

BANKIM SARDAR COLLEGE

Part – II (1+1+1) Examination 2020

B.Sc. (Honours)

Subject: ZOOLOGY

Paper: III+IV

Group: (1+2)

Time: 2 Hours

Full Marks: 25+25 = 50

(Answer each Group in separate Answer-Sheets)

Group: 1

Paper -III (F.M-25)

Paper: IIIA (F.M-12.5)

(Answer in separate answer-sheets)

Answer any TWO Questions from Question 1 to 4. Question 5 is compulsory.

1. (a) Differentiate between Chondrichthyes and Osteichthyes, with example.
(b) What is paedomorphosis? How is it different from neoteny? 3+2=5
2. (a) Differentiate between Artiodactyla and Perissodactyla.
(b) What is blood testis barrier? 3+2=5
3. (a) Distinguish between alpha, beta and gamma taxonomy with appropriate examples.
(b) What is Founder effect? 3+2=5
4. (a) What is population bottleneck phenomenon. Explain with example.
(b) Give scientific names of two avian and two mammalian faunal species each from Ethiopian realm.
3+2=5
5. Compulsory Question 2.5 × 1 = 2.5
(I) What are filoplumes? Draw their diagram.

OR

(II) What is the significance of Waggle dance of honey bees?

Paper: IIIB (F.M-12.5)

(Answer in separate answer-sheets)

Answer any TWO Questions from Question 6 to 9. Question 10 is compulsory.

6. (a) What are chief follicular cells? What is their function? 3+2=5
(b) What are polypeptide hormones? Give an example.
7. (a) Differentiate between estrous cycle in rat and humans. 3+2=5
(b) Briefly describe the role of ecdysone in metamorphosis.
8. (a) Draw the 'Y' shaped model of energy flow in an ecosystem with appropriate labelling.
3+2=5
(b) Differentiate between natality and mortality in a population
9. (a) Differentiate between Sanctuary , Biosphere reserve and National park.
(b) What is an ecological niche? 3+2=5
10. Compulsory Question 2.5 × 1 = 2.5
(I) Why is pancreas referred to as a mixed gland? Explain.
OR
(II) Define keystone species ? Give an example.

Group: 2
Paper-IV (F.M-25)

Paper: IVA (F.M-12.5)
(Answer in separate answer-sheets)

Answer any TWO Questions from Question 11 to 14. Question 15 is compulsory.

11. (a) Explain the mechanism of slow block to polyspermy in sea-urchin.
(b) What is meroblastic cleavage? Where is it seen? 3+2=5
12. (a) What is epitheliochorial placenta? Where is it seen? 3+2=5
(b) What are the functions of allantois?
13. (a) What is the function of ATP synthase ? Write the overall reaction catalyzed by this enzyme.
3+2=5
(b) Draw a labelled diagram of a sarcomere.
14. (a) What is the role of calcium in muscle contraction? 3+2=5

(b) What is an Ommatidium ?

15. Compulsory Question $2.5 \times 1 = 2.5$

(I) What is the role of yolk in cleavage ?

OR

(II) What is Chloride Shift? Draw a diagram to illustrate it.

Paper: IVB (F.M-12.5)
(Answer in separate answer-sheets)

Answer any TWO Questions from Question 16 to 19. Question 20 is compulsory.

16. (a) Differentiate between ctenoid and placoid scales. $3+2=5$

(b) Write the names of the IX and X cranial nerves in mammals.

17. (a) What the functions of the afferent and efferent branchial arteries in Lata fish.

$3+2=5$

(b) Draw a neat labelled diagram of Pecten of Fowl.

18. (a) sClassify *Pennatula* species according to the scheme of classification studied by you.

$3+2=5$

(b) Draw the structure of any one zoo-plankton studied by you.

19. (a) What is the principle of Benedict's test? Give the reaction. $3+2=5$

(b) Name any four types of haemocytes observed during the study of haemocytes in cockroach.

20. Compulsory Question $2.5 \times 1 = 2.5$

(I) Draw a labelled diagram showing the dorsal view of brain of *Oreochromis* sp.

OR

(II) What is the principle of estimation of free Carbon dioxide in a water sample?