



Seat No. _____

HAK-003-2015018

B. Sc. (Sem.-V) Examination

May - 2023

Zoology : Z-502

*(Fisheries, Biology, Animal Husbandry,
Bioinstrumentation, Toxicology, Biostatics)
(Old Coures)*

Faculty Code : 003

Subject Code : 2015018

Time : $2\frac{1}{2}$ Hours / Total Marks : 70

Instructions : (1) Illustrate your answer with neat and labelled diagram.
(2) Figures to the right side indicate full marks of question.

- 1 (a) Give answer of following questions : 4
- (1) Define inland fisheries.
 - (2) Write use of isin glass.
 - (3) White spot disease also called as _____
 - (4) Rearing pond is used for _____.
- (b) Write any one out of two : 2
- (1) Write note on fish liver oil.
 - (2) Make a note on advantages of formulated food.
- (c) Write any one out of two : 3
- (1) Describe lipid as a nutrition source in fish.
 - (2) Discuss causes, symptoms and treatment of Argulus disease.
- (d) Write any one out of two : 5
- (1) Give description of post harvesting techniques (any two)
 - (2) Describe inland fishery.

- 2 (a) Give answer of following question : 4
- (1) Define sericulture.
 - (2) Give a scientific name of honey bee.
 - (3) Make a list of most important produce of apiculture.
 - (4) Spinning tray is used for _____.
- (b) Write any one out of two : 2
- (1) Write a note on economic importance of honey bee.
 - (2) Make a note on apiculture in India.
- (c) Write any one out of two : 3
- (1) Write note on rearing of silk worm.
 - (2) Make list of requirement for sericulture.
- (d) Write any one out of two : 5
- (1) Discuss in detail life cycle of honey bee.
 - (2) Discuss in detail life cycle of *silk worm*.
- 3 (a) Give answer of following questions : 4
- (1) Chromatography is use for _____.
 - (2) Write a full name of SDS PAGE.
 - (3) Write the function of DNA ligase in recombinant technology.
 - (4) Write the full name of CBB.
- (b) Write any one out of two : 2
- (1) Restriction endonucleases.
 - (2) Describe mobile phase and stationary phase.
- (c) Write any one out of two : 3
- (1) Describe : Bacteriophage
 - (2) Explain electroporation techniques.
- (d) Write any one out of two : 5
- (1) Write the procedure of chromatography for identification of amino acid.
 - (2) Write a step for rDNA technology.
- 4 (a) Give answer of following questions : 4
- (1) Define toxicology.
 - (2) The oral _____ or _____ is effective to remove arsenic to the body.
 - (3) Write the classification of toxic agents on the basis of their biochemical action.
 - (4) Which metal used as a poison of king ?

- (b) Write any one out of two : 2
 (1) Brief note on dental fluorosis.
 (2) Make a note on chronic poisoning of arsenic.
- (c) Write any one out of two : 3
 (1) Explain skeletal fluorosis.
 (2) Make a note on toxicokinetics of arsenic toxicity.
- (d) Write any one out of two : 5
 (1) Describe characteristic of exposure of Arsenic toxicity.
 (2) Describe lead as a toxic substance.
- 5** (a) Give answer of following question : 4
 (1) Define mode.
 (2) Find the mean of 2, 9, 8, 1, 9, 6, 7
 (3) Write a formula showing relation between standard error and standard error.
 (4) What is the sign of mean ?
- (b) Write any one out of two : 2
 (1) Write application of biostatistics.
 (2) Find out mode from following data :
 1, 3, 2, 3, 5, 8, 15, 8, 3
- (c) Write any one out of two : 3
 (1) Calculate mean from following data:
- | | | | | | | | |
|-------|------|-------|-------|-------|-------|-------|-------|
| Class | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 |
| F | 6 | 5 | 8 | 15 | 7 | 6 | 3 |
- (2) Calculate standard deviation from following data :
- | | | | | | | | |
|-------|------|-------|-------|-------|-------|-------|-------|
| Class | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 |
| F | 10 | 6 | 8 | 15 | 7 | 8 | 3 |
- (d) Write any one out of two : 5
 (1) Calculate median from following data :
- | | | | | | |
|-----------|------|-------|-------|-------|-------|
| Class | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 |
| Frequency | 2 | 12 | 22 | 8 | 6 |
- (2) Calculate standard deviation and standard error from following data.
- | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|
| X | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
| F | 18 | 28 | 30 | 26 | 20 | 18 | 10 |