

2024

ZOOLOGY — HONOURS

Paper : SEC-B-1 and SEC-B-2

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

SEC-B-1

(Aquarium Fisheries)

Full Marks : 80

1. Answer *any ten* questions :

2×10

- (a) Write the scientific name of Molly fish.
- (b) Name two preservatives used in fish feed.
- (c) Write two precautions to be followed during fish transport.
- (d) Why is Sword tail fish named so?
- (e) Write two sexual dimorphic characters of Butterfly fish.
- (f) Name any two ornamental plants kept in aquarium.
- (g) Name any two marine species of ornamental fish.
- (h) Mention the common characteristics of Guppy.
- (i) Mention two criteria for selection of an ornamental fish.
- (j) Give the scientific name of any one larval predator aquarium fish.
- (k) What is pelletization?
- (l) State any two identifying features of Gold fish.
- (m) Why attractants are added in commercial fish feed?
- (n) Write the full form of FCR.

2. Write short notes on *any four* of the following :

5×4

- (a) Problems of ornamental fish culture in India
- (b) Composition of formulated fish feed of aquarium fishes
- (c) Exotic ornamental fish
- (d) Use of drugs and chemicals during fish transport
- (e) Role of aerators and diffusers in aquarium
- (f) Precautions taken for an ideal aquarium setup
- (g) Biological load of aquarium.

Please Turn Over

3. Answer any four questions :

- (a) (i) State the common characters of Anemone fish. 5+5
(ii) Add a note on Zooplanktons as live feed.
- (b) (i) Describe in brief the scope of aquarium fish industry in empowerment of women and generation of job opportunities.
(ii) Write common and scientific names of a marine based exotic egg layer fish. (3+3)+(2+2)
- (c) (i) How does nitrogenous waste affect water quality? How can you manage nitrogenous waste products accumulated inside an aquarium?
(ii) State briefly the role of algal cleaners, aerators and aquarium filters for construction of an aquarium. (2+2)+(2+2+2)
- (d) (i) Elucidate the social behaviour of Molly and Guppy.
(ii) Add a note on daily aquarium maintenance routine.
(iii) Why carbonate hardness is measured for the maintenance of the aquarium? (2+2)+3+3
- (e) (i) What is infusoria?
(ii) How is infusoria produced?
(iii) Add a note on use of energy supplements in fish feed. 2+3+5
- (f) (i) Write the uses of adding NaCl and CaCl₂ during fish transport.
(ii) How are fishes prepared before transport?
(iii) Describe the basic requirements for starting ornamental fish farming business. (2+2)+2+4
- (g) (i) Describe the process of steaming and pelletizing in fish feed preparation.
(ii) Mention the effect of following factors on fishes during transport : Temperature, CO₂. (3+3)+(2+2)

SEC-B-2**(Medical Diagnosis)****Full Marks : 80**Answer *any eight* questions.

1. (a) What is PET-CT? What is the advantage of this imaging technique over only PET and CT?
(b) 'Malaria is an infectious disease.' — Justify the statement.
(c) State the working principle of Glucometer to test blood glucose. (2+2)+3+3
2. (a) Draw and describe the asexual cycle of any malaria parasite you have studied.
(b) Write the symptoms and diagnosis of diabetes mellitus (type-II). (2+3)+(2+3)
3. Differentiate between : 2×5
 - (a) CT scan and MRI
 - (b) IDDM and NIDDM
 - (c) Leukaemia and Leucopenia
 - (d) Adenoma and Carcinoma
 - (e) Pulmonary TB and Extra-pulmonary TB.
4. (a) Write the standard normal values of :
 - (i) HbA1c
 - (ii) SGPT
 - (iii) LDL
 - (iv) Eosinophil.What will happen if the values of each of the above parameters exceed the normal?
(b) State the role of kidneys in the regulation of blood pressure. (2+4)+4
5. (a) Comment on bleeding time and clotting time.
(b) State the clinical significance of SGOT.
(c) Describe agar dilution method of detecting antibiotic sensitivity. (2+2)+2+4
6. (a) What is bone fracture? How can X-rays be used to detect fracture?
(b) State the significance of PSA test.
(c) State the characteristics of cancer cells. (2+2)+2+4

Please Turn Over

7. (a) How can you detect the presence of malaria parasites by ELISA?
(b) State the physical characteristics of urine.
(c) Define MIC in antibiotic sensitivity test. 'An antibiotic has lower MIC value.' — Comment on its effectiveness. 3+4+(2+1)
8. (a) Mention the composition of Leishman's stain.
(b) Comment briefly on Neubauer chamber.
(c) Differentiate between latent and active tuberculosis. 2+5+3
9. (a) Mention five abnormal constituents of urine and state the reasons behind their presence.
(b) Comment on the risks and preventive measures of hypertension. 5+(3+2)
10. (a) Enumerate the following with respect to hepatitis A :
(i) Mode of infection
(ii) Diagnosis
(iii) Treatment and prevention.
(b) Write briefly on any two methods of diagnosing cancer. 6+4
11. (a) Discuss the procedure of chemical analysis of urine.
(b) What is haematocrit? Comment on the significance of decreased and raised haematocrit. 6+(1+3)
12. (a) Write briefly on the procedure of making a thick blood smear and staining with Leishman stain.
(b) Write the applications of MRI.
(c) What is ascites? (3+2)+3+2
13. (a) Comment with reasons whether the following parameters of urine are normal or abnormal :
(i) Transparency : Cloudy
(ii) Specific gravity : 1.125
(iii) Colour : Dark Yellow
(iv) pH : 6.5
(v) Odour : Foul
(b) Mention the clinical significance of Lipid Profiling.
(c) Distinguish between Type-I and Type-II Diabetes. 5+2+3

(5)

B(4th Sm.)-Zoology-H/SEC-B-1 & SEC-B-2/CBCS

14. Write short notes on :

2½×4

- (a) Malignant malaria
 - (b) Tuberculin test
 - (c) Urine culture
 - (d) Hepatitis B.
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