2019

B.Sc. (Hons)

4th Semester Examination

ZOOLOGY

Paper - C8T

Full Marks : 40   Time : 2 Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.

1. Answer any *five* questions   5×2=10

   (a) What do you mean by Wolffian and Mullerian ducts ?

   (b) What is foramen of paniza ?

   (c) What are remiges and rectrices ?

   (d) What is corpus callosum ?

   (e) Write the names of ectodermal layers of mammalian skin.

[Turn Over]

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(f) Why the number of aortic arches have been reduced in higher vertebrates ?

(g) Distinguish between atlas and axis vertebrae.

(h) What is beleen ?

2. Answer any *four* questions : 4×5=20

(a) Classify different types of dentition in mammals.

5

(b) Describe the structure of heart in dipnoi. 1+4

(c) Distinguish between horn and antler. Write names of the integumentary derivatives of birds. 3+2

(d) Give a general account of succession of kidney in vertebrates. 5

(e) What is jaw suspension ? Give an account of types of jaw suspension in vertebrates. 1+4

(f) Write short notes on (i) air sac in birds and (ii) cloacal bladder in reptiles. 2½+2½

3. Answer any *one* question : 1×10=10

(a) Give a comparative account of aortic arches in amphibians, reptiles and mammals. Mention the significance of aortic arches. 3+3+2+2

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(3)

(b) Describe the structure of stomach of herbivorous mammal. Add a note on craninal nerves of mammals. 5+5

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ZOOLOGY

Paper - C9T

Full Marks : 40   Time : 2 Hours

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in their own words as far as practicable.

Group A

1. Answer any *five* questions of the following :   5×2

   (a) What is juxtaglomerular apparatus ?

   (b) Mention the basis of ABO blood grouping system.

   (c) Mention the function of cholecystokin.

   (d) Define cardiac output. What is its normal value in human ?   1+1=2

[Turn Over]

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(e) What will happen if a Rh^- woman marries a Rh^+ man ? Why ?   ½+1½

(f) What are the effects of CO poisoning ?   2

(g) Why are HSCs known as Multi-potent stem cells ?   2

(h) Represent oxygen dissociation curve graphically.   2

Group B

2. Answer any *four* questions of the following :   4×5

(a) Describe the steps of urea synthesis from ammonia mentioning the names of different catalyzing enzymes of every steps.

(b) Draw and describe the action potential curve of cardiac impulse.

(c) Describe the different blood coagulating factors and their role in blood clotting process.

(d) What is chloride shift ? Describe the mechanism of chloride shift.   1+4

(e) Describe the various functions of bile.   5

(f) Elaborate the process of carbohydrate digestion in small intestine.   5

Group C

3. Answer any *one* question of the following :   1×10

(a) State the difference between osmoconformers and osmoregulators. With a labelled diagram discuss the mechanism of osmoregulation of marine teleosts.   2+(2+6)=10

(b) Describe the counter-current mechanism in urine formation. Add a note on JGA.   7+3

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2019

B.Sc. (Hons)

4th Semester Examination

ZOOLOGY

Paper - C10T

Full Marks : 40   Time : 2 Hours

The figures in the margin indicate full marks.
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in their own words as far as practicable.

Group A

1. Answer any *five* questions of the following :   5×2

   (a) Name two pattern recognition receptors which are located in the cytoplasm.

   (b) Differentiate between Innate and Adaptive immunity.

   (c) Which class of antibody is first formed during B-cell development. Write the full form of ELISA.   1+1=2

[Turn Over]

(d) What is a Toxoid ? Give one example of a Toxoid vaccine. 1+1=2

(e) What are autoimmune diseases ?

(f) How does affinity differ from avidity ?

(g) What is meant by adjuvant ? State the composition of Freund's complete adjuvant.

1+1

(h) Highlight the immunological significance of MAC (Membrane Attack Complex)

Group B

2. Answer any *four* questions of the following : 4×5

(a) Discuss the phenomena of antibody - dependent enhancement of dengue infection.

(b) (i) What is opsomization ?

(ii) Write the full form of ROS and PAMP.

3+2

(c) What are CD markers ? What are their functions? Name two CD markers that are present on T-cell. 2+2+1

Reaction oxygenates species

(3)

(d) Schematically represent the pathway of presentation of exogenous and endogenous antigens by MHC molecules.   2½+2½

(e) What is anaphylaxis ? Write down the mechanism involved in anaphylaxis.   2+3

(f) What is meant by monoclonal antibody (mAb)? Name the technique employed for production of mAb. State the advantages of mAb over polyclonal antibody (pAb).   2+1+2

Group C

3. Answer any *one* question of the following :   1×10

(a) (i) What are the differences between B-cell and T-cell epitopes ?   2

(ii) State whether the following statement is true or false : "Each lymphocyte carries cell-surface receptors with multiple antigen specificity."   1

(iii) Discuss how three signals are required for proper activation and effector function of T-cells.   7

[Turn Over]

(b) Briefly describe the basic structure of the immunoglobulin molecule along with a suitable diagram.

What do you understand by isotype, allotype and idiotype. Give suitable examples for each.

4+6

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4th Semester Examination

ZOOLOGY

Paper - SEC2T

Full Marks : 40   Time : 2 Hours

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in their own words as far as practicable.

Medical Diagnostic Techniques

1. Answer any *five* questions :   5×2=10

   (a) What is ESR ?

   (b) What is PCV ?

   (c) Write two abnormal constituents of urine.

   (d) Distinguish between MRI and CT scan

   (e) What is antibiotic sensitivity test ?

[*Turn Over*]

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(f) What is malignant tumor ?

(g) Distinguish between Type I and Type II diabetes mellitus.

(h) Name the organ which is primarily affected in tuberculosis. State the causative agent of tuberculosis.

2. Answer any *four* questions :   4×5=20

(a) Below is a list showing certain conditions or constituents of urine which are normally not present in the urine. What does each of these conditions / constituents indicates about the health of an individual ?   5

Condition / Constituents	Indications
i) Urine amount exceeds 2000 ml / 24 hours	
ii) Sugars in urine	
iii) Presence of haemoglobin	
iv) High amount of bilirubin	
v) Calculi in urine	

(b) What is haemocytometer ? Briefly describe the process of platelet counting process. Write the normal value of platelet in blood.   1+3+1=5

(c) Give a brief account of lipid profiling. Write a short note on abnormality of lipid value in blood.

3+2

(d) Discuss the diagnosis and prevention of Diabetes Type I.

2+3

(e) Define Primary and Secondary hypertension. Write the causes of secondary hypertension.

2½+2½

(f) What is CT scan. Write the application of CT scan in medical diagnostics.

1+4

3. Answer any *one* question :

1×10

(a) Write the name of four different types of malarial parasites. Write the symptoms of malaria infection. Briefly describe Pre-erythrocytic and Erythrocytic cycle of malarial parasite.

2+2+6

(b) What is cancer ? Describe briefly about the detection of cancers ? What is metastasis ? Briefly describe the principle and functional approach of PET and MRI.

2+2+2+4

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[*Turn Over*]

Sericulture

1. Answer any *five* questions :   5×2=10

   (a) What do you mean by rendita ? State its utility.

   (b) Write the names of two non-mulberry silkworm.

   (c) What is cocoon ?

   (d) What is instar ?

   (e) What is moriculture ?

   (f) Write the name of two important proteins present in silk.

   (g) Mention the importance of installing P_1, P_2 and P_3 stations in sericulture.

   (h) What is Pebrine ?

2. Answer any *four* questions :   4×5=20

   (a) Briefly describe different indigenous and exotic races of silk moth.   2½+2½

   (b) Distinguish between mulberry and non-mulberry silkworm with suitable examples.   2½+2½

   (c) What are the role of temperature and humidity in silkworm rearing ?   2½+2½

3. A

   (a

   (b)

3/7/83-1800

(d) Briefly discuss about the spinning process of silk and storage of silk cocoons. 2½+2½

(e) What is disinfectants ? Write the role of formalin and bleaching powder in silk worm rearing process. 1+4

(f) Briefly discuss about the size, shape and construction process of a typical rearing house for silkworm. What is Chandraki ? 4+1

3. Answer any *one* question : 1×10=10

(a) Describe the life cycle of *Bombyx mori* with suitable diagram. Write short note on voltinism.
5+2+3

(b) (i) Name one fungal and one viral diseases of silkworm along with their causative agent, symptoms and control measures. 5

(ii) State the location of the silk gland in silkworm. 1

(iii) Give a labelled diagram of a silk gland and mention the functions of each part.
2½+1½=4

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UG/4th Sem/Zoo/19 (Pr.)

2019

B.Sc.

4th Semester Examination

ZOOLOGY (Honours)

Paper - C10P

[Practical]

Full Marks : 20   Time : 3 Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.

1. Determine the group of your own blood sample following proper experimental protocol and comment on your result.   3+2=5

2. Identify the following (A and B) with reasons.

   [Reasons - 2 marks, Indentification 1 marks]
                                              3×2=6

3. Comment on the working principle and application of ELISA.   3+1=4

[Turn Over]

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(2)

4. Laboratory Note book.   2

5. Viva Voce.   3

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