

**CHORDATES - I**

Under CBCS – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A**Answer ALL Questions:****(10 × 1 = 10)**

- Balanoglossus is popularly known as
 - Tongue worm
 - Earthworm
 - Tape worm
 - Narcine
- Animals without jaws are called
 - Ganthostomata
 - Agnatha
 - Placodermi
 - Osteichthyes
- Name the gland which is found in male lizards below the thigh in a row.
 - Salivary glands
 - Scent glands
 - Femoral glands
 - Sebaceous glands
- What type of receptors is found in lateral line of Scoliodon?
 - Thermoreceptors
 - Rheoreceptors
 - Chemoreceptors
 - Photoreceptors
- The first vertebra of frog is called
 - Atlas
 - Amphicoelous
 - Urostyle
 - Sacral vertebra
- Which animal is looks like lance?
- Name the larva of Petromyzon.
- Which animal has scroll valve in digestive system?
- Comment on Phonoreceptors.
- Which is commonly called as master gland of the endocrine system?

SECTION – B**Answer ALL Questions:****(5 × 7 = 35)**

11. a) Explain the general characters of Ascidian.
(OR)
b) Enumerate the affinities of Balanoglossus.
12. a) Briefly explain the morphology of Rabbit.
(OR)
b) List out the general characters of Prochordates.
13. a) Elucidate the structure of a typical vertebrate skin with sketch.
(OR)
b) Compare the respiratory system of a fish with an amphibian.
14. a) Compare the heart of amphibian with a mammal.
(OR)
b) Write down the structure of typical brain in all vertebrates.
15. a) Write a short note on pectoral girdle of frog.
(OR)
b) Compare the excretory system of a bird with a mammal.

SECTION – C**Answer any THREE Questions:****(3 × 10 = 30)**

16. With a neat sketch, describe the external characters of Amphioxus.
17. Elaborate the external characters of Calotes with a neat labeled diagram.
18. Give a detailed account on digestive system of pigeon.
19. Discuss the receptor organs in vertebrates. Add a note on its significance.
20. Explain in detail about hormones of pituitary gland and their role in vertebrates.




CHORDATES - II

Under CBCS – Credit 4

 Time: **3 Hours**

 Max. Marks: **75**
SECTION – A
Answer ALL Questions:
(10 × 1 = 10)

1. The sessile urochordates developed from free swimming ____
 a) Mysis b) Zoea c) Nauplius d) Tadpole larva
2. Which of the following fish that attached the eggs to their body?
 a) Salmon b) Gambusia c) Hippocampus d) Tilapia
3. Which of the following is non-poisonous snake?
 a) Bungarus b) Natrix c) Micrurus d) Hydrophis
4. Bird's hind limbs and their muscles are well adapted for
 a) Perching b) Flying c) Eating d) Swimming
5. The well-known example of Metatheria is
 a) Lion b) Kangaroo c) Kiwi d) Ostrich
6. Name the earliest known reptile which lived in Carboniferous period.
7. What is Catadromous migration?
8. Name the limbless amphibian which coils around the egg mass?
9. Comment on Nocturnal migration.
10. What do you mean by Acrodont?

SECTION – B
Answer ALL Questions:
(5 × 7 = 35)

11. a) Elucidate the theories for origin of Vertebrates.
 (OR)
 b) List out the trends in the origin of birds.
12. a) Write about migration in fishes.
 (OR)
 b) What are the parental cares occur in fishes?
13. a) Write an account on parental care in Amphibia.
 (OR)
 b) What are the salient features of Axoloti?
14. a) Explain the mechanism of flight in birds.
 (OR)
 b) Write a short note on flightless birds.
15. a) Write about Prototherians.
 (OR)
 b) Enumerate the characters of probable ancestor of mammals.

SECTION – C
Answer any THREE Questions:
(3 × 10 = 30)

16. Describe the evolutionary trends in the origin of Reptiles.
17. Write an elaborate account on accessory respiratory organs in fishes.
18. Elaborate any two poisonous and non-poisonous snakes of South India.
19. Write an essay on migration in birds.
20. Explain in detail about adaptations of aquatic mammals.





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VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.A./B.Sc./B. Com. Degree (Semester) Examinations, April 2018

Part – IV : NME subject : Second Semester : Paper – I

FOOD AND NUTRITION

Under CBCS – Credit: 2

Time: **2 Hours**

Max. Marks: **75**

SECTION – A

Answer ALL Questions:

(10 × 1 = 10)

1. RDA derived by our country in the year
a) 1944 b) 1945 c) 1946 d) 1947
2. Basic structural materials of body is
a) Proteins b) Carbohydrates
c) Fatty acid d) Minerals
3. In chicks, the embryonic mortality is due to the deficiency of
a) Vitamin E b) Vitamin C c) Vitamin D d) Vitamin K
4. Anaemia is caused by the deficiency of
a) Iron b) Phosphorus c) Sulphur d) Calcium
5. Who discovered vitamin A?
a) Mc Collum b) Matill c) Conclin d) Dam

Give Short Answer:

6. Mention any one effective method for eliminate rodents.
7. Write any two fat soluble vitamins.
8. Name the method for preservation of milk.
9. Expand FAO.
10. Expand RDI.

SECTION – B

Answer ALL Questions:

(4 × 10 = 40)

11. a) Write an account on the Psychological functions of food.

(OR)

b) Give an account on nutritional and social functions of food.
12. a) Write short notes on sources and physiological role of Vitamin B1 and B12.

(OR)

b) Give an account on the functions of Protein.
13. a) Expand and comment on RDA.

(OR)

b) Describe the Kwashiorkor and Marasmus syndromes.
14. a) Comment on the physiological importance of any two minerals.

(OR)

b) Explain the controlling measures for insects and rodents.

SECTION – C

Answer any TWO Questions:

(2 × 12½ = 25)

15. Write an essay on structure and classification of carbohydrates and Fats.
16. Give a detailed account on the Fat soluble vitamins and their deficiency diseases.
17. Describe the various methods for food preservation.



**DEVELOPMENTAL BIOLOGY**

Under CBCS – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A**Answer ALL Questions:****(10 × 1 = 10)**

- Theory of Epigenesis was proposed by
 - Wolff
 - Malpighi
 - Darwin
 - Ernst Haeckel
- The cleavage producing radially symmetrical embryos is called
 - Spiral cleavage
 - Radial cleavage
 - Biradial cleavage
 - Rotational cleavage
- Which of the following is foetal membrane in Chick?
 - Chitin
 - Egg shell
 - Chorion
 - None of the above
- This hormone is responsible for moulting in insects.
 - Thyroxine
 - TSH
 - Fertilizin
 - Ecdyson
- The test tube baby technique was devised by _____ Scientist.
 - American
 - Russian
 - British
 - European
- Comment on Spermatogenesis.
- What do you mean by parthenogenesis?
- Comment on Gastrulation.
- Define- Regeneration.
- Who proposed Single Gradient theory?

SECTION – B**Answer ALL Questions:****(5 × 7 = 35)**

- Give an account on types of eggs.

(OR)

 - Explain the different phases of Oogenesis.
- Write a short note on Fate map in Amphioxus.

(OR)

 - Briefly explain the planes of cleavage.
- Write down the development of eye in Chick.

(OR)

 - What are the events occur during gastrulation in Frog?
- Elucidate the functions of placenta.

(OR)

 - Enumerate the types of Regeneration.
- Write about Nucleo cytoplasmic interaction.

(OR)

 - List out the contraceptive devices used for birth control.

SECTION – C**Answer any THREE Questions:****(3 × 10 = 30)**

- With a neat sketch, describe the structure of mammalian spermatozoa.
- Explain in detail about physiological changes in fertilization.
- Elaborate the four types of foetal membranes in Chick.
- Give a detailed account on role of hormones in insect metamorphosis.
- Discuss the methods for producing test tube babies and add its advantages.




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B.Sc. Zoology Degree (Semester) Examinations, April 2018

Part – III : Core Subject : Fourth Semester : Paper – II

PHYSIOLOGY

Under CBCS – Credit 5

 Time: **3 Hours**

 Max. Marks: **75**
SECTION – A
Answer ALL Questions:
(10 × 1 = 10)

1. Which of the following microelement indispensable for normal life?
 - a) Iron
 - b) Chlorine
 - c) Zinc
 - d) Phosphorus
2. Haemocyanin is a _____ coloured pigment
 - a) Blue
 - b) Red
 - c) Green
 - d) Brown
3. The fundamental unit of kidney is
 - a) Nephron
 - b) Urethra
 - c) Bladder
 - d) Ureters
4. A neuron has
 - a) Cyton
 - b) Axon
 - c) Dendron
 - d) All of these
5. B cells of Islets of Langerhans secrete
 - a) Insulin
 - b) Glucagon
 - c) Somatostatin
 - d) Adrenalin
6. Comment on Rickets.
7. What is Respiratory Quotient?
8. Define Euryhaline organism.
9. Comment on Actin.
10. Comment on Adrenal gland.

SECTION – B
Answer ALL Questions:
(5 × 7 = 35)

11. a) Discuss about the fat soluble vitamins and their role in animal life. **(OR)**
 - b) Analyze the various branches of physiology.
12. a) Explain about the composition of blood. **(OR)**
 - b) Write a note on oxygen dissociation curve.
13. a) Describe the structure of human kidney with a neat diagram. **(OR)**
 - b) Discuss about classification of animals based on excretory products.
14. a) Give an account on reflex action. **(OR)**
 - b) Explain the concept of synapse.
15. a) Discuss about the biological clock with examples. **(OR)**
 - b) Pituitary is the master gland of endocrine system-Justify.

SECTION – C
Answer any THREE Questions:
(3 × 10 = 30)

16. Discuss about the digestion and absorption of carbohydrates.
17. Explain about the origin and conduction of heart beat.
18. Give a detailed account on osmoregulation in freshwater and marine teleosts.
19. Describe the ultra structure of skeletal fibres with neat diagrams.
20. Analyze the structure and functions of human eye.





09SB41
VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

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B.Sc. Zoology Degree (Semester) Examinations, April 2018
Part – IV : Skill based subject : Fourth Semester : Paper – I

CLINICAL LAB TECHNOLOGY

Under CBCS – Credit: 2

Time: **2 Hours**

Max. Marks: **75**

SECTION – A

Answer ALL Questions:

(10 × 1 = 10)

- Absence of sperm in the semen is called as
 - Azoospermia
 - Aspermia
 - Hypospermia
 - Hyperspermia
- Name the device used to determine the concentration of a known solute in a solution.
 - Colorimeter
 - CT Scan
 - MRI Scan
 - Doppler Scan
- On health point of view good cholesterol is
 - HDL
 - LDL
 - Triglycerides
 - None of these
- The recommended normal blood pressure in man is
 - 80/120 mmHg
 - 70/140 mmHg
 - 60/150 mmHg
 - 50/160 mmHg
- The temperature generally inside the autoclave for sterilization is
 - 121°C
 - 141°C
 - 161°C
 - 181°C

Give Short Answer:

- Name the fluid containing sperm that is released during male ejaculation.
- Name the organ of our body is called as Cradle of RBC.
- Write the liquid portion of our blood.
- Expand PPE.
- Expand MRI.

SECTION – B

Answer ALL Questions:

(4 × 10 = 40)

- a) Describe the principle and applications of Haemocytometer.

(OR)

b) Critically comment on Haemoglobinometer.
- a) Write an account on lipid profile testing in clinical laboratories.

(OR)

b) Comment on diseases Anemia and Jaundice.
- a) Explain the principle and applications of Colorimeter.

(OR)

b) Explain the medical importance Stool examination.
- a) Comment on Urine profile examination.

(OR)

b) Describe the Bio safety levels in clinical laboratories.

SECTION – C

Answer any TWO Questions:

(2 × 12½ = 25)

- Write an essay on Semen analysis.
- Give a detailed account on Compositions of blood.
- Describe the medical importance of ECG and EEG.





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B.Sc. Zoology Degree (Semester) Examinations, April 2018

Part – III : Allied Subject : Fourth Semester : Paper – II

BIOLOGY AND HUMAN WELFARE

Under CBCS – Credit 4

Time: **3 Hours**

Max. Marks: **75**

SECTION – A

Answer ALL Questions:

(10 × 1 = 10)

1. The causative organism of Polio is a
 - a) bacteria
 - b) virus
 - c) Fungi
 - d) Helminth parasite
2. Tuberculosis affect
 - a) Kidney
 - b) Lungs
 - c) Nerves
 - d) Digestive tract
3. Amoebic dysentery is caused by
 - a) Vibrio cholera
 - b) entamoeba
 - c) penicillin
 - d) anchylostoma
4. Optimum temperature for the growth of silkworms is
 - a) 70° – 75° F
 - b) 30° – 35° F
 - c) 20° – 25 °
 - d) 10°- 30° F
5. Which of the following bee is responsible for laying eggs for a colony?
 - a) worker bee
 - b) drone
 - c) queen
 - d) bumble bee
6. How do you call the viruses that cause damage to the cells in which they live?
7. What is the common name of a spherical bacterium?
8. Name the disease caused by Wuchereria?
9. Name the substance used to induce breeding in fishes.
10. Which member of the bee colony secrete wax?

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SECTION – B

Answer ALL Questions:

(5 × 7 = 35)

11. a) Write about the transmission of Aids.
(OR)
 - b) How does Rabies disease establish in a man?
12. a) Draw and label the structure of bacteria.
(OR)
 - b) Write about Tuberculosis.
13. a) How is elephantiasis caused?
(OR)
 - b) Write a short note on fungal diseases.
14. a) Give a short account on ‘Life Cycle of Silkworm’.
(OR)
 - b) Give short note on edible fishes.
15. a) Describe the morphology of Indian oyster mushroom.
(OR)
 - b) Discuss the nutritive and medicinal value of mushroom.

SECTION – C

Answer any THREE Questions:

(3 × 10 = 30)

16. Describe the structure of a typical virus.
17. Give an account on a) cholera and b) Tetanus.
18. Write about the symptoms, control and treatment of malaria.
19. Discuss the common diseases of silkworm and their control.
20. How is biogas produced?





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B.Sc. Zoology Degree (Semester) Examinations, April 2018

Part – III : Core Subject : Sixth Semester : Paper – I

EVOLUTION

Under CBCS – Credit 5

Time: **3 Hours**

Max. Marks: **75**

SECTION – A

Answer ALL Questions:

(10 × 1 = 10)

- Biogenetic law was proposed by
 - Urey & Miller
 - Ernst Haeckel
 - Von Baer
 - Weidersheim
- The difference in closely related animals is called
 - mimicry
 - variation
 - anology
 - Homology
- Sibling species has
 - morphological similarity but reproductively isolated
 - morphological dissimilarity
 - same breeding time
 - same breeding habit
- The type of fossil filled with minerals instead of organic matter is called
 - cast
 - mould
 - petrified fossil
 - track
- Plantigrade gait refers to
 - walking on digits
 - walking on hooves
 - presence of opposable toes
 - walking with entire sole
- Who is the father of comparative embryology?
- Write any two factors that upset Hardy-weinberg equilibrium.
- What is meant by isolating mechanism?
- Who devised the lead method of dating the fossils?
- Which is the place of origin of Horse?

09CT61

SECTION – B

Answer ALL Questions:

(5 × 7 = 35)

- a) How do oparin and Haldane explains the origin of Life?
(OR)
 - How did Lamark explain Evolution?
- a) Analyse the evolutionary significance of genetic drift.
(OR)
 - Briefly explain Hardy-weinberg law.
- a) What are the causes of extinction?
(OR)
 - Discuss about protective colouration.
- a) How do animals get fossilized?
(OR)
 - Discuss the carbon dating method.
- a) What is adaptive radiation? Write about its causes and significance.
(OR)
 - What is orthogenesis? Write about the changes in the hindlimb of horse.

SECTION – C

Answer any THREE Questions:

(3 × 10 = 30)

- Bring out the evidences for evolution from Morphology and physiology.
- Discuss the experimental evidences that support Natural selection theory.
- Analyse the role of isolating mechanisms in Evolution.
- Write about the Geological Time Scale.
- Explain how man evolved biologically and culturally.




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B.Sc. Zoology Degree (Semester) Examinations, April 2018

Part – III : Core Subject : Sixth Semester : Paper – II

MICROBIOLOGY & IMMUNOLOGY

Under CBCS – Credit 5

 Time: **3 Hours**

 Max. Marks: **75**
SECTION – A
Answer ALL Questions:
(10 × 1 = 10)

1. The five kingdom concept for the classification of microbes was proposed by
 - a) Linnaeus b) Haeckel c) Whittaker d) Flemming
2. The stimulatory substance produced by the bacteria is
 - a) lactic acid b) pyruvic acid
 - c) indole acetic acid d) malic acid
3. The cholera disease is caused by
 - a) vibrio b) mycobacterium
 - c) corny bacterium d) salmonella
4. The macro immunoglobulin is
 - a) IgA b) Ig M c) Ig D d) Ig E
5. In transplants, the tissue transferred between different species is known as
 - a) allograft b) isograft c) xenograft d) autograft
6. Comment on pili.
7. What do you mean by MPN?
8. Enlist any two symptoms of tuberculosis.
9. Mention the primary lymphoid organs.
10. What do you know about ELISA?

SECTION – B
Answer ALL Questions:
(5 × 7 = 35)

11. a) Describe briefly the cultural characteristics of bacteria.
(OR)
b) What are the structural features of bacteria?
12. a) Write a brief account on the soil microbes.
(OR)
b) Give a brief account on the physiology of nitrogen fixation.
13. a) Write the causative organism and symptoms of the disease typhoid.
(OR)
b) Describe briefly the causative organism and mode of transmission of the disease leprosy.
14. a) Explain briefly the secondary lymphoid organs.
(OR)
b) Give a brief account on the types of immunity.
15. a) Describe briefly the structure and functions of MHC.
(OR)
b) Discuss briefly the types of grafting.

SECTION – C
Answer any THREE Questions:
(3 × 10 = 30)

16. Discuss in detail the bacterial reproduction.
17. Analyse in detail the physical and chemical methods in food preservation.
18. Give a detailed account on the causative organism, symptoms and mode of transmission of the disease polio.
19. Write an essay on the structure and functions of immunoglobulin.
20. Present in detail the cell mediated immunity.





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B.Sc. Zoology Degree (Semester) Examinations, April 2018

Part – III : Elective Subject : Sixth Semester : Paper – I

DAIRY FARMING

Under CBCS – Credit 3

Time: **3 Hours**

Max. Marks: **75**

SECTION – A

Answer ALL Questions:

(10 × 1 = 10)

1. Which one of the following is exotic breeds in cow?
a) Jersey b) Sahiwal c) redsindhi d) Grey sindhi
2. The calorific value of one gram of fat is
a) 4 b) 6 c) 9 d) 7
3. The symptom of the disease Mastitis is
a) painful udder b) painful stomach
c) painful liver d) painful muscle
4. The first secretion of the mammary gland following parturition is known as
a) sebum b) serum c) colostrums d) globulin
5. The deep freezing of semen is stored at _____ °C
a) -196 b) – 80 c) -70 d) – 50
6. Define hybrid vigour.
7. Listout the digestive glands of cow.
8. Mention the symptoms of bloat.
9. Bring out the composition of milk.
10. Enlist the semen collection technique.

SECTION – B

Answer ALL Questions:

(5 × 7 = 35)

11. a) Explain briefly the exotic breeds of cow.
(OR)
b) What are the scope in dairy farming?
12. a) Write a brief account on the digestive system of cow.
(OR)
b) Give a brief account on the nutritive value of cattle feed.
13. a) Write a note on the foot and mouth diseases.
(OR)
b) Describe briefly the milk fever disease.
14. a) Explain briefly the techniques to produce quality milk.
(OR)
b) Give a brief account on the physiology of milk production.
15. a) Describe briefly semen collection technique.
(OR)
b) Discuss briefly the equipment for dairy cow.

SECTION – C

Answer any THREE Questions:

(3 × 10 = 30)

16. Discuss in detail the merits of inbreeding and outbreeding.
17. Analyse in detail the feed additives and silage preparation for cattle feed.
18. Give a detailed account on any two bacterial diseases of cow.
19. Write an essay on composition, pasteurization and nutritive value of milk.
20. Present in detail the role of co-operative societies in milk production.





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B.Sc. Zoology Degree (Semester) Examinations, April 2018

Part – III : Elective Subject : Sixth Semester : Paper – II

ENVIRONMENTAL BIOLOGY

Under CBCS – Credit 2

Time: **3 Hours**

Max. Marks: **75**

SECTION – A

Answer ALL Questions:

(10 × 1 = 10)

- Which of the following is the Universal solvent?
a) Sulphuric acid b) Water c) Plasma d) Aqua regia
- Rivalry between two animals for a common resource is called
a) Antibiosis b) Predation c) Competition d) Symbiosis
- Functional status of an organism in its community is called as
a) Ecotone b) Edge effect c) Niche d) Duty
- The floor of the sea is called as
a) Pelagic region b) Benthic region
c) Neritic zone d) Oceanic zone
- The standard of particulate matter in pollution free air is
a) 60 mg/m³ b) 70 mg/m³ c) 80 mg/m³ d) 10 mg/m³
- How do you call an animal which tolerate wide ranges of temperature?
- What do you mean by inter specific competition?
- Define mortality.
- Give two examples of Ectoparasites.
- Give two examples of renewable resources.

SECTION – B

Answer ALL Questions:

(5 × 7 = 35)

- What do you understand by ‘Soil profile’?
(OR)
b) Enumerate the various soil fauna.
- Discuss the aspects of Symbiosis.
(OR)
b) How is a food web knitted?
- List out the characteristics of a community.
(OR)
b) Write a short account on Regulation of population.
- Discuss the characteristic features of estuarine habitat.
(OR)
b) Bring out the adaptive features of desert animals.
- How can we control air pollution?
(OR)
b) Discuss the effects of water pollution.

SECTION – C

Answer any THREE Questions:

(3 × 10 = 30)

- Evaluate the water problems in Terrestrial habitat.
- How does carbon and phosphorous recycled in the environment?
- Explain Ecological succession.
- How are parasites adapted for their mode of life?
- Write an essay on wildlife conservation and management?





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VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

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B.Sc. Zoology Degree (Semester) Examinations, April 2018
Part – IV : Skill based subject : Sixth Semester : Paper – I

FISH CULTURE

Under CBCS – Credit: 2

Time: 2 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions: (10 × 1 = 10)

- The rearing of fish with artificial feed is _____.
a) Traditional b) Intensive c) Extensive d) None of these
- The optimum pH for fish is _____.
a) 7 -9 b) 6 – 7 c) 9 – 10 d) 8 -10
- One species of fish reared in a pond is _____.
a) Monoculture b) Monosexculture
c) Polyculture d) All the above
- Which one is ornamental fish?
a) Catla b) Rohu c) Mrigal d) Gold fish
- Which one of the following is helminth disease?
a) Black spot b) White spot
c) Tail and fin rot d) Argulosis

Give Short Answer:

- What is mariculture?
- Mention any two scope of fish culture
- What is monoculture?
- Mention the symptoms of red eye disease.
- Expand CMFRI

SECTION – B

Answer ALL Questions: (4 × 10 = 40)

- Write a brief account on importance of fish culture.
(OR)
b) Explain the Integrated fish farming with illustrations.
- Describe the different types of fish ponds.
(OR)
b) Enumerate the salient features of any three Indian major carps.
- Write an account on monosexculture.
(OR)
b) Write a brief account on setting on aquarium.
- Give a detailed account on culture of Artemia and Chironomous
(OR)
b) Comment on the following (i) Lernaeosis (ii) Ergasilosis
(iii) Argulosis

SECTION – C

Answer any TWO Questions: (2 × 12½ =25)

- Give an account on maintenance and management of fish pond.
- Discuss the different types of culture systems in fish
- Describe the physical and chemical properties of water.





09SB62

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

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[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, April 2018
Part - IV : Skill based subject : Sixth Semester : Paper - II

VERMITECHNOLOGY

Under CBCS - Credit: 2

Time: 2 Hours

Max. Marks: 75

SECTION - A

Answer ALL Questions:

(10 × 1 = 10)

- Eisenia fetida* is an exotic species of _____.
a) India b) China c) Australia D) New Zealand
- The bottom of the basal layer of the vermibed is constituted by
a) Bricks or pebbles b) coconut husk
c) coarse sand d) loamy soil
- The ingredients of vermiwash are
a) Coelomic fluid b) Mucus
c) Enzymes d) All the above
- The plant growth hormones produced by microbes in vermicompost are
a) Auxins b) Gibberellins c) Cytokinins d) All the above
- Earthworms act as
a) Pollinators b) pollutants
c) Detoxifying agents d) None of these

Give Short Answer:

- Expand KVIC and NABARD.
- Name the African and Indian earthworms commonly used in vermicomposting.
- Specify the percentage of moisture to store the vermicompost.
- Mention the organ of earthworm secreting enzymes.
- Name the method of vermiwash application inducing flowering in crops.

SECTION - B

Answer ALL Questions:

(4 × 10 = 40)

- Compare and contrast exotic and indigenous species of earthworms involving in vermicomposting.
(OR)
b) Enumerate the biological characteristics of vermicompost.
- Define and characterize vermicasts.
(OR)
b) What are the steps involving in the preparation of vermibed for vermiculture?
- Enlist the applications of vermiwash.
(OR)
b) Give an account on economics of vermicompost.
- Enumerate the beneficial activities of earthworms to enrich the soil fertility.
(OR)
b) Comment on the applications of vermicompost in agriculture.

SECTION - C

Answer any TWO Questions:

(2 × 12½ = 25)

- Write down the procedure for the preparation of vermiwash.
- Brief various methods of vermicomposting.
- Give a detailed account on financial support by KVIC and NABARD for vermitechology.



**ZOOLOGY FOR COMPETITIVE EXAMINATION**

Under CBCS – Credit: 2

Time: 2 Hours

Max. Marks: 75

Answer ALL Questions:**(75 × 1 = 75)**

1. The body of Hydra is
 - a) Asymmetrical
 - b) Bilateral symmetrical
 - c) Radially symmetrical
 - d) None of these
2. Birds and bats are good fliers. The bat differs from a bird in having.
 - a) Diaphragm
 - b) Four-chambered heart
 - c) Wings
 - d) Small brain
3. Radial symmetry is seen in
 - a) Mollusca
 - b) Star fishes
 - c) Sponges
 - d) Fishes
4. The term Phylum in taxonomy was given by
 - a) John Ray
 - b) Carolus Linnaeus
 - c) G.L.Cuvier
 - d) All of these
5. Canal system is characteristics of
 - a) Hydra
 - b) Sponges
 - c) Sea anemone
 - d) Sea urchin
6. A spider belongs to class
 - a) Insecta
 - b) Myriapoda
 - c) Archnida
 - d) Onychophora
7. The trophozoite of Plasmodium lives in
 - a) Erythrocytes of man
 - b) Liver cells
 - c) Stomach of mosquito
 - d) Blood plasma
8. The disease caused by Trypanosoma
 - a) Sleeping sickness
 - b) Chaga's disease
 - c) Kala-azar
 - d) Oriental sore
9. The cell drinking phenomenon is termed as
 - a) Circumfluence
 - b) Ingestion
 - c) Pinocytosis
 - d) Circumvallation

10. Canal system in *Lucosolenia* is
 a) Asconoid b) Syconoid
 c) Leuconoid d) Rhagon
11. Pneumatophores are present in
 a) Tubularia b) Obelia
 c) Hydra d) Physalia
12. Coral reef formation is mainly related to
 a) Sponges b) Anthozoans
 c) Molluscs d) Hydrozoans
13. Portuguese Man of war is the common name for
 a) Aurelia b) Metridium
 c) Physalia d) Tubipora
14. Scolex is a characteristic of
 a) Flatworms b) Tapeworms
 c) Roundworms d) Earthworms
15. Flame cells are the excretory organs of animals belonging to the phylum
 a) Protozoa b) Porifera
 c) Coelentrata d) Platyhelminthes
16. The secondary host of *Taenia solium* is
 a) Pig b) Female anopheles
 c) Cow d) Culex
17. Which one is hermaphrodite?
 a) Ascaris b) Trichuris
 c) Megascolex d) Enterobius
18. Roundworms differ from flatworms in having a
 a) Bilateral symmetry b) Cuticle
 c) Longitudinal nerve cord d) Pseudocoel
19. Which of the following penetrates through skin and enters the intestine?
 a) Ascaris b) Tapeworm
 c) Hookworm d) Amoeba
20. Anticoagulant secreted by leech is
 a) Hirudin b) Heparin
 c) Haematin d) Haemozoin
21. In bee the royal jelly is fed to the
 a) Queen b) Drones
 c) Larva that becomes queen d) Workers
22. Silk glands are modified
 a) Salivary glands b) Collateral glands
 c) Anal glands d) Mushroom glands
23. The vector for the viral dengue fever is
 a) Sandfly b) Housefly
 c) Head louse d) Mosquito
24. A hermit- crab is scientifically known as
 a) Sea anemone b) Sea cucumber
 c) Sea star d) Sea horse
25. The locomotor organs of echinoderms are called
 a) Parapoda b) Pseudopodia
 c) Setae d) Tube feet
26. Placoid scales are found in
 a) Cartilaginous fishes b) Bony fishes
 c) Lung fishes d) Paleontological fishes
27. Most venomous fish is
 a) Electric fish b) Saw fish c) Stone fish d) Dog fish
28. Water into the gills of fishes passes through
 a) Nostrils b) Mouth
 c) Gill slits d) Swimming bladder
29. Mermaid purse is
 a) An a shell b) Egg case of skate fishes
 c) A colony of skate fishes d) None of these
30. A jawless vertebrate is
 a) Amphioxus b) Chelone c) Scoliodon d) Petromyzon
31. The adult amphibians possess
 a) Pronephric kidney b) Mesonephric kidney
 c) Metanephric kidney d) Both a and b
32. The flying frog is
 a) Hyla b) Bufo c) Rhacophorus d) Rana
33. A urinary bladder is absent in
 a) Chameleon b) House lizard c) Snake d) Crocodile

34. The scientific name of peacock is
a) Pavo cristatus b) Gallus gallus
c) Columba livia d) None of these
35. The largest living bird is
a) Ostrich b) Albatros c) penguin d) Elephant bird
36. Kiwi is the national bird of
a) New Zealand b) India c) Japan d) Australia
37. Connecting link between reptiles and birds is
a) Archaeopteryx b) Dimetrodon c) Sphenodon d) Dodo
38. The incisors grow throughout life in
a) Dogs and cats b) Monkeys and apes
c) Cows and sheeps d) Rats and rabbits
39. The wisdom teeth in man is
a) 1st molar b) Last molar
c) 1st premolar d) Last incisor
40. Mammary glands are modified
a) Salivary glands b) Lacrimal glands
c) Sweat glands d) Sebaceous glands
41. A mammal which never drinks water is
a) Kangaroo b) Shrew
c) Kangaroo rat d) Spiny ant eater
42. What name is given to the scientific study of tissues?
a) Anatomy b) Cytology c) Histology d) Ecology
43. Oil in the skin is secreted by
a) Mucous glands b) Sebaceous glands
c) Hair follicles d) Sweat glands
44. Life of RBC is
a) 130 days b) 120 days c) 128 days d) 122 days
45. Human body can tolerate a loss of
a) One litre of blood b) Half a litre of blood
c) 1.5 litres of blood d) 2 litres of blood

46. The smallest type of leucocyte in the blood of human adult is
a) Monocytes b) Microcytes
c) Lymphocytes d) Eosinophils
47. Increase in the number of RBC is called
a) Leukocytosis b) Polycythemia
c) Polycytosis d) Leukopenia
48. Which fish is famous for cod liver oil?
a) Shark b) Cod c) Amia d) Both a and b
49. Tooth shaped scales are
a) Cycloid b) Ctenoid c) Ganoid d) Placoid
50. Indian monkey is
a) Macca b) Gorilla
c) Ramapithecus d) Simia
51. Specific function of liver is
a) Excretion b) Histolysis
c) Digestion d) Glycogenolysis
52. Trypsin is secreted by
a) Stomach b) Pancreas c) Liver d) Duodenum
53. Fat soluble vitamins are
a) A, D and E b) B, C and D c) E, D and B d) A, B and C
54. The deficiency of vitamin C causes
a) Anaemia b) Scurvy c) Rickets d) Xerophthalmia
55. The enzymes are chemically speaking
a) Proteins b) Lipids c) Vitamins d) None of these
56. Deficiency of calcium causes
a) Rickets b) Scurvy c) Rabies d) Addison's disease
57. When a man starves, he first of all consumes stored
a) Fats b) Proteins c) Glycogen d) Carbohydrates
58. Who coined the term vitamin?
a) Calvin b) Funk c) A.G.Tansley d) Vesalius

59. The incisor tooth is meant for
 a) Biting and cutting b) Chewing
 c) munching d) all of these
60. The crown of tooth is covered by
 a) Enamel b) Dentine c) Desmin d) None of these
61. The hardest part of a tooth is
 a) Pulp b) Dentine c) Enamel d) Crown
62. The final product in the digestion of starch is
 a) Maltose b) Cellulose c) Glucose d) Sucrose
63. Basic unit of protein is
 a) Helical strand b) Peptones c) Amino acids d) Glucose
64. Vermiform appendix is a part of
 a) Intestine b) Liver
 c) Rectum d) Stomach
65. Glucose can be converted into glycogen in the
 a) Small intestine b) Pancreas
 c) Adipose tissue d) Skeletal muscles
66. While swallowing, food is prevented from entering into the nasal cavity by
 a) Epiglottis b) Soft palate c) Tonsils d) Uvula
67. The length of alimentary canal in man is about
 a) 6 feet b) 18 feet c) 22 feet d) 32 feet
68. Bacteria entered with food are killed in stomach in
 a) Hcl b) Rennin
 c) Pepsin d) Sodium bicarbonate
69. Normal growth and development of an organism depends on
 a) A balanced diet b) Rich carbohydrate diet
 c) Rich protein diet d) Rich fatty diet
70. Islets of langerhans secretes
 a) Glucogon b) Insulin
 c) Enzymes d) None of these

71. Citric cycle was proposed by
 a) H.J.Muller b) T.Caperson
 c) F.Sanger d) H.A.Kreb
72. Covering of lung is called
 a) Pericardium b) Perichondrium
 c) Pleural membrane d) Peritoneum
73. The opening into the wind pipe or trachea is
 a) Larynx b) epiglottis c) Glottis d) Bronchi
74. The functional unit of the lung is
 a) Neuron b) Alveolus c) Bronchus d) None of these
75. The structural and functional unit of kidney is
 a) Neuron b) Nephron c) Medulla d) Cortex

