



বিদ্যাসাগর বিশ্ববিদ্যালয়
VIDYASAGAR UNIVERSITY

Question Paper

B.Sc. Honours Examinations 2021

(Under CBCS Pattern)

Semester - VI

Subject: ZOOLOGY

Paper : DSE 3-T & P

Full Marks : 60 (Theory-40 + Practical-20)

Time : 3 Hours

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

The figures in the margin indicate full marks.

Parasitology

[Theory]

Answer **any two** of the following:

2×15=30

1. a. Write down the differences between soft ticks and hard ticks. Discuss their control measures.
- b. Name two parasites those can be infested by consumption of poorly cooked pork.
- c. What do you mean by carriers and vectors? cite example of each.

(5+4)+2 +4=15

2. a. Briefly describe about host-parasite relationship.
- b. What is the major route of infection of *Entamoeba histolytica*?
- c. Write brief notes on:
- Commensalism
 - Ectoparasite 8+1+(3+3)=15
3. a. Schematically represent the life cycle of *Schistosoma haematobium*.
- b. Write briefly on the epidemiology, pathogenicity and treatment regimen of the disease caused by *Trypanosoma gambiense*. 7+(3+3+2)=15
4. a. Name one vertebrate parasite. Why are they called parasites? Mention their feeding habit
- b. Write brief notes on:
- Giardiasis
 - Mutualism
 - Parasitoid (1+2+3)+(3×3) =15

Answer **any one** of the following: 1×10=10

5. a. What is the difference between definitive, intermediate, and reservoir host?
- b. What do you understand by encystment and excystation?
- c. Describe morphological features of *Taenia solium* with labelled diagram. 3+2+5
6. Schematically represent the life cycle and pathogenicity of *Schistosoma haematobium*.

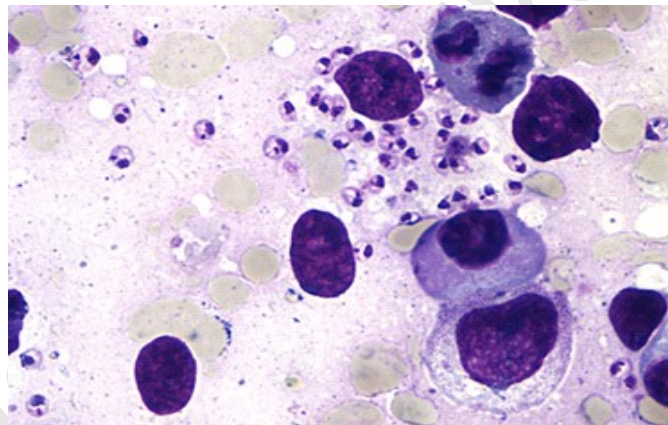
[Practical]

Answer **any one** of the following:

1×20=20

7. a. Identify with reasons (only diagnostic characters) and mention systematic position of the following
- (i). *Giardia intestinalis*
 - (ii). *Brugia malayi*
- b. Identify the parasite (with reasons) from the image of stained bone marrow preparation and comment on it.

[(5+2) ×2+6 = 20]



8. a. Identify with reasons (only diagnostic characters) and mention systematic position of the following
- (i). *Ancylostoma duodenale*
 - (ii). *Trypanosoma gambiense*

b. Identify the following (with reasons) and comment on it.

[(5+2)×2 +6 = 20]



9. a. Draw neatly and label properly the following stages of *Trypanosoma* and comment on each

(i). Amastigote

(ii). Promastigote

(iii). Epimastigote

(iv). Opisthomastigote and

(v). Trypomastigote forms

b. What is opisthaptor?

c. Observe the following photograph and answer.

(i). Identify the parasite (with reasons)

(ii). Which kind of parasite is this? What type of disease do these cause?

[(5×2)+2+(5+3) = 20]



Vidyasagar

Endocrinology

[Theory]

Answer *any two* of the following:

2×15=30

1. (a) Name four releasing hormones and two inhibiting hormones secreted by hypothalamus. Mention their functions. (3+3)
(b) State the functions of vasopressin with reference to its binding to V_1 and V_2 isoreceptors, respectively. What is diabetes insipidus? Precisely comment on the feedback regulation of pituitary gonadotropin secretion. (4+2+3)
2. (a) Name 3 important cell types of islets of Langerhans and the hormones secreted by them. Mention one function each of those hormones. (3 + 3)
(b) Give one example each of mineralocorticoid and glucocorticoid hormones. State their functions. Write a note on exophthalmic goitre. (2 + 4 + 3)
3. (a) Discuss the mechanism of steroid hormone action via the mobile receptor model. Name two non-steroid hormones acting via the mobile receptor model. (5 + 1)
(b) Discuss the physiological functions of parathormone. Write notes on hypo- and hyperparathyroidism. (5 + 4)
4. (a) Distinguish between estrous cycle and menstrual cycle. Define and exemplify monoestrous, diestrous and polyestrous animals. (3 + 3)
(c) Give an account of estrous cycle with reference to ovarian, uterine and hormonal changes, in any animal model studied by you. (3 + 3 + 3)

Answer **any one** of the following:

1×10=10

5. (a) What is the basic difference between type-1 and type-2 diabetes mellitus? What do you mean by the terms (i) Hyperglycemia (ii) Polyphagia (iii) Glycosuria?
(2 + 3)
- (b) Give an illustrated account of hypothalamo-hypophyseal portal system. State its functional significance.
(4 + 1)
6. (a) How does melatonin maintain the sleep-wake cycle of our body? What is 'love hormone'?
(4 + 1)
- (b) Write a note on hormonal control of parturition. Name the hormones secreted by the hypothalamic paraventricular nucleus.
(4 + 1)

[Practical]

Answer **any one** of the following:

1×20=20

7. (a) Draw a neat diagram of the transverse section of mammalian thyroid gland. Label the following parts in your drawing: (i) Follicle, (ii) Cuboidal epithelium, (iii) Colloid and (iv) Parafollicular cells.
(4 + 2 = 6)
- (b) State the function of the following parts of a rotary microtome:-
- (i) Advancement hand-wheel with handle and safety lock,
 - (ii) Knife holder with blade clamp, knife tilt and face plate,
 - (iii) Coarse hand-wheel,
 - (iv) Micron adjuster and
 - (v) Block holder.
- (2 + 2 + 1 + 1 + 1 = 7)

(c) Describe the principle and procedure of estimation of plasma level of any hormone using ELISA. (3 + 4 = 7)

8. (a) Draw a neat diagram of the transverse section of mammalian ovary. Label the following parts in your drawing:

(i) Antrum,

(ii) Cumulus oophorus,

(iii) Oocyte and

(iv) Coronaradiata. (5 + 2 = 7)

(b) Give a sketch diagram of a rotary microtome. Label the following parts in your drawing:

(i) Advancement hand-wheel with handle,

(ii) Knife holder,

(iii) Knife,

(iv) Micron adjuster,

(v) Block holder and

(vi) Block. (5 + 3 = 8)

(c) How will you prepare aqueous Bouin's fixative? Describe the procedure of embedding a fixed tissue in paraffin. (2 + 3 = 5)

9. (a) Draw a neat diagram of the transverse section of mammalian adrenal gland. Label the following parts in your drawing:

(i) Zonaglomerulosa, (ii) Zonafasciculata, (iii) Zonareicularis and (iv) Medulla.

(4 + 2 = 6)

(b) Describe in detail the procedure of section cutting with the help of a rotary microtome [*Separate description of the instrument not required*].

(7)

(c) Describe the protocol for designing the primer of any hormone, as studied by you.

(7)

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