of bacterial masses (Anaerobic digester)</p>	<p>1</p> <p>2</p> <p>2</p>	5
57	Prevention of graft rejection <ol style="list-style-type: none"> 1) Blood group estimation in the host 2) Testing for the cytotoxic antibodies in the host serum 3) Cross matching of tissues prior to transplantation 4) Giving immunosuppressive drugs like cyclosporine and steroids to the host 5) Total lymphoid tissue irradiation 	5X1=5	5
58	Formation of silk <ol style="list-style-type: none"> 1) Silk glands (modified salivary gland) Silk is the result of secretion of silk glands. There are two long tubular ,coiled glands lying one on each of the alimentary canal of the caterpillar 	1	

	<p>2) Spinneret The spinneret is a part of the hypopharynx (tongue) As the liquid secretions of the two glands pass through the spinneret, it transforms them into a single thread</p> <p>3) Fibroin It is a fibrous protein insoluble in water secreted by silk glands. It is made up of glycine, alanine and tyrosine</p> <p>4) Sericin Another secretion produced by a pair of accessory glands cause the two fibers of fibroin to unite. Two streams of fibroin along with sericin are expelled through the spinneret due to contraction and expansion of the body of the caterpillar. This sticky secretion when comes in to contact with the air is converted into a fine, long and solid thread of silk.</p>	1 1 2	5
59	<p>Characters of cultivable fish</p> <ol style="list-style-type: none"> 1) Rate of growth 2) Adaptation to climate 3) Tolerance 4) Acceptance of artificial feed 5) Resistance 6) Amiability and compatibility 7) Conversion efficiency 8) Consumer's preference 		5
60	<p>Features of Macrobrachium rosenbergii.</p> <ol style="list-style-type: none"> 1) Grows to a maximum size of 320 mm weighing 200 gms 2) Matured males are larger than females 3) Possess enlarged second pair of walking legs 4) The juveniles can be identified by 1-8 horizontal lines on the carapace 5) Distributed from lower to upper surface of river 6) It prefers shallow and muddy environment. 7) In the absence of natural food these animals become cannibals. 		5
61	<p><u>Sewel-wright effect:</u></p> <ol style="list-style-type: none"> i) In a small population not all the alleles which are representatives of that species may be present. ii) In such a small population a chance event may increase the frequency of a character that has little adaptive value iii) Thus the genetic drift may remain a significant factor in the origin of new species on islands and other isolated populations - speciation iv) Founder principle v) Bottle neck effect 	1 1 1 1 1	5
62	<p>Prospects of aquaculture</p> <ol style="list-style-type: none"> 1) There is an increasing global demand for food. It is predicted that in another 15 years animal proteins alone will provide 40% of the world's need 2) As the growing population needs more food increased aquaculture production would reduce the pressure on natural population 3) Helps to promote economic development in rural and under developed areas. 		5

	<p>4) Culture of selected varieties of fish will help in good yield of commercial forms</p> <p>5) The desirable fish being cultured in pond makes the process of harvesting easy and economical</p> <p>6) Fishes are healthy sources of animal proteins and are easy to digest and such an animal protein can be harvested on demand</p>		
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PART IV

Answer any four questions:

4X10=40

63	<p>Menstrual Cycle Menstrual Cycle - Definition 1. Follicular phase or proliferative phase – Explanation 2. Luteal phase or Premenstrual phase – Explanation 3. Menstrual phase – Explanation Diagram with parts</p>	<p>2 2 2 2 2</p>	10
64.	<p>Inspiration and Expiration Inspiration – Explanation Any one diagram Expiration – Explanation Any one diagram</p>	<p>4 1 4 1</p>	10
65.	<p>Cerebrum occupies major area in the cranial cavity</p> <p>Functioning mechanism Cerebral cortex- primary sensory area</p> <p>Association area- process of Recognition, sensory stimulus. Visual association area compared with past experiences – which influence decisions. Two people who witness the same event can present somewhat different version of what happened.</p> <p>Primary Motor area: Controls many voluntary movements</p> <p>Pre motor area: Motor functions are organised before they are initiated in the motor cortex. If a person decides to lift a hand the neurons of the pre motor area are stimulated first. Pre frontal area well developed in primates and humans. foresight to plan and initiate movements.</p> <p>Diagram with parts.</p>	<p>1 1 3 1 2 2</p>	10
66.	<p>Human Genome Project Human genome project definition Human gene bank Proteomics Protein coding genes Significance and Benefit of HPG</p>	<p>1 1 2 1 5</p>	10

67	<u>Viral diseases in human beings</u> 1. Cancer and viruses Explanation 2. Rabies virus and Rabies Diseases Explanation 3. Pox Virus Explanation 4. Hepatitis B virus Explanation	$\frac{1}{2}$ } 2 } $\frac{1}{2}$ } 2 } $\frac{1}{2}$ } 2 } $\frac{1}{2}$ } 2 }	10
68	Poultry Farming methods Factors for the growth of poultry farming Rearing Stages Selection of eggs Incubation and hatching Brooding Factors involved in brooding Housing of poultry Poultry feeding Poultry byproducts	1 1 2 1 2 1 1 1 1	10
69	Management of Hazardous waste Hazardous waste - definition Land fills Deep well injection Surface impoundments Incineration Bioremediation	1 2 2 2 1 2	10
70.	Types of Oysters Characters of Oysters Methods of oyster cultures 1. Raft culture 2. Rack culture 3. Pole culture 4. Long line culture	1 3 $1\frac{1}{2}$ $1\frac{1}{2}$ $1\frac{1}{2}$ $1\frac{1}{2}$	10