

B.Sc. 4th Semester (Programme) Examination, 2019

ZOOLOGY

Paper : 404/SEC-2

[Aquarium Fish Keeping (Economic Zoology)]

Course ID : 42610

Time : 2 Hours

Full Marks : 40

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

*দক্ষিণ প্রান্তস্থ সংখ্যাগুলি প্রশ্নের পূর্ণমানের নির্দেশক।
পরীক্ষার্থীদের যথাসম্ভব নিজের ভাষায় উত্তর দিতে হবে।*

1. Answer any five of the following questions:

2×5=10

নিম্নলিখিত প্রশ্নগুলির মধ্যে যে কোনো পাঁচটির উত্তর দাও :

(a) What are Ornamental fishes?

Ornamental fish কাকে বলে?

(b) Mention two economic importance of the Aquarium Fish Keeping.

Aquarium fish keeping-এর দুটি অর্থনৈতিক গুরুত্ব লেখো।

(c) Mention two foods for aquarium fishes.

Aquarium Fish-দের দুটি খাবারের নাম উল্লেখ করো।

(d) Name two famous Aquariums of India.

ভারতের দুটি বিখ্যাত Aquarium-এর নাম করো।

(e) What is Gold fish?

Gold fish কী?

(f) Define Aquarium fish Keeping.

Aquarium fish Keeping-এর সংজ্ঞা দাও।

(g) Mention the names of four aquarium fishes.

চারটি Aquarium fish-এর নাম লেখো।

(h) Write some important factors associated with live fish transport.

জীবিত মাছ পরিবহনের কিছু গুরুত্বপূর্ণ শর্ত উল্লেখ করো।

2. Answer *any four* of the following questions:

5×4=20

নিম্নলিখিত প্রশ্নগুলির মধ্যে যে কোনো চারটির উত্তর দাও :

- (a) Draw a labelled diagram of an aquarium and describe its different components.
চিহ্নিত চিত্র সহযোগে একটি Aquarium-এর বিভিন্ন অংশের বর্ণনা দাও।
- (b) Give an account of different types of Aquarium Fish Foods.
বিভিন্ন রকমের Aquarium Fish Food সম্পর্কে আলোচনা করো।
- (c) Write a short note on aquarium maintenance.
Aquarium maintenance-এর উপর একটি টীকা লেখো।
- (d) Mention the important characteristics of the aquatic ecosystem of an aquarium.
একটি Aquarium-এর জলজ বাস্তুতন্ত্রের গুরুত্বপূর্ণ বৈশিষ্ট্যগুলি লেখো।
- (e) Describe the life cycle of any aquarium fish.
যে কোনো একটি aquarium fish-এর জীবনচক্র বর্ণনা করো।
- (f) Describe different steps of live fish transport.
জীবিত মাছ পরিবহণের বিভিন্ন ধাপগুলি আলোচনা করো।

3. Answer *any one* of the following questions:

10×1=10

নিম্নলিখিত প্রশ্নগুলির মধ্যে যে কোনো একটির উত্তর দাও :

- (a) Explain scopes of Aquarium Fish Farm as a cottage industry in India.
ভারতবর্ষে কুটির শিল্পরূপে Aquarium Fish Farm-এর সুযোগ সম্পর্কে আলোচনা করো।
- (b) Describe the common characters of some fresh water and marine aquarium fishes.
মিঠাজল এবং সামুদ্রিক জলে বসবাসকারী কিছু aquarium fish-এর সাধারণ বৈশিষ্ট্যসমূহ আলোচনা করো।

B.Sc. 4th Semester (Honours) Examination, 2019

ZOOLOGY

(Sericulture)

Paper : 405/SEC-2

Course ID : 42615

Time : 2 Hours

Full Marks : 40

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

1. Answer *any five* of the following questions: 2×5=10
- (a) Name two Economic Branches of Zoology.
 - (b) Define moriculture.
 - (c) Which state in India ranked first in silk production?
 - (d) What is 'Chasam'?
 - (e) Define 'Chandraki'.
 - (f) Name two diseases of Silk moth.
 - (g) What is Rendita or 'Denier'?
 - (h) Give the scientific name of Muga Silk moth.
2. Answer *any four* of the following questions: 5×4=20
- (a) Describe the 5th instar larva of Mulberry silk moth with labelled diagram. 3+2=5
 - (b) Name the major four (4) types of silk, silk moths (Scientific name) with their host plants (Scientific name). 1+2+2=5
 - (c) What is Silk? Why silk is called the Golden fibre, of textile industry? Mention four (4) major properties of silk. 1+2+2=5
 - (d) What is Silk gland? Describe the structure of Silk gland with suitable diagram. 1+2+2=5
 - (e) Define voltinism. Mention the characteristics features of a typical rearing house of silkworm.
 - (f) Name the protozoan-and-bacterial disease of Silkworm, their Pathogen and control measures. 2+2+1=5

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

(a) What is sericin and fibroin? Describe the life cycle of a Mulberry silk moth with the suitable diagram. 1+6+3=10

(b) Write short notes on (*any two*): 5×2=10

(i) Pests of Silk worm.

(ii) Non Mulberry Sericulture.

(iii) Rearing appliances of Silkworms.

(iv) Prospects of Sericulture in India.

B.Sc. 4th Semester (Honours) Examination, 2019**ZOOLOGY****(Aquarium Fish Keeping)****Paper : 405/SEC-2****Course ID : 42615****Time : 2 Hour****Full Marks : 40**

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

1. Answer *any five* of the following questions: 2×5=10
- (a) Define virtual aquariums.
 - (b) Why is an aquarium tank made of glass?
 - (c) Define fish.s
 - (d) How do butterfly fish reproduce?
 - (e) Comment on the role aquarium fish keeping in self-employment.
 - (f) What is Sexual dimorphism?
 - (g) Mention four important equipments used for fish handling.
 - (h) Mention two economic importances of aquarium.
2. Answer *any four* of the following questions: 5×4=20
- (a) Differentiate between the male and female molly fish. Write down the names of two varieties of gold fish. 3+2=5
 - (b) Write short note on Aquarium maintenance.
 - (c) Describe “Nitrogen Cycle” of an aquarium. Which chemical is used in mosquito foggers? 4+1=5
 - (d) Describe the symbiotic relationship of aquarium Anemone fish.
 - (e) Differentiate between exotic-and endemic-species of aquarium fishes with examples.
 - (f) Explain—“Aquarium fish as larval predator”.

Please Turn Over

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

(a) Give an account on packing and forwarding techniques of live fish transportation. Describe the potential scope of aquarium fish industry as a cottage industry. 6+4=10

(b) Describe the preparation and composition of formulated fish feeds. Give an account of live fish feed organisms. 6+4=10

B.Sc. 4th Semester (Programme) Examination, 2019

ZOOLOGY

Paper : 401/C-1D

(Vertebrate)

Course ID : 42618

Time : 1 Hour 15 Minutes

Full Marks : 25

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

*দক্ষিণ প্রান্তস্থ সংখ্যাগুলি প্রশ্নের পূর্ণমানের নির্দেশক।
পরীক্ষার্থীদের যথাসম্ভব নিজের ভাষায় উত্তর দিতে হবে।*

1. Answer any five of the following questions:

1×5=5

নিম্নলিখিত প্রশ্নগুলির মধ্যে যে কোনো পাঁচটির উত্তর দাও :

(a) Mention the peculiarities of notochord in *Branchiostoma*.

Branchiostoma-এর notochord-এর বিশেষত্ব উল্লেখ করো।

(b) Justify the name 'Cyclostomata'.

Cyclostomata নামের তাৎপর্য লেখো।

(c) What is Siphonoglyphos type of fang?

Siphonoglyphos fang কী?

(d) Distinguish between Synapsid and Diapsid skull.

Synapsid ও Diapsid খুলির পার্থক্য উল্লেখ করো।

(e) Cite examples of a bird which can cover highest longitudinal and altitudinal distance.

সর্বাধিক অনুদৈর্ঘ্য পরিযান ও সর্বোচ্চ অনুলম্ব পরিযান করতে পারে এমন পাখির নাম লেখো।

(f) What do you mean by echolocation?

Echolocation বলতে কী বোঝো?

(g) What is 'Bastard wing'?

Bastard wing কী?

(h) Name two mammal species inhabiting Oriental Realm.

Oriental Realm-এর দুটি স্তন্যপায়ী প্রাণীর নাম লেখো।

2. Answer any two of the following questions:

5×2=10

নিম্নলিখিত প্রশ্নগুলির মধ্যে যে কোনো দুটির উত্তর দাও :

(a) Name and describe briefly four organs which perform the excretory function in *Branchiostoma* along with a note on their roles. 2+3=5

সংক্ষেপে *Branchiostoma*-এর রেচনে অংশগ্রহণকারী চারটি অঙ্গের নাম লেখো এবং রেচনে ওই অঙ্গগুলির ভূমিকা বর্ণনা করো।

(b) “All vertebrates are chordates, but all chordates are not vertebrates.”— Justify the statement.

“সকল vertebrate হল chordates, কিন্তু সকল chordates vertebrates নয়”—এই বক্তব্যের যৌক্তিকতা দেখাও।

(c) Mention the type of skull found in snake. Name the muscles and bones associated with biting mechanism in snake with suitable diagram. 1+(2+2)=5

সাপে কী ধরনের খুলি পাওয়া যায়? কামড়ানোর সময় ব্যবহৃত সাপের পেশিগুলির ও হাড়গুলির নাম চিত্রসমেত লেখো।

(d) Name a legless amphibia. Mention its order. What do you mean by metamorphosis?

1+1+3=5

পা-বিহীন একটি উভচর প্রাণীর নাম এবং সেটি কোন বর্গের অন্তর্ভুক্ত লেখো। Metamorphosis বলতে কী বোঝো?

3. Answer any one of the following questions:

10×1=10

নিম্নলিখিত প্রশ্নগুলির মধ্যে যে কোনো একটির উত্তর দাও :

(a) Classify Amphibia upto living orders with examples (scientific names).

উভচরের বর্গ অবধি উদাহরণ (বিজ্ঞানসম্মত নাম) সমেত শ্রেণিবিন্যাস করো।

(b) What do you mean by cambered shape of wing? State the Bernoulli's law on aerodynamics.

Comment on hovering flight with suitable diagram. What is 'Aspect ratio'? 2+2+(2+2)+2=10

Cambered shape of wing বলতে কী বোঝো? Bernoulli's law on aerodynamics সম্পর্কে লেখো।

Hovering flight-এর উপর চিত্রসহ টীকা লেখো। Aspect ratio কী?

B.Sc. 4th Semester (Honours) Examination, 2019

ZOOLOGY

Paper : 401/C-8

(Comparative Anatomy of Vertebrates)

Course ID : 42611

Time : 1 Hour 15 Minutes

Full Marks : 25

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

1. Answer *any five* of the following questions: 1×5=5
 - (a) Define hyostylic Jaw suspension.
 - (b) What is OS-innominatum?
 - (c) What is thecodont dentition?
 - (d) Define venous heart.
 - (e) What is foramen of pannizza?
 - (f) What is Mullerian duct?
 - (g) What do you mean by Nociceptors?
 - (h) What is foramen of magnum?

2. Answer *any two* of the following questions: 5×2=10
 - (a) Differentiate between the horn and antler. Write the structural features of a typical feather. 2+3=5
 - (b) Briefly describe the structure of a fish brain. Add a note on the distribution of Xth cranial nerve. 4+1=5
 - (c) Differentiate between the mesonephros and metanephros kidney with suitable diagrams. 3+2=5
 - (d) Write down the modifications of aortic arches in birds with suitable diagrams. 3+2=5

3. Answer *any one* of the following questions: 10×1=10
 - (a) Briefly describe the structure of a ruminating stomach with suitable diagram. Differentiate between the simple and duplex uterus in mammals. (6+2)+2=10
 - (b) Briefly describe the structure of respiratory organ of birds with suitable diagram. Define double respiration. (5+3)+2=10

SH-IV/ZOO/402/C-9/19**B.Sc. 4th Semester (Honours) Examination, 2019****ZOOLOGY****(Animal Physiology, Life Sustaining Systems)****Paper : 402/C-9****Course ID : 42612****Time : 1 Hour 15 Minites****Full Marks : 25**

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

- 1. Answer any five questions:** 1×5=5
- (a) Why SA node is named as such and mention its location on heart?
 - (b) Which type of bile is more alkaline and why?
 - (c) What is Crocodile's Tear?
 - (d) How many amino acids are present of a haemoglobin molecule?
 - (e) Define Bohr effect.
 - (f) What is Mastigation and Deglutition?
 - (g) Define Vasa recta.
 - (h) What is Diastasis?
- 2. Answer any two questions:** 5×2=10
- (a) Define Bombay Phenotype. Describe the different types of antigen and antibody present in ABO Blood Group. 1+2+2=5
 - (b) Define Podocytes. Describe the counter current multiplier system of urine formation with neat diagram. 1+4=5
 - (c) Define "Polymorphonuclear Leucocytes"? Describe the different types of leucocytes in respect to
 - (i) Morphology
 - (ii) Percentage and
 - (iii) Functions 1+2+1/2+1/2=5
 - (d) What is Apex of Heart? Mention the different types of Junctional tissue of mammalian heart with their functions. 1+4=5

3. Answer *any one* question:

10×1=10

(a) Define Embolus and Thrombus. How CO₂ is carried from the tissue to lungs through blood in the form of Bicarbonate salts with suitable diagram. Define Chloride shift.

1+1+6+2=10

(b) What is Osmoconformer and Osmoregulators? Describe the process of Osmoregulation of an anadromous and a catadromous fish during migration.

1+1(4+4)=10

B.Sc. 4th Semester (Honours) Examination, 2019

ZOOLOGY

Paper : 403/C-10

(Immunology)

Course ID : 42613

Time : 1 Hour 15 Minutes

Full Marks : 25

*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* of the following questions: 1×5=5
- (a) What is MAC?
 - (b) What is CTL?
 - (c) Define MALTs.
 - (d) What is ADCC?
 - (e) Differentiate between immunogen and allergen.
 - (f) State the function of IgE.
 - (g) What is Opsonization?
 - (h) What is immunological memory?
2. Answer *any two* of the following questions: 5×2=10
- (a) Briefly describe type I hypersensitivity. What is atopy? 4+1=5
 - (b) Briefly describe the structure of an immunoglobulin molecule. 5
 - (c) What is TCR? How it recognises the antigen bound MHC? Describe it with suitable illustration. 2+3=5
 - (d) What are DNA vaccines, booster dose, and clonal anergy? 2+2+1=5
3. Answer *any one* of the following questions: 10×1=10
- (a) Briefly describe the cytosolic pathway of antigen presentation with suitable diagram. Comment on the sandwich ELISA. 8+2=10
 - (b) How CTL is responsible for killing a pathogen infected cell? State the function of Treg Cells. What are Cytokines and how it is different from Chemokines? 5+2+2+1=10
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SH-IV/ZOO/403/CP-10/(PR)/19

B.Sc. 4th Semester (Honours) Practical Examination, 2019

ZOOLOGY

Paper : 403/CP-10

(Immunology Lab)

Course ID : 42623

Time : 2 Hours

Full Marks : 15

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Answer all questions.

1. Identify the histological slides with reasons (A & B). Mention at least three specific characters. 2×2=4
(Identification ½ mark. Reasons 1½ marks).
 2. Prepare a temporary stained blood film. Identify any one white blood cell and draw it. 6
(Preparation–4 marks. Identification–1 mark. Drawing–1 mark).
 3. Determine the Bleeding Time (BT) of your blood. 3
(Experiment–2 marks. Result–1 mark).
 4. Submit Laboratory Notebook. 2
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SH-IV/ZOO/403/CP-10/(PRI)/19

B.Sc. 4th Semester (Honours) Practical Examination, 2019

ZOOLOGY

Paper : 403/CP-10

(Immunology Lab)

Course ID : 42623

Instructions to the Examiners.

1. For Question No. 1, (identification with reasons) two items (A and B) should be selected from the list of the syllabus.
2. For Question No. 2 and 3, proper precaution should be maintained.
3. For Question No. 4, emphasis should be given on covering all the practical items, scientific drawing and regular sign by the respective teachers.

SH-IV/ZOO/401/C-8/(PR)/19

B.Sc. 4th Semester (Honours) Practical Examination, 2019

ZOOLOGY

(Comparative Anatomy of Vertebrates/Lab)

Paper : 401/C-8

Course ID : 42621

Time : 2 Hours

Full Marks : 15

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

1. Identify the specimen (skeletal structure) (A, B and C with) reasons. 2×3=6
(Identification : ½, Characteristic features – 1½).
 2. Mount and stain the specimen provided. 1+1=2
(Mounting : 1, Staining : 1)
 3. Dissect and display the part of the specimen provided. Draw a neat diagram and label the parts. 3+1+1=5
(Dissection and display – 3; Drawing – 1; Labeling – 1).
 4. Submission of the Laboratory notebook. 2
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SH-IV/ZOO/401/C-8/(PRI)/19

B.Sc. 4th Semester (Honours) Practical Examination, 2019

ZOOLOGY

(Comparative Anatomy of Vertebrates)

Paper : 401/C-8

Course ID : 42621

Instructions to the Examiners.

1. Necessary arrangements may please be made before the date of commencement of practical examinations.
2. For Question No 1, three specimens are to be selected taking one from skull/carapace plastron, one from vertebrae and one from girdle.
For Question No 1, separate loose sheets should be supplied to the candidates in the identification hall and should be collected within schedule time.
The loose sheets are to be attached with the main answer scripts after evaluation and duly signed by the examiner.
3. For question No 2, one mounting and staining from the followings may be allotted:
 - (a) Placoid scale
 - (b) Ctenoid scale
 - (c) Cycloid scalePlease write the selected mounting (for the students) on the blackboard kept in the laboratory. Instruct the examinees to write the allotted mounting on the first right page of the answer script and should be duly signed by the examiner.
4. For question No 3, one dissection from the followings may be allotted:
 - (a) Afferent branchial arterial system of carp
 - (b) IXth and Xth cranial nerves of carpPlease write the selected dissection (for the students) on the blackboard kept in the laboratory. Instruct the examinees to write the allotted dissection of the first right page of the answer script and should be duly signed by the examiner.
Examinees have to draw the labeled diagram of the dissection.
5. During assessment of laboratory notebook all items of the syllabus should be covered by the candidate and signed regularly so that distinction can be offered to the deserving candidates.
6. Only the examiner and laboratory personnel's should be allowed in the laboratory during examination.
7. Full name and signature together with address of the examiners should be enclosed with the answer scripts.
8. After completion of examination the answer scripts should be enclosed in a sealed packet containing top sheet. Award list should be separately submitted.

SH-IV/ZOO/402/C-9(PR)/19

B.Sc. 4th Semester (Honours) Practical Examination, 2019

ZOOLOGY

Paper : 402/C-9

(Animal Physiology: Life Sustaining System Lab)

Course ID : 42622

Time : 2 Hours

Full Marks : 15

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

1. Enumerate RBC or WBC from any mammal using haemocytometer. Put down the total count of RBC or WBC/ml. 6+2=8

(Preparation–6 marks, Result–2 marks)

Or,

Estimate haemoglobin content of blood from any mammal using Sahli's haemoglobinometer in mg/ml. Write down the procedure of the experiment. 6+2=8

2. Determine your own blood group using the method for ABO blood grouping. Write down the procedure for ABO blood grouping elaborating the reactions involved. 3+2=5

Or,

Prepare haemin crystal with enriched RBC from mammalian blood. Draw and label a haemin crystal. 3+1+1=5

Or,

Record blood pressure of a candidate appearing for the examination from his/her brachial artery at the elbow following auscultatory method from both hands. Comment on the normal blood pressures of your age. 4+1=5

3. Submit your Laboratory notebook. 2

B.Sc. 4th Semester (Honours) Examination, 2019

ZOOLOGY

Paper : 404/GE-4

(Insect Vectors and Diseases)

Course ID : 42614

Time : 1 Hour 15 minutes

Full Marks : 25

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

*দক্ষিণ প্রান্তস্থ সংখ্যাগুলি প্রশ্নের পূর্ণমানের নির্দেশক।
পরীক্ষার্থীদের যথাসম্ভব নিজের ভাষায় উত্তর দিতে হবে।*

1. Answer *any five* questions from the following:

1×5=5

নিম্নলিখিত প্রশ্নগুলির মধ্যে যে কোনো পাঁচটির উত্তর দাও :

(a) What is Plumose antenna?

প্লুমোজ (Plumose) অ্যানটেনা বলতে কী বোঝায়?

(b) Define Biological vector.

বায়োলজিক্যাল ভেক্টর কাকে বলে?

(c) What is Maggot?

ম্যাগট (Maggot) কী?

(d) By which insect Chagas disease is carried out?

চাগাস রোগ (Chagas disease) কোন পতঙ্গের দ্বারা বাহিত হয়?

(e) Name a fish which consumes mosquito larva.

মশার লার্ভা ভক্ষণকারী একটি মাছের নাম লেখো।

(f) What is Myiasis?

মিয়াসিস (Myiasis) কী?

(g) Name the vector of Leishmaniasis.

লিসম্যানিয়াসিস (Leishmaniasis) রোগের বাহকের নাম কী?

(h) What is Primary host?

মুখ্য পোষক (Primary host) কাকে বলে?

2. Answer *any two* questions from the following: 5×2=10

নিম্নলিখিত প্রশ্নগুলির মধ্যে *যে কোনো দুটি* প্রশ্নের উত্তর দাও :

(a) Name the pathogen of Dengue. Write down the different measures for controlling mosquito. 1+4=5

ডেঙ্গু রোগের জীবাণুটির নাম লেখো। মশার নিয়ন্ত্রণ কৌশলগুলি লেখো।

(b) Briefly describe the symptoms and treatment procedures of plague. 2½+2½=5

প্লেগ রোগের বিভিন্ন লক্ষণগুলি উল্লেখ করো এবং এর চিকিৎসা পদ্ধতি সম্পর্কে সংক্ষেপে আলোচনা করো।

(c) Discuss the differences between the transmitter and vector with examples. Add a note on reservoir host. 3+2=5

উদাহরণ সহযোগে Transmitter ও Vector-এর পার্থক্য বর্ণনা করো। Reservoir host-এর সংজ্ঞা দাও।

(d) Briefly describe the different symptoms and treatment procedures of Filariasis. 2½+2½=5

ফাইলেরিয়া রোগের বিভিন্ন লক্ষণগুলি উল্লেখ করো এবং এই রোগের চিকিৎসা পদ্ধতি সম্পর্কে আলোচনা করো।

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

নিম্নলিখিত প্রশ্নগুলির মধ্যে *যে কোনো একটি* প্রশ্নের উত্তর দাও :

(a) Describe the asexual phase of a malaria parasite with a suitable diagram. What is Ookinete? 8+2=10

ম্যালেরিয়া পরজীবীর অযৌন জনন দশাটি চিত্রসহ বর্ণনা করো। উকাইনেট কী?

(b) Briefly describe the symptoms of Kala-azar or Black fever. Write the various control measures of bed bug. 6+4=10

কালাজুরের বিভিন্ন লক্ষণগুলি সংক্ষেপে আলোচনা করো। ছারপোকাকার নিয়ন্ত্রণ কৌশল বর্ণনা করো।

SH-IV/ZOO/404/GE-4/(PR)/19

B.Sc. 4th Semester (Honours) Practical Examination, 2019

ZOOLOGY

Paper : 404/GE-4

(Insect Vectors and Diseases Lab)

Course ID : 42624

Time : 2 Hours

Full Marks : 15

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

1. Identify the specimens (A, B, C) as provided with reasons and mention the disease transmitted by them. 3×3=9
(Identification: ½, Reasons: 1½, Disease Transmitted: 1).
 2. Prepare a temporary mount of the specimen provided with drawing and labelling. 2
(Preparation of mounting: 1, Drawing and labelling: 1).
 3. Submit a Project report on an insect i.e.; *Culex / Anopheles / Cimex / Phlebotomus / Musca* along with life cycle stages. 2
 4. Laboratory notebook. 2
-

SH-IV/ZOO/404/GE-4/(PRI)/19

B.Sc. 4th Semester (Honours) Practical Examination, 2019

ZOOLOGY

Paper : 404/GE-4

(Insect Vectors and Diseases Lab)

Course ID : 42624

Instructions to the Examiners.

1. The examiners are requested to make the arrangements before the date of commencement of practical examination.
2. For question no.-1, examiners are requested to supply the permanent slides of insect vectors/ photographs of the insect vectors mentioned in the syllabus.
3. For question no.-2, examiners should supply the living specimen (narcotized) to the examinees. (either mosquito/cockroach)
4. For question no.-3, special credit will be given to the candidates for duly signed copies by the respective teachers.
5. Credit will be given to the duly signed laboratory notebook.
6. Key for identification of question no. 1 duly signed by the examiners may please be given along with the answer scripts.
7. Examiners are requested to send the evaluated answer scripts within 7 days after completion of practical examination to the Controller of Examination, Bankura University.
8. "Datasheet" should be furnished mentioning names, specimen signatures, addresses and Phone numbers of all the examiners.

SP-IV/ZOO/401/C-1D/(PR)/19

B.Sc. 4th Semester (Programme) Practical Examination, 2019

ZOOLOGY

Paper : 401/C-1D

(Vertebrate Lab)

Course ID : 42628

Time : 2 Hours

Full Marks : 15

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

1. Identify the specimens (A, B and C) with reasons. 3×3=9
[Generic name: ½, Systematic position: ½, Reasons: 2]

 2. Dissect and display the parts of the specimen provided. Draw the diagram and label the parts.
[Dissection and display: 3+1, Drawing: 1 and Labelling: 1] 6
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SP-IV/ZOO/401/C-1D/(PRI)/19

B.Sc. 4th Semester (Honours) Practical Examination, 2019

ZOOLOGY

Paper : 401/C-1D

(Vertebrate Lab)

Course ID : 42628

Instructions to the Examiners.

1. For question no.-1, examiners are requested to select specimen A from Protochordata and Agnatha, specimen B from Fishes and Amphibia, specimen C from Reptilia and Mammalia.
2. For question no.-2, examiners are requested to supply Tilapia/carp for dissection of brain and pituitary. The supplied specimens should be clearly mentioned on blackboard.
3. For question no.-1, separate sheet should be supplied to the candidates.
