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PG CBCS
M.SC. Semester-III Examination, 2021
ZOOLOGY
PAPER: ZOO 395 (PRACTICAL)
(ENTOMOLOGY, ECOTOXICOLOGY, MOLECULAR EVOLUTION AND
MICROBIOLOGY)

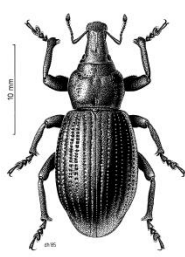
Full Marks: 50**Time: 3 Hours****Answer any TWO questions of the following:****25X2=50**

1. i) Write down the principle, requirements, and procedure of endospore staining.
- ii) Write systematic position of the following specimens and mention its entomological importance.

A.



B.



- iii) Construct the phylogenetic tree using UPGMA method –

	B	C	D
A	8	15	19
B		18	16
C			5

10+(4+4)+7

2. i) Write down the principle, requirements, and procedure of Gram staining.
- ii) Estimate the LC50 value from the following data-

No. Of test animals.	Conc. Of toxicants (mg/l)	Mortality at 48 hrs	Mortality at 96 hrs
10	1	0	1
10	1.5	3	5
10	3	5	7
10	5	7	9
10	10	10	10

(P.T.O.)

(2)

iii) Write entomological importance and systematic position of the following specimens-

A.



B



10+7+(4+4)

3. i) Enumerate the coliform bacteria using multiple tube fermentation method (Principle, requirements, and procedure).
- ii) Write in brief the collection and preservation methods of insect.
- iii) Estimate the LC50 value from the following data-

No. Of test animals.	Conc. Of toxicants (mg/l)	Mortality at 48 hrs	Mortality at 96 hrs
10	1	0	1
10	2	2	4
10	4	3	6
10	8	7	9
10	16	10	10

10+8+7

4. i) State the different sterilization techniques used in a microbiological laboratory.
- ii) Give entomological comment and systematic position of the following specimens

A.



B.



iii) What is the UPGMA distance matrix for the gene tree shown here? 10+(4+4)+7

