2023

M.Sc.

4th Semester Examination

ZOOLOGY

PAPER : ZOO-495A

(Practical)

(Fishery Practical)

Full Marks : 50

Time : 5 hours

The figures in the right-hand margin indicate marks.

Answer **all** questions.

1. Calculate the physiochemical parameter (.....) from the given water sample. Write down the principle, result and comment on your answer. 6+2+2+2=12

2. Estimate the length-weight relationship of the provided fish sample (.....) and comment on it. 4+2+2=8

3. *(a)* Identify the specimen provided : (½+2)×4=10

(i)

(ii)

(iii)

(iv)

(b) Identify the specimen and comment on it : 1×5=5

(i)

(ii)

(iii)

(iv)

(v)

4. Demonstrate the morphometric characteristics of the given specimen (any five characters). 5

5. Assessment of the Laboratory Notebook. 5

6. Viva-voce. 5

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2023

M.Sc.

4th Semester Examination

ZOOLOGY

PAPER : ZOO-495B

(Practical)

(Ecology)

Full Marks : 50

Time : 4 hours

The figures in the right hand margin indicate marks.

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

Answer **all** questions.

1. Calculate alpha diversity, beta diversity, gamma diversity indices from the specified data : 8

Species	Habitat 1	Habitat 2	Habitat 3
J	+		
K	+		
L	+	+	
M	+	+	
N	+	+	+
F	+	+	+
D		+	+
H			+
O			+
W			+

2. Compute Sørensen's indices for any two sites (above table) based on presence/absence data. Mention the formula and comment on your result. 8

3. With the given data table, calculate the Importance Value Index for the species in the community providing formulae. Draw and comment on your result. 5+3+2=10

4. With reference to the degraded habitat referred, note any five observable traits of the habitat and write down the major steps for ecorestoration of the site. 5

5. Mention the criteria for the selection of suitable earthworm species to be used in vermicomposting. Write scientific names of two such species. Draw a labelled diagram of cocoon of any such species and point out significance of cocoons in vermicomposting. 4+2+(1+2)

6. Laboratory Notebook. 5

7. Viva-voce. 5

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2023

M.Sc.

4th Semester Examination

ZOOLOGY

PAPER : ZOO-495C

(Practical)

(Special Paper : Genetics & Molecular Biology)

Full Marks : 50

Time : 5 hours

The figures in the right hand margin indicate marks.

Answer **all** questions.

1. Isolate the DNA from the sample provided and run in the agarose gel. Write down the principle and procedure. 15+2½+2½=20

2. Prepare a SDS Page. Isolate total protein from tissue sample provided and prepare the sample. Load the protein sample and run the gel and stain. Visualise under epiluminescence. Write down the principle and procedure. 15-5

3. Laboratory Notebook. 5

4. Viva-voce. 5

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2023

M.Sc.

4th Semester Examination

ZOOLOGY

PAPER : ZOO-495D

(Practical)

(Special Paper : Parasitology)

Full Marks : 50

Time : 5 hours

The figures in the right-hand margin indicate marks.

Answer **all** questions.

1. Prepare smear from the sample/specimens provided, stain the smear for observation. Write the procedure.

   Comment on your observation. 10+3+3=16

(OR)

Make a whole mount of the mosquito mouth parts. Draw, label and write the function of each part. 8+4+4=16

2. Identify the supplied specimen (A, B, C, D). Write the genus characters and mention the systematic position and medical importance. 4×4=16

3. Submission of prepared slides. 8

4. Laboratory Notebook. 5

5. Viva-voce. 5

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