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**PG/IIIS/ZOO/395Batch-I/24
(Pr.)**

M.Sc. 3rd Semester Examination, 2024

ZOOLOGY

(Practical)

PAPER – ZOO-395 (Batch-I)

Full Marks : 50

Time : 5 hours

Answer all questions

The figures in the right hand margin indicate marks

BATCH—I

Answer all questions :

- 1. Prepare and identify the bacteria from the given sample using gram staining technique. Write down the brief procedure. Draw a diagram of the microscopic observation.** 3 + 5 + 2
- 2. Briefly explain the working principle of a Laminar Flow with proper sketch.** 4 + 4

(Turn Over)

Or

Draw the scheme of enumeration of coliforms through multiple tube fermentation method. Prepare TC & FC set up for the experiment following proper steps. 4 + 4

3. Find out the LC_{50} values for 24 hours and 48 hours for the data given below with suitable illustrative comments on your findings. 12

Number of the test fishes-20, Toxicity assessment-24 hrs. and 48 hrs.;
Pesticide used-Metacid-50.

Concentration (mg)	Mortality (24 hrs.)	Mortality (48hrs.)
0.1	00	01
0.2	01	03
0.3	01	05
0.4	03	09
0.5	05	11
0.6	06	14
0.7	09	18
0.8	12	19
0.9	13	20
1.0	14	20

(3)

4. (a) Dissect and display the _____ (sting apparatus) of honey bee. 5 + 5

Or

- (b) Identify the following parts of insect (honey bee) and comment upon their behavioral modification : 5 × 2

(A)

(B)

5. Laboratory NoteBook. 5
6. Viva-voce. 5
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Total Pages—4

**PG/IIIS/ZOO/395 Batch-II/24
(Pr.)**

M.Sc. 3rd Semester Examination, 2024

ZOOLOGY

(Practical)

PAPER – ZOO-395 (Batch-II)

Full Marks : 50

Time : 5 hours

Answer all questions

The figures in the right hand margin indicate marks

BATCH—II

Answer all questions :

- 1. Prepare and identify the bacteria from the given sample using gram staining technique. Represent in flowchart the brief procedure.**

(2)

Draw a diagram of the microscopic observation. 3 + 5 + 2

2. Briefly explain the working principle of an Autoclave with proper sketch. 4 + 4

Or

Elaborate stepwise protocol to perform Streak plate culture of bacteria. From the given result of 24 hour incubation, calculate the MPN of bacteria present in given water sample and write proper inference. 4 + 4

3. Malathion is an important pesticide used in agricultural field and indirectly impact on fish mortality. 24 hours and 48 hours fish mortality observed in different concentration (ppm) of Malathion are as follows. Total number of fish = 20

Sl. No.	Dose (ppm)	24 hours mortality	48 hours mortality
1	2	1	2
2	4	4	5
3	6	8	8
4	8	10	12
5	10	14	15
6	12	16	18

Calculate the LC50 value of 24 hours and 48 hours respectively and comment on your results. 12

4. (a) Write down the Systematic position, important identifying characters and entomological importance of the following insects : 5 × 2

(i) _____

(ii) _____

(4)

Or

(b) Dissect and display the _____ (sting apparatus) of honey bee. 5 + 5

5. Laboratory NoteBook. 5

6. Viva-voce. 5