

C 4406

(Pages : 2)

Name.....

Reg. No.....

**SECOND SEMESTER (CBCSS—UG) DEGREE EXAMINATION, APRIL 2021**

Zoology

ZOL 2C 02T—ECONOMIC ZOOLOGY

Time : Two Hours

Maximum : 60 Marks

**Section A (Short Answer Questions)***Answer at least **eight** questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 24.*

1. What is a reservoir host ?
2. What is meant by insecticide resistance ?
3. What is cysticercosis ?
4. Name any four predatory insects of honey bee.
5. Differentiate between infection and infestation.
6. What is moriculture ?
7. Mention the clinical symptoms of kala-azar.
8. What are the different types of prawn farms ?
9. Briefly explain the damages caused by *Aceria*.
10. What are endophagic vectors ?
11. What are the different culture methods adopted in mussel farming ?
12. Briefly explain the demerits of biological pest control.

(8 × 3 = 24 marks)

**Section B (Paragraph Questions)***Answer at least **five** questions.**Each question carries 5 marks.**All questions can be attended.**Overall Ceiling 25.*

13. Write down the importance of honey and bee wax.
14. Briefly explain the transmission, clinical symptoms and prophylaxis of Chikungunia.

**Turn over**

15. What is induced breeding ? Write a note on its advantages.
16. Write a short note on amoebiasis.
17. Describe the various methods of chemical control among insect pests.
18. Give a brief account on pearl culture.
19. Discuss the medical importance and control of pubic louse.

(5 × 5 = 25 marks)

**Section C (Essay Question)**

*Answer any **one** question.*

*The question carries 11 marks.*

20. Define pest. Explain different types of insect pests and the causes of pest outbreak.
21. Write an essay on the different steps involved in lac production.

(1 × 11 = 11 marks)

C 62629

(Pages : 2)

Name.....

Reg. No.....

SECOND SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, MAY 2019

B.Sc. Zoology—Complementary

ZOL 2C 02—ECONOMIC ZOOLOGY

Time : Three Hours

Maximum : 64 Marks

(A) Answer *all* questions. Each question carries 1 mark :

- 1 What is an obligatory parasite ?
- 2 Give the scientific name of the filarial parasite of man.
- 3 What is a carrier host ?
- 4 What is hyperinfection ?
- 5 How is infestation with round worm detected ?
- 6 Name one PCB.
- 7 What is pebrine ?
- 8 The vector of kala azar is \_\_\_\_\_.
- 9 What are the major vitamins present in fish oil ?
- 10 The intermediate host of *Schistosoma* is

(10 × 1 = 10 marks)

(B) Answer any *seven* questions in two or three sentences each. Each question carries 2 marks :

- 11 What are the precautions to be taken while sneezing or coughing ?
- 12 What are the symptoms of malaria ?
- 13 What are the economic impacts of infestation with (a) *Cosmopolites* (b) *Rhyncophorus*.
- 14 Give the names of any *two* insects used for bio-control.
- 15 How is the graft tissue in pearl culture prepared ?
- 16 What are the advantages of mussel farming ?
- 17 What is *Cimex* ? Do they transmit diseases ?
- 18 How is filariasis diagnosed ?

Turn over

19 How does induced sterility control pests ?

20 How is lac obtained ?

(7 × 2 = 14 marks)

(C) Answer any *four* questions in not more than a *paragraph* each. Each question carries 5 marks :

21 What are the different modes of infection ?

22 How is biocontrol carried out ?

23 How will you prevent the proliferation of mosquitoes ?

24 Write a brief note on dengue fever.

25 How do Spodoptera species and *Rhynchophorus* species cause loss to farmers ?

26 Write a short note on the scope of apiculture in Kerala.

(4 × 5 = 20 marks)

(D) Write essays on any *two* of the following. Each question carries 10 marks :

27 Highlight the advantages of aquaculture.

28 Trace the life cycle of *Entamoeba histolytica*. What disease does it cause ?

29 Highlight the importance of the honey bee.

30 Describe how mussels are cultured.

(2 × 10 = 20 marks)

C 5628

(Pages : 2)

Name.....

Reg. No.....

SECOND SEMESTER B.Sc. DEGREE EXAMINATION, MAY 2016

(CUCBCSS—UG)

Complementary Course

ZOL 2C 02—ECONOMIC ZOOLOGY

Time : Three Hours

Maximum : 64 Marks

I. Answer *all ten* questions :

- 1 The pearly substance secreted by pearl oyster.
- 2 The larva of *Ancylostoma duodenale*.
- 3 The vector of *Pasteurella pestis*.
- 4 The device used for hatching the eggs of fishes.
- 5 The common fresh water prawn cultured in Kerala.
- 6 The intermediate host of *Taenia solium*.
- 7 The pest of mango tree.
- 8 The purest form of lac.
- 9 The high grade collagen produced from the gas bladder of fishes.
- 10 Parasites of parasites are called :

(10 × 1 = 10 marks)

II. Answer any *seven* questions :

- 11 What is hypophysation ?
- 12 Explain the nutritive value of fishes.
- 13 Explain social organization in honey-bees.
- 14 What is IPM? What are its merits ?
- 15 What are the damages caused by *Spodoptera mauritia* ?

Turn over

- 16 Explain the different modes of transmission of parasites.
- 17 Differentiate between definitive host and intermediate host.
- 18 Explain the steps involved in the production of lac.
- 19 Name the four common species of silk worm moth reared for silk production.
- 20 What is a key pest ?

(7 × 2 = 14 marks)

III. Answer any *four* questions :

- 21 Explain the various fish byproducts.
- 22 Explain the pathogenic effects of *Entamoeba histolytica*.
- 23 Describe the parasitic adaptations of endoparasites.
- 24 Explain the processing of cocoon for silk production.
- 25 Explain the culture techniques practiced in the production of pearl.
- 26 Explain biological control of pests.

(4 × 5 = 20 marks)

IV. Answer any *two* questions :

- 27 What is eye stalk ablation ? Describe the various methods practiced in prawn culture.
- 28 Explain the life cycle of *Taenia solium*. Explain its parasitic adaptations.
- 29 Explain the causes of pest outbreak.
- 30 Write an essay on mussel farming.

(2 × 10 = 20 marks)

C 25128

(Pages : 2)

Name.....

Reg. No.....

SECOND SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2012

(CCSS)

Zoology—Complementary Course

ZO 2C 03—ECONOMIC ZOOLOGY

Time : Three Hours

Maximum : 30 Weightage

Answers may be written **either** in English or in Malayalam.  
Give illustrations wherever necessary.

A. Objective Type Questions :

- 1 The causative agent of Pebrine disease is a ————.  
(a) Fungus. (b) Protozoa.  
(c) Bacteria. (d) Virus.
- 2 In *Taenia solium*, the egg hatches into ————.  
(a) Cercaria. (b) Miracidium.  
(c) Radia. (d) Onchosphere.
- 3 Which among the following produces Muga silk ?  
(a) *Attacus ricini*. (b) *Antheraea assama*.  
(c) *Bombyx mori*. (d) *Antheraea paphia*.
- 4 Cod liver oil is a rich source of :  
(a) Vitamin K. (b) Vitamin B.  
(c) Vitamin C. (d) Vitamin D.

B. Name the following :—

- 5 Vector of *Pasteurella pestis*.
- 6 Method of induced breeding in *Macrobrachium*.
- 7 Common name of *Metapenaeus monoceros*.
- 8 High grade collagen obtained from swim bladder of fishes.

C. Fill up the blanks :

- 9 Pearl oyster is a ———— feeder.
- 10 In prawns, the transfer of sperms to female is aided by ————.
- 11 Scientific name of "Karikadi" is ————.
- 12 In *Bombyx mori* the salivary gland is modified as ————.

(12 × ¼ = 3 weightage)

Turn over

II. Short Answer Questions. Answer *all nine* questions :

- 13 What is "swimmers itch" ?
- 14 Define hyper infection with a suitable example.
- 15 Mention the significance of reserve hosts.
- 16 With the help of an example the term "parasitoid".
- 17 Comment on mode of transmission of *Enterobius vermicularis*.
- 18 Write down the damage caused by *Leptocorisa* sp.
- 19 What is an obligating parasite ? Give an example.
- 20 Mention the economic importance of *Laccifer* sp.
- 21 Explain the importance of round dance.

(9 × 1 = 9 weightage)

III. Short Answer Questions. Answer any *five* questions :

- 22 Raft culture.
- 23 Ornamental fish farming.
- 24 Fish meal.
- 25 Integrated pest management.
- 26 Extensive prawn farming.
- 27 Adaptations of worker bee.
- 28 Damage caused by tea bug and its control.

(5 × 2 = 10 weightage)

IV. Essay Questions. Answer any *two* questions :

- 29 Life-cycle of *Schistosoma haematobium*.
- 30 Nature of damage to the host plant and control of pests in coconut.
- 31 Grafting method of pearl culture.

(2 × 4 = 8 weightage)



C 15757

(Pages : 2)

Name.....

Reg. No.....

**SECOND SEMESTER B.Sc. DEGREE EXAMINATION  
MAY 2011**

(CBCSS)

Zoology

ZO 2C 03 – ECONOMIC ZOOLOGY

Time : Three Hours

Maximum : 30 Weightage

*Answers may be written either in English or in Malayalam.*

*Give illustrations wherever necessary.*

I. Answer *all twelve* questions. Each question carries  $\frac{1}{4}$  weightage.

A. Objective type questions :

1. Pearl essence is produced from \_\_\_\_\_ of fish.

- (a) Scales. (b) Skin.  
(c) Air bladder. (d) Intestine.

2. Shark liver oil is rich in \_\_\_\_\_.

- (a) Vitamin A. (b) Vitamin B.  
(c) Vitamin C. (d) Vitamin D.

3. Type of silk produced by *Attacus ricini* is called \_\_\_\_\_.

- (a) Mulberry silk. (b) Eri silk.  
(c) Muga silk. (d) Tasar silk.

4. Which among the following is called 'Rock bee'?

- (a) *Apis indica*. (b) *Apis dorsata*.  
(c) *Apis florea*. (d) *Apis dorsata*.

B. Name the following :

5. Common name of *Parapenaepsis stylifera*.  
6. Mode of transmission of *Wucheraria bancrofti*.  
7. Intermediate host of *Taenia solium*.  
8. Generic and species name of pin worm.

Turn over

## C. Fill up the blanks :

9. Scientific name of lac insect is \_\_\_\_\_.
10. \_\_\_\_\_ is the larva of *Ancylostoma duodenale*.
11. \_\_\_\_\_ are present on the ventral side of the last four abdominal segments in honey-bees.
12. In humans the body louse is called \_\_\_\_\_.

(12 × ¼ = 3)

II. Short answer type questions (Answer all *nine* questions)

13. What is bee dance? Name the scientist who explained the significance of bee dance.
14. Mention the importance of sericulture.
15. Define autoinfection with a suitable example.
16. What is the importance of an intermediate host in the life cycle of a parasite?
17. Mention the mode of transmission of *Enterobius vermicularis*.
18. What is an obligatory parasite? Give an example.
19. Write down the damage caused by *Helopeltis* sp.
20. What is isinglass? How is it produced?
21. What is a parasitoid?

(9 × 1 = 9)

III. Short answer questions. (Answer any *five* questions)

22. Control methods of *Cimex*.
23. Functions of a worker bee.
24. Vector control in Malaria.
25. Integrated pest management.
26. Uses of honey.
27. Pathogenic effects of *Wuchereria bancrofti*.
28. Preparation of nuclei in pearl culture.

(5 × 2 = 10)

## IV. Essay questions (Answer two questions)

29. Pearl culture.
30. Life cycle of *Entamoeba histolytica*.
31. Methods of chemical and biological control of insect pests.

(2 × 4 = 8)

C 5706

(Pages : 2)

Name.....

Reg. No.....

SECOND SEMESTER B.Sc. DEGREE (C.C.S.S. PROGRAMME)  
EXAMINATION, MAY 2010

Zoology—Complementary Course

ZO 2C 03—ECONOMIC ZOOLOGY

Time : Three Hours

Maximum Weightage : 30

Answers may be written in English or Malayalam.

Give illustration wherever necessary.

I. Answer all twelve questions. Each question carries  $\frac{1}{4}$  weightage :

Objective type questions :

1 Insects responsible for transmitting diseases are called :

- (a) Vectors. (b) Pests.  
(c) Drones. (d) None of these.

2 Dengue fever is caused by :

- (a) Virus. (b) Bacteria.  
(c) Protozoan. (d) Helminth worm.

3 Beneficial insects are those which provide useful products like :

- (a) Honey and bee wax. (b) Silk thread.  
(c) Shellac and dyes. (d) All of the above.

4 Mulberry is associated with :

- (a) Biological control. (b) Apiculture.  
(c) Sericulture. (d) Pisciculture.

Name the following : —

- 5 Scientific name of hook worm.  
6 Mode of transmission of *Entamoeba histolytica*.  
7 Intermediate host of *Wucheraria bancrofti*.  
8 Disease transmitted by sand fly.

Fill up the blanks :

- 9 Branch of science which deals with the study of nature and spread of infection is called \_\_\_\_\_.  
10 \_\_\_\_\_ is the definitive host of *Schistosoma haematobium*.

Turn over

- 11 In bees dance is meant for \_\_\_\_\_.
- 12 Cysticercus is the larval form of \_\_\_\_\_.

(12 × ¼ = 3)

II. Short answer questions. (Answer all *nine* questions)

- 13 What do you mean by "inoculative infection"? Give an example.
- 14 Mention the importance of apiculture.
- 15 Define autoinfection with a suitable example.
- 16 What is a parasitoid?
- 17 Mention the mode of transmission of *Enterobius vermicularis*.
- 18 What is the role of an intermediate host?
- 19 Write down the damage caused by *Cosmopolites* sp.
- 20 Mention the economic importance of lac insect.
- 21 What is isinglass? How is it produced?

(9 × 1 = 9)

III. Short answer questions. (Answer any *five* questions)

- 22 Control methods of *Pediculus*.
- 23 Preparation of nuclei in pearl culture.
- 24 Eye stalk ablation in crustaceans.
- 25 Integrated pest management.
- 26 Uses of honey.
- 27 Harmful effects of *Leptocorisa*.
- 28 Pathogenic effects of *Wuchereria bancrofti*.

(5 × 2 = 10)

IV. Essay questions. Answer any *two* questions :

- 29 Life cycle and pathogenesis of *Taenia solium*.
- 30 Methods of chemical and biological control of insect pests.
- 31 Social organization of honey bees.

(2 × 4 = 8)

25  
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COMPLEMENTARY COURSE II – ZOOLOGY – II

ECONOMIC ZOOLOGY

Paper code: ZO2CO2

Duration: Three Hours

Maximum: 64 Marks

A. Answer **all** questions. Each carries one mark.

1. What is an obligatory parasite?  
An obligate parasite is one that cannot complete its life-cycle without exploiting a suitable host.
2. Give the scientific name of the filarial parasite of man.  
*Wuchereria bancroftii*
3. What is a carrier host?  
One in which the pathogen resides without causing harm but being infectious to others.
4. What is hyperinfection?  
Where repeated entry of pathogen causes serious disease.
5. How is infestation with round worm detected?  
By examining stool samples for its eggs.
6. What is the expansion of PCB with regard to pesticides?  
Poly-chlorinated biphenyls.
7. What is pebrine?  
Disease of silk worm.
8. The vector of kala azar is \_\_\_\_\_.  
Sand fly *Phlebotomus*
9. What are the major vitamins present in fish oil?  
A / D
10. The intermediate host of *Schistosoma* is  
*Bulinus species* (snail)

(1x10=10 Marks)

B. Answer **any seven** questions in two or three sentences each. Each carries 2 marks.

11. What are the precautions to be taken while sneezing or coughing?  
Cover the mouth and nose with cloth, do not spit sputum in open spaces, and turn away from the face of persons.
12. What are the symptoms of malaria?  
Fevers and chills at regular intervals, depending upon the strain infected with, anaemia, jaundice and if untreated, death.
13. What are the economic impacts of infestation with (a) *Cosmopolites* (b) *Rhynchophorus*.  
*Cosmopolites* destroys banana plants on vast areas, causing huge loss.  
*Rhynchophorus* infests palm tree silently and kill them at a stage when they are

most productive.

14. Give the names of any two insects used for bio-control  
*Coccinella* species, *Rodolia*, gypsy moth, wasps etc.
15. How is the graft tissue in pearl culture prepared?  
The suitable donor should be identified, anaesthetised and opened in sterile conditions without any contamination and properly placed so that the nucleus is completely enveloped for proper all-round secretion of nacre.
16. What are the advantages of mussel farming?  
Farming is done in the open sea with no inputs or expenses by way of feeding. Growth is fast and the meat is considered a delicacy fetching good prices, the ropes after harvesting grown mussels can be reintroduced to continue the growth of young ones still on it.
17. What is *Cimex*? Do they transmit diseases?  
The common bed bug. They have not been reported to transmit pathogens.
18. How is filariasis diagnosed?  
Identification of microfilaria in blood taken at night, enlargement of limbs and extremities.
19. How does induced sterility control pests?  
Sterilisation of pests especially males and releasing them in the field makes them compete for the opposite sex. When they mate they do not produce offspring effectively reducing the pest population.
20. How is lac obtained?  
Lac, is a resinous secretion of the insect, *Laccifer lacca*, which is a species of scale insect. The female insect deposits lac on the twigs and young branches of several varieties of soapberry and acacia trees and particularly on the sacred fig, *Ficus religiosa*. The twigs are cut and the lac is melted off, refined, and used in shellac and varnishes.

(2x7=14 Marks)

- C. Answer **any four** questions in not more than a paragraph each. Each carries 5 marks.
21. What are the different modes of infection?  
Innoculative, direct, contaminative and retro.
  22. How is biocontrol carried out?  
Identification of the antagonistic organism, (insects, fungi, bacteria) breeding, release into infested area. Identification of natural compounds for application, etc.
  23. How will you prevent the proliferation of mosquitoes?  
Keep surroundings clean and free from stagnating water, eliminate all sorts of breeding grounds, apply approved insecticides if necessary, cover wells and water sources with nets, resort to fogging when necessary, keep barns and cow sheds clean and hygienic.
  24. Write a brief note on dengue fever.  
Dengue fever is a mosquito-borne disease caused by the dengue virus. Symptoms typically begin three to fourteen days after infection. This may include a high fever, headache, vomiting, muscle and joint pains, and a characteristic skin rash. Recovery generally takes two to seven days. In a small

proportion of cases, the disease develops into the life-threatening dengue hemorrhagic fever, resulting in bleeding, low levels of blood platelets and blood plasma leakage, or into dengue shock syndrome, where dangerously low blood pressure occurs. Dengue is spread by several species of mosquito of the *Aedes* type, principally *A. aegypti*

25. How do *Spodoptera* species and *Rhynchophorus* species cause loss to farmers? Plants attacked by *Spodoptera* caterpillars have skeletonized leaves, shot holes, and dieback stems. The entire paddy crop dies within few days due to swarming attack.

*Rhynchophorus*: Weevil larvae excavate holes in the trunk of palm trees up to a metre long, thereby weakening and eventually killing the host plant.

26. Write a short note on the scope of apiculture in Kerala. The climatic and environment conditions are favourable, flowers are readily available throughout the year, market is good, opportunities for export is high, locally adapted bees are available.

(5x4=20 Marks)

D. Write essays on any two of the following. Each carries 10 marks.

27. Highlight the advantages of aquaculture. 75% of the earth is ocean and seas; more than 10% of the land area are also water bodies. This vast area can be used to culture high protein food with minimum costs, profitable industry, locally adapted organisms can be grown feeding can be natural as well as artificial in intensive culture, local traditional knowledge can be used, good demand etc.
28. Trace the life cycle of *Entamoeba histolytica*. What disease does it cause? The active (trophozoite) stage exists only in the host and in fresh loose faeces; cysts survive outside the host in water, in soils, and on foods, especially under moist conditions on the latter. Flies transfer the pathogen to exposed food, washing vegetables fruits etc in contaminates water etc enable the pathogen to reach the human host. The amoeba bores into the intestinal wall, causing lesions and intestinal damages and may reach the blood stream. From there, it reaches different vital organs of the human body, usually the liver; but sometimes the lungs, brain, spleen, etc. A common outcome of this invasion of tissues is a liver abscess, which can be fatal if untreated.
29. Highlight the importance of the honey bee. Impact on pollination, production of honey, royal jelly, propolis, bees wax and their market, hobby as well as a profitable industry.
30. Describe how mussels are cultured. Selection of mature and gravid adults, induction of spawning by electric shock, production of spat, loading on to ropes and rearing by hanging the ropes from rafts.

(2x10=20 Marks)