

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. SIXTH SEMESTER EXAMINATION, JUNE 2022

THIRD YEAR [BATCH 2019-22]

ZOOLOGY (HONOURS)

Paper : XIV [CC14]

Date : 20/06/2022

Time : 11 am – 1 pm

Full Marks : 50

Answer **any five** questions:

[5×2]

1. a) What is Royal Jelly?
b) What is Beeswax?
c) What is swarming? How is it important in apiary?
d) What is Danier?
e) Define alloparental care.
f) Define complex behavior with an example.
g) Mention two disadvantages in battery cage system of poultry rearing.
h) What are acoustic mimicry and molecular mimicry?

Answer **any four** questions:

[4×10]

2. a) What is Apiculture? Why is this important?
b) Write down the chemical composition of honey. Briefly describe its medicinal value.
c) What is Nuptial Flight? How does it impact the life of a queen bee and beehive overall? [4+3+3]
3. a) What is 'Induced breeding'? How is it important in fish culture?
b) Write a short note on Pearl culture.
c) Write a short note on Ornamental Fish. [5+3+2]
4. a) Write down the scientific names of mulberry, tasar, eri and muga silk moths and their host plants.
b) Describe the structure of silk gland with a suitable diagram.
c) What is pebrine disease?
d) What are Ishiwata's gland and Herhold's gland. [4+(2+1)+1+2]
5. a) There are 25 teachers in a school whose mean age was 30 years. A teacher retired at the age of 60 years and a new teacher was appointed in his place. The mean age of teachers in the school was reduced by one year. The age of the new teacher was
(i) 25 years (ii) 30 years (iii) 35 years (iv) 40 years
b) Extreme values has no effect on
(i) Average (ii) Median (iii) Geometric Mean(GM) (iv) Harmonic Mean(HM)
c) Define Biostatistics.

- d) Identify the type of data (nominal, ordinal, interval and ratio) represented by each of the followings.

I. Blood Group

II. Temperature

III. Ethnic group

IV. Number of heart attacks

V. Calendar year

VI. Serum uric acid (mg/100ml)

- e) The survival time in months for 51 patients suffering from Acute Myeloblastic Leukemia (AML) was diagnosed to be

18	31	31	31	36
01	01	39	20	04
45	36	12	08	01
15	24	02	33	29
07	05	01	02	12
09	01	01	09	05
27	01	13	01	05
01	03	04	01	18
01	02	01	08	03
04	14	03	03	13
13				

- f) Calculate the sample mean and Standard Deviation.

Draw a histogram and to show the distributions of survival times.

[1+1+(1+2)+(2+3)]

6. a) The Standard Deviation (SD) of first n natural numbers is

(i) 0 (ii) $\sqrt{\frac{(n+1)}{12}}$ (iii) $\sqrt{((n^2-1)/12)}$ (iv) $\sqrt{(2n^2-1)/8}$

- b) If the relationship between U and V are given by $2U+V+7=0$ and if the arithmetic mean of U is 10 then arithmetic mean of V is

(i) 17 (ii) -17 (iii) 27 (iv) -27

- c) How will you compare the mean of more than two samples? What is the name of this test?

The haemoglobin levels (%) of three groups of children fed on three different diets are given in the following table. Test whether the means of these three groups differ significantly.

[1+1+(2+6)]

Sl. No.	Group I	Group II	Group III
1	11.6	11.2	9.8
2	10.3	8.9	9.7
3	10.0	9.2	11.5
4	11.5	8.8	11.6
5	11.8	8.4	10.8
6	11.8	9.1	9.1
7	12.1	6.3	10.5
8	10.8	9.3	10.0
9	11.9	7.8	12.4
10	10.7	8.8	10.7

Given information for ANOVA

$F(0.05; 2, 27) = 3.35$

$F(0.10; 2, 27) = 5.49$

7. a) Differentiate between active and passive avoidance behavior.
b) Enumerate the steps of FAP in terms of neuro-behavioural processing related to human yawning.
c) Why Mullerian mimicry is more common than Batesian mimicry?
d) What is IPM? What are the significant attributes of IPM? [2+3+2+3]
8. a) Define EIL and ETL in relation to pest biology.
b) Name one protozoal and one fungal disease of chicken along with their causative agents and treatments.
c) What is 'culling' and 'debeaking'?
d) Describe briefly the deep litter system in rearing the poultry. [2+3+2+3]

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