B.Sc. Zoology

REGULATIONS

(With Effect From 2007-2008)

1. ELIGIBILITY FOR ADMISSION

Candidate for admission to the first year of the degree of Bachelor of Science Course shall be required to have – passed the Higher Secondary Examination (Academic or Vocational) Conducted by the Government of Tamil Nadu, or a examination accepted by the Syndicate, subject to such conditions as may be prescribed therefore.

Provided that candidate for admission to the following branches shall have passed the qualifying examination with the subjects noted against each.

2. ELIGIBILITY FOR THE AWARD OF DEGREE

A candidate shall be eligible for the award of the Degree only if he/she undergone the prescribed course of study in a college affiliated to the university for the period not less than three academic years, passed the examinations prescribed and fulfilled such conditions as have been-prescribed therefore.

3. DURATION OF THE COURSE

The course of the Degree of Bachelor of Science shall consist of three academic years.

4. COURSE OF STUDY

The course of study for the B.Sc. Degree shall consist of the following and shall be in accordance with Appendix – I.

(i) Foundation Course (I Language and English)
(ii) Core Course (Main and allied Subjects)
(iii) Application oriented course.

5. QUESTION PAPER PATTERN (For Both Major and Allied)
Time: 3 hours  
Maximum: 100

Part A:  $10 \times 2 = 20$
(Answer All Questions)
(Two Questions from each Unit)

Part B:  $5 \times 4 = 20$
(Answer All Questions)
(One question from each unit with internal choice)

Part C:  $5 \times 12 = 60$
(Answer All Questions)
(One question from each unit with internal choice)

6. SCHEME OF EXAMINATION

Scheme of the Examination shall be as given in Appendix – 1

7. REQUIREMENTS FOR THE CANDIDATES TO GO TO II AND III YEAR

Candidates shall be eligible to go to II and III years only if they earn sufficient attendance prescribed by syndicate from time to time for the I/II year of the course.

8. PASSING MINIMUM

A candidate shall be declared to have passed in the each paper/practical wherever prescribed if he/she secures not less than 40% of marks prescribed for the examination. He/she shall be declared to have passed the whole examination if he/she passed in all the papers and practicals wherever prescribed as per the scheme of examinations.

9. CLASSIFICATION OF SUCCESSFUL CANDIDATES

1) Foundation course
   a) Language other than English, Successful candidates passing the examinations for the language papers and securing the marks (i) 60% and above (ii) 50% and above but below 60% in the aggregate shall be declared to have passed the examinations in the First
and Second Classes respectively. All other successful candidates shall be declared to have passed the examination in the Third class.

B.Sc. Degree Course Zoology – PRIDE

Appendix – I

Scheme of Examinations:

<table>
<thead>
<tr>
<th>Year</th>
<th>Title of the paper</th>
<th>Exam. years</th>
<th>Max. Marks</th>
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<tbody>
<tr>
<td>First Year</td>
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<tr>
<td>Language - I</td>
<td>Tamil – I</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Language - I</td>
<td>English – I</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Major - I</td>
<td>Invertebrata</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Allied - I</td>
<td>Chemistry</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Major Practical - I</td>
<td>Invertebrata</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Allied Practicals - I</td>
<td>Allied Chemistry</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Second Year</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Language - II</td>
<td>Tamil – II</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Language - II</td>
<td>English – II</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Major - II</td>
<td>Chordata</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Allied - II</td>
<td>Botany</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Practicals Major</td>
<td>Chordata</td>
<td>3</td>
<td>100</td>
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<tr>
<td>Allied</td>
<td>Allied Botany</td>
<td>3</td>
<td>100</td>
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<tr>
<td>Third Year</td>
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<td></td>
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<tr>
<td>Major - III</td>
<td>Cell Biology and Genetics</td>
<td>3</td>
<td>100</td>
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<tr>
<td>Major - IV</td>
<td>Biochemistry and Animal Physiology</td>
<td>3</td>
<td>100</td>
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<tr>
<td>Major – V</td>
<td>Developmental Biology and Immunology</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Major - VI</td>
<td>Environmental Science and Evolution</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Major - VII</td>
<td>Medical Laboratory Techniques</td>
<td>3</td>
<td>100</td>
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<tr>
<td>Major – VIII</td>
<td>Application oriented subject (AOS)</td>
<td>3</td>
<td>100</td>
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<td></td>
<td>Sericulture</td>
<td></td>
<td></td>
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<tr>
<td>Major Practical – III</td>
<td>Relevant to papers II to V</td>
<td>3</td>
<td>100</td>
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<td></td>
<td>3</td>
<td>100</td>
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</tbody>
</table>
Scope:

1. Structure and physiology of the types included with special emphasis on the adaptations to their modes of life and environments.
2. General characters, classification upto order level with examples and phylogenetic affinities of the invertebrate phyla included in the syllabus.
3. General topics.

UNIT I
Protozoa: Entamoeba, Leishmania, Trypanosoma, Elphidium, Plasmodium and Patamecium.

Locomotion, Nutrition, Skeleton and Reproduction, in Proteozoa.

Economic importance of Protozoa.

UNIT II
Porifera: Simple sponge.
Canal system, Histology skeleton, Larval forms, Affinities and Economic importance of porifera.

UNIT III
Coelenterata: Obelia Aurelia and sea anemone, Polymorphism and coral reefs
Ctenophora: Pleurobranchia and its affinities.

UNIT IV
Helminthes: Fasciola, Taenia and Ascaris, Trematodes, Cestodes and nematodes and elation in Human-welfare.
Coelom, Adaptations to different modes of life and excretion Affinities of polychetes.

UNIT V
Arthropoda: Millpede, Centipede, Penaeus; Grasshpper, Scorpion, Limulus and Peripatus.
Larval forms in crustacean, Parasitic crustacean, Insect mouth parts and their modifications.
Social life and economic importance of insects, prawn culture, Arthropod Vectors of human welfare.

UNIT VI
Mollusca: Pila, Freshwater Mussel, Sepia, Dentalium and Chiton.
Food modification; respiratory organs, Torsion in Gastropoda and economic importance of Mollusca.
Echinodermata: Starfish, Seacucumber, sea urchin and sea lily.
Water Vascular system and Echinaderm Larvae and their significance
Minor phyla; General description of minor phyla and classification.

Text Books:


Second Year  
PAPER II – CHORDATA

UNIT I  
1. General characters and outline classification of phylum: CHORDATA  
2. Origin of chordates  

UNIT II  
1. Agnatha: Structure of petromyzon, characters, classification and affinities of cyclostomata.  
2. Pisces: Characters and classification of fishers upto order, level, with examples  
   Structure of shark and Mugil  
   Structure and affinities of Dipnoi.  

UNIT III  
   Biology and adaptive features of Anura, Urodela and Apoda. Parental care in Amphibia.  
2. Reptilia: Characters and classification of Reptilia upto order level with South Indian examples. Skull in Reptilia.  
   Structure of Calotes.

UNIT IV
   Flight adaptation in birds – Palaeognathe (Ratitae), the flightless birds – Palate in birds – Bird migration.

2. Mammalia: Characters and classification of Mammals with upto order level with South Indian examples,
   Structure of Rat.
   Biology and distribution of Prototheria and – Metatheria.

UNIT V
1. Comparative Anatomy of the organ system of vertebrates in relation to their adaptations and evolution. (Integumentary, Digestive, Respiratory, Circulatory, Nervous, Urino-genital and skeletal system).

Text Books:


III YEAR
PAPER III – CELL BIOLOGY AND GENETICS
PART A : CELL BIOLOGY

UNIT I:
1. History of cell Biology – cell theory
2. Methods for the study of cells, light, phase contrast and Electron Microscope,
   Ocular and stage Micrometers – camera Lucida, cell homogenization –
   fractionation – Centrifugation and Isolation of cellular components.
   Fixation – stains and staining methods – vital staining – cell and Tissue
   culture.

UNIT II
Structure – Composition and functions of the following cell organelles: cell
Microsomes – Ribosomes – Lysosomes – Peroxisomes – chloroplasts – centrioles,
cilia, Flagella, Xlncleus- and Nucleolus.

UNIT III
2. DNA and RNA: Structure, Composition and functions
3. Cell division and cell cycle – Mitosis and Meiosis

PART B – GENETICS
UNIT IV

UNIT V


Text Book

1. Cell Biology by Veer Bala Rastogi, Rastogi Publications.
2. Cell Biology by Power

Reference:

UNIT I


UNIT II


UNIT III


UNIT IV

Organogenesis: Development of Brain, Eye, Ear and Heart in Frog and chick.
Development of foetal membranes (Extra embryonic) in chick and Mammal. Placenta – definition and significance – different types of placenta.

UNIT V

Immunology : Immune system – Types of immunity – types of immunoglobulin – Antigen – Antibody reaction Allergy – AIDS/HIV.

Text Books:

Text Books:
1. Bodemer, Modern Embryology, Holt Rinebar & Winston. N.Y.

References:
Chakravarthy, Immunology, Tata Mc Graw Hill.
Riott, I.M. Essential Immunology
Weir, D.M. Immunology.
Berril N.J. & Gerald Karp. Development.
Tata McGraw Hill.
Paper V Biochemistry & Animal physiology

Part A Biochemistry

Unit I
Fogg constituents: Protein, Carbohydrates, lipids minerals, salts & vitamins & their significance.

Unit II
Metabolism: Energy production from carbohydrates, proteins and fats – Basal metabolism – Regulation of metabolism.

Part B – Animal physiology

Unit III
ECG, Angiogram, Angioplasty, Bye pass surgery.
Unit IV

Endocrine physiology – Endocrine glands in man – secretions & disorders.

Unit V:


Reference – Text books


Reference:

UNIT I
Autecology:
1. Abiotic factors of environment
   Water – Air – Land.
   Physical factors: Temperature, pressure, light.
   Chemical factors: Oxygen, carbon dioxide, salinity.
2. Biotic factors of Environment:
   Interspecific interactions: Parasitism – mutualism – commensalisms and sysbiosis

UNIT II
Synecology (or) community Ecology:
Population characteristics:
Natality – mortality – density and age distribution – population control.
Community characteristics:
And transformers. Food relationship food links – food chain – food web community and ecological succession.
Ecosystem: Characteristics – Components of ecological pyramids – pond as an ecosystem.
Habitat Ecology:
Bio sphere – Lithosphere – hydrosphere and atmosphere.
Habitats: Terrestrial – Aquatic – Marine and freshwater.

Ecosystems of Biomes:

UNIT III

Environmental management (or) Applied Ecology
Natural resources and their management
Aquaculture and fisheries.
Forests: Protection of forests – chipko movement – social forest.
Wildlife Management:- Wildlife sanctuaries – National parks and Bioreserves in India.
Pollution: Air, water, soil, noise and radioactivity.
Environmental degradation – green house effect and ozone layer – pesticides and residual effects.

UNIT IV

Chemical evolution and origin of life:
Origin of self replicating systems and their evolution.
Theories and concepts of evolution:- Theories of Lamarek, Darwin and Devries – Neolamarckism and Neo Darwinism.

UNIT V

Species and Speciation – factors – isolating mechanisms.
Distribution of animals – geographic realms.
Evolution of man – cultural evolution
Text Book:


Reference:

1. Mukherjee, Environmental Biology, Tata McGraw Hill.
3. Clark, G.C., Elements of Ecology, John Wiley sons; Inc. N.Y.
7. Moody, Introduction to Evolution
Paper VII  Medical Laboratory Techniques

UNIT I
1. Knowledge of Principles: Use and maintenance of laboratory instruments like: Autoclave, hot air oven, incubators, water bath, centrifuge, refrigerator, Microscopes, colorimeter, pH meter, Hemoglobinometer, Hamocytometer, Balances and other equipment.
2. Cleaning, care and sterilization of laboratory items such as glasswares.
3. Knowledge and skill in the preparation of reagents and methods of different types of experiments.

UNIT II

UNIT III
5. Knowledge and skill in collecting blood samples, analysis of blood and basis hematological techniques.
Hematocruit, Packed cell Volume, Erythrocyte Sedimentation rate, RBC fragility test, platelet count, Reticulocytocrit, Hemonhagic disorders: clotting time, bleeding time, Prothrombin time, Test for deficiency in blood clotting factors.

UNIT IV
8. Knowledge and skill in the study and analysis of Urine samples, chemical parameters routinely required to be analysed – Pregnancy tests.
9. Analysis of Faces, semen, cerebrospinal shired for clinical investigation
10. Immunoelectrophoresis

UNIT V

11. Parasitology and vector biology.
   Examination of parasites relevant to human health, Malarial parasite and other Protozoans, Helminths and other worms. Study of vectors in the transmission of diseases.

12. Laboratory Administration, management and safety.

Text Book:

Reference Book
UNIT I

History of Sericulture: Nature and economic importance of Sericulture in India – Types of silkworm – Mulberry, Tasar, Muga & in.


UNIT II


Rearing techniques: Chawki rearing and late age rearing – quality of mulberry leaves for different age – mounting and harvesting of cocoons.

UNIT III

Silkworm pathology: Disinfection of rearing houses and the equipments – silkworm diseases – Bacterial, viral, fungal & protozoan and other natural enemies of silkworms.

Breeding of silkworms: Selection – Methods of selection – Breeding of resistant varieties.


UNIT IV


UNIT V


Text Books
1. Sulochana Shetty – Introduction to Sericulture.

References
First Year

Practical I - Invertebrate

1. Study of Museum specimens and slides relevant to the types studied in theory.

2. Dissection of
   (a) earthworm – Nervous system
   (b) Cockroach – Digestive, Nervous and Reproductive system
   (c) Pila – Digestive system

3. Mounting of
   (a) Body and penial setae in Earthworm
   (b) Mouth parts of;
      (i) Mosquito
      (ii) House fly
      (iii) Bed bug
      (iv) Cockroach
      (v) Honey Bee
   (c) Salivary glands of cockroach
   (d) Radula of Pila

The Record may also include a brief report of a Field – study undertaken during the course of the year.
Second Year
Practical II - Chordata

1. Identification of specimens studied in the theory

2. Shark: V, VII, IX and X cranial nerves, mounting of placoid scales and brain


5. Practical record has to be submitted during the University Practical Examination. The Record may also include a brief report of the field study – undertaken during the course of the year.
Third Year
Major Practical III - Cell Biology & Genetics, Biochemistry & Animal Physiology, Developmental Biology and Immunology

A. Cell Biology and genetics
1. Use of Microscope, Camera Lucida, Stage and Ocular micrometers
2. Counting of RBC and WBC using Haemocytometer
4. Mounting of Buccal epithelium and observing living cells using vital staining
5. Study of Mototic division using Onion root tips
6. Study of Meiotic division using insect testis
7. Study of prepared studies of different – tissues
8. Submission of practical records

B. Genetics practicals
1. Observation of common mutants of Drosophila
2. Preparation of mounts of the salivary gland chromosomes of Drosophila or chironomous larva.
3. Human Blood grouping
4. Submission of practical records.

C. Bio-chemistry and Animal physiology
1. Survey of digestive enzymes in cockroach
2. Study of human salivary amylase activity in relation to temperature
3. Estimation of oxygen consumption in fishes with reference to body weight
4. Study of ciliary activity in fresh water mussel in relation to temperature ($Q_{10}$)
5. Detection of nitrogenous waste products in fishtank water, bird ecreta and mammalian Urine.
6. Use of Kymograph Unit.
7. Submission of practical records

D. Developmental Biology & Immunology

Study of following prepared slides, museum specimens and materials

1. Section of testis and ovary showing the maturation stages of gametes.
2. Slides of mammalian sperm and ovum.
4. Slides of cleavage stages in Frog and chick.
5. Slides of Blastula and gastrula of Frog and chick.
7. Placenta of sheep or pig or rat.
8. Submission of practical record.
Major Practical IV – Environmental Science and Evolution, medical laboratory techniques and sericulture

A. Environmental Biology – Practicals

1. Measurement of environmental parameters:-
   (b) Terrestrial Environment: Using the Instrument for measuring Environmental parameters – Rain gauge – Maximum and minimum Thermometer – Wet and Dry bulb Hygrometer.

2. Plankton study: Fresh water and Marine water planktons

3. Adaptation in Aquatic and terrestrial animals based on a study of Museum specimens: Such as Rocky or sandy shore animals. Planktonic or Benthic animals, Flying or burrowing animals.

4. Study a natural ecosystem such as a pond, scrub, jungle or forest or seashore in the area.

5. A care study of pollution in the area.


b. Medical Laboratory techniques

1. Using laboratory equipments such as: Autoclave, Hot air owen, Incubator, Water bath, Centrifuge, Refrigerator, Microscopes, Colorimeter, pH meter, Haemoglobinometer, Kymograph Unit, Microtomes, Balances.

2. Preparation of various reagents and fixatives

3. Qualitative estimation of sugar and urine

5. Knowledge of Blood pressure apparatus, stethoscope and such other medical apparatus

6. Certified Laboratory Record to be submitted

MODEL QUESTION PAPERS
For Candidates admitted from (2007 – 2008)

(Non-semester – First Year)

B.Sc. Degree Examination

Core Course – Main

Branch VI – Zoology (PRIDE)

Paper I – INVERTEBRATA

Time : Three hours

Maximum : 100 marks

Passing Minimum : 40 marks

Draw Diagrams wherever necessary

Section A – 10 x 2 = 20 Marks

Answer All Questions

All Questions Carry Equal Marks

Each Answer should not exceed 50 words.

Explain the following

1. Alternation of generation

2. Parenchymula larga

3. Polymorphism

4. Comb plates
5. Miracidium larva
   மிராசி஡ியம் லார்வா

6. Wuchereria bancroft
   வுசூரேரா பாங்கோட்டு

7. Parapodium
   பாரபோடியம்

8. Sponging type of mouthparts
   எப்பால் மூட்டும் வாய்ப்புகள்

9. Epitaenia
   எப்பேனியா

10. Sea cucumber
    ஆரம் குசுக்கர்

Section B – (5 x 4 = 20 Marks)

Answer any Five questions

All Questions Carry equal marks

Each answer should not exceed 300 words

11. Briefly explain the structure and life history of Elphidium
    எல்பி஡ியம் ஆராய்ச்சி மற்றும் வாய்ப்புகள்

12. Give an account of the skeleton in the sponges
    எப்பால் வாய்ப்புகள் அடியம்

13. Describe the structure of scolex in Tapeworm
    தபேயின் அடியம்

14. Compare the digestive system of Leech and Nereis
    லீன் பெரேயின் ஏனையைத் தானியம்

15. Write an account of the cephalic appendages of Prawn.
    ப்ரோயன் முன்பாகத் தானியம்

16. Explain the respiratory system in pila
    பிளா வளர்மிகம்

17. Draw a neat diagram of T.S. through an arm of a starfish and name the parts
    (Description not required)
Section C (5 x 12 = 60 Marks)

Answer any Five Questions
All Questions Carry equal Marks
Each answer should not exceed 1200 words

18. Give an account of the various methods of reproduction in protozoa

19. Give an account of the canal system in the sponges

20. Mention the chief characters of the phylum Arthropoda and classify the phylum up to classes with their distinguishing characters and examples

21. Write an essay on the economic importance of insects

22. Write an essay on the economic importance of mollusca

23. Mention the chief characters the phylum Echinodermata and classify up to classes with their distinguishing characters and examples

24. Give an account of the morphology and affinities of Limulus
For candidates admitted from (2007-08)

Non-Semester – Second Year

B.Sc. Degree Examination

Core Course – Main

Branch VI – Zoology (PRIDE)

Paper II – Chordata

Time : Three hours

Maximum : 100 marks

Passing Minimum : 40 marks

Draw diagrams wherever necessary

Section A (10 x 2 = 20 marks)

Answer All Questions

All questions carry equal marks

Each answer should not exceed 50 words

Explain the following

1. Placoid Scale
   - பிளைகுடும்ப் நூற்று

2. Heterocercal fin
   - ஹெட்டரோகெர்ஸல் நூற்று

3. Gill Maker
   - சிளைவு செருக

4. Living fossil
   - செய்துள்ள மானிய

5. Apodes
   - அபொடேஸ்

6. Viviparity
   - விவிபாரியம்

7. Fishery by products
   - நீரில் விளைவு பொருட்கள்

8. Quill feather
   - குலுண்முகம்
9. Syrinx - பூனி பொலி
10. Dental formula - பல அடுக்குப்படுத்து

Section B (5 x 4 = 20 marks)
Answer any Five questions
All questions carry equal marks
Each answer should not exceed 300 words

11. Discuss the affinities of Balanoglossus

12. Give an account of air bladder in fishes

13. Discuss the adaptations of amphibian for living on land and water

14. Write an account of poisonous snakes of South India

15. Describe the origin of flight

16. Write an account of biology and distribution of prototheria

Describe aquatic mammals and their adaptations.

Section C (5 x 12 = 60 marks)
Answer any five questions.
All questions carry equal marks
Each answer should not exceed 1,200 words

17. Write an essay on the migration of birds

18. Classify reptilian upto the order, giving diagnostic features and examples
19. Write an account of the adaptive radiation in mammals

20. Discuss the evolutionary significance of respiratory organs of vertebrates

21. Write an account of parental care in Amphibia

22. Describe how the birds are adapted to Aerial mode of life

23. Compare the pectoral girdle of an amphibian, reptile and a bird
(For Candidates admitted from 2007 – 2008)
Non-Semester – Third Year
B.Sc. Degree Examination
Core Course – Main
Branch VI – Zoology – (PRIDE)
Paper III – Cell Biology and Genetics

Time : Three hours  Maximum : 100 marks

Section A – (10 x 2 = 20 marks)
Answer All Questions
All Questions carry equal marks
Each answer should not exceed 50 words

Explain the following

1. Homogenizer - நீர்க் அனுப்பவன்
2. Nuclear envelope - மிலக் தலை
3. Formaldehyde - பொம்பபகற்குறுத்தி
4. Cell cycle - நோய் குறுத்தி
5. Nitrous oxide - தொய்ப்பலன் மிக்கலத்தி
6. Test cross - வெளிய கெட்டுப்பட
7. Three point test cross - இரண்டு புறத்திய தொன்கலாக கெட்டுப்பட
8. Maternal inheritance - தாம்பரச் மெரு
9. Lysogeny - தொலைகளைதல்
10. Plasmid vector - பிலாசமிடி வகையில்

Section B (5 x 4 = 20 marks)
Answer any five questions
All questions carry equal marks
Each answer should not exceed 300 words

11. Write an account on vital staining
ஒருள் விளைவூட்டு வரையறை வருடவர் வருடவர்

12. What is the role of Golgi apparatus – in secretion?
ஊர்த்தியதில் வேலைத் தொடர்வலிச பார்வெட் பார்வெட்?

13. Enumerate the features of cancer cells
புற்று நீர்ப் கருவிகளின் பார்வெட்கள் மருகிய்கும்

14. Compare Mitosis and Meiosis
ஒந்நிலைகள், அடுக்கியாறு - குறுகிய குறுகிய

15. Write about interaction among complementary genes
ஒன்றிய வருடவரின் வேலைத் தொடர்வலிச குறுகிய வருடவரின்

16. Write the genetic significance of heterosis
கல்புற்று வருடவரின் மகிழ் மிருக்கும் வருடவரின்

17. Write an account on Down’s syndrome
ஒளிய ஒளிய இளிஷ்டின் பற்றிய வருடவரின்

Section C – (5 x 12 = 60 marks)
Answer any five questions
All questions carry equal marks
Each answer should not exceed 1200 words

18. Write an account on cell fractionation and isolation of cellular components
வேலை பரிமாந்து மதிப்பு வேலை உபாக்கியாக பற்றிய பற்றிய வருடவரில் வருடவரில்

19. Write an account on the origin, structure and functions of Ribosomes
காரியாரியார்களின் சூழ்கள், ஆனால், சீராம் பற்றிய வருடவரின்

20. Draw and describe giant chromosomes
புகழ்வு கரிச்சனக்களின் பற்றிய வருடவரின்

21. Describe multiple allelism with suitable examples
22. Write an account on sex-linked inheritance

23. Describe the genetics of conjugation in bacteria

24. Describe Structure and function of Mitochondria

For Candidates admitted from 2007 – 2008

Non-Semester – Third year

B.Sc. Degree Examination

Core Course – Main

Branch VI – Zoology (PRIDE)

Paper IV: Developmental Biology and Immunology

Time: Three hours

Maximum: 100 marks

Minimum passing: 40 marks

Section A – 10 x 2 = 20 Marks

Answer All Questions

All Questions carry equal marks

Each answer should not exceed 50 words

Explain the following

1. Germ plasm theory
2. Middle piece
3. Grey crescent
4. Radial cleavage
5. Involution
6. Neuropore
7. Primary organ rudiments
8. Head fold
9. Induced ovulation
10. Thelytoky - சுருளியாகத்

Section B – (5x4 = 20 marks)
Answer any five questions
All questions carry equal marks
Each answer should not exceed 300 words

11. Compare mosaic and regulative theories

12. Describe the development of aerosome in sperm

13. Write about the physiological activation of ovum

14. Describe polarity in relation to egg cytoplasm

15. Describe mesoderm formation in chick

16. Write an account on notogenesis

17. Describe how the primary brain divisions are laid

Section C (5 x 12 = 60 Marks)
Answer any five questions
All questions carry equal marks
Each answer should not exceed 1200 words

18. Write an account on Parthenogenesis

19. Write an account on egg membranes

20. Discuss the influence of yolk on cleavage
21. Describe gastrulating in chick

22. Describe development of Eye in chick

23. Write an account on placentation in mammals

24. Write an account on Antigen – Antibody Reaction

(For Candidates admitted from 2007 – 2008)

Non-Semester – Third Year
B.Sc. Degree Examination
Core Course – Main
Branch VI - Zoology (PRIDE)
Paper V – Biochemistry & Animal Physiology

Time : Three hours  Maximum : 100 marks

Section A: (10 x 2 = 20)
Answer All Questions
All Questions Carry Equal Marks
Each answer should not exceed 50 words

1. Antisterility vitamin - ஆண்டிருப்பு நிலைக் காலவேறு
2. Transamination - (பற்றிகற்றிகிட்டுதல்)
3. Active transport - (கழிப்பு வில்லு கல்லுற்று)
4. ADH - (ஆடு சோலை)
5. Schwann cell - (கலன் குளி)
6. Action potential - (அல்கிடல் நிர்ணயிப்பு)
7. Reflex action - (அடிக்கடி நிர்ணயிப்பு)
8. Adrenal medulla - (அந்தின் நிலைகள்)
9. Color vision - (உபியோகிக் பொருள்)
10. Fire fly - (மருத்துவமிய போச்சி)
Section B (5 x 4 = 20)

11. Explain in detail krelis ornithene cycle
   (கிரீஸ் கொரியின் கொரியும் விளையாட்டு)

12. Give an account of Iso enzymes
   (இசோ இந்துடன் புரிந்த விளையாட்டு)

13. Explain physiology of alesoepion
   (அலெசேப்பியன் விளையாட்டு)

14. Describe the structure of different respiratory pigments
    (இந்திய விளையாட்டுஆன் ஆலெதைப்பான் விளையாட்டு)

15. Describe ECG
    ECG விளையாட்டு

16. Describe the structure of mammalian kidney
    (லயான குர்க்கு விளையாட்டுஆன் விளையாட்டு)

17. Consider human internal ear as an equilibrium receptor.
    (அன்று இந்துடன் விளையாட்டுஆன் அசேதைப்பான் கார்பாணத் இன்னொன்று)

Section C (5 x 12 = 60)

Answer Five Questions

18. Give an account of the structure of proteins
    (புதிய விளையாட்டுஆன் விளையாட்டு)

19. Explain the mechanism of enzyme action
    (அவர்கின் விளையாட்டுஆன் விளையாட்டுஆன் விளையாட்டு)

20. Describe the digestion of carbohydrates in the different parts of alimentary canal
    (அரிய விளையாட்டுஆன் விளையாட்டுஆன் விளையாட்டுஆன் விளையாட்டுஆன் விளையாட்டு)

21. Write an account on the composition & functions of blood
    (விளையாட்டுஆன் விளையாட்டுஆன் விளையாட்டுஆன் விளையாட்டுஆன் விளையாட்டு)

22. Discuss the different theories related to muscle contraction
    இந்தே விளையாட்டுஆன் விளையாட்டுஆன் விளையாட்டுஆன் விளையாட்டு

23. Describe the properties of nerve impulse. Explain how it is transmitted through synapse.

For candidates admitted from 2007 – 2008
(Non-semester – Third year)
B.Sc., Degree Examination
Core Course – Main
Branch VI – Zoology (PRIDE)
Paper VI – Environmental Biology and Evolution

Time : Three hours Maximum : 100 marks
Section A – (10 x 2 = 20 marks)
Answer All Questions
All questions carry equal marks
Each answer should not exceed 50 words

Write notes on the following:
1. Biogeochemical cycle
2. Parasitism
3. Division of labour
4. Mortality
5. Lithsphere
6. Pelagic

7. Chipko movement

8. Fossils

9. Parrad Evolution

10. Batesian mimicry

Section B (5 x 4 = 20 marks)

11. Consider water as a limiting factor

12. Explain pond as an ecosystem

13. Give an account on wildlife sanctuaries in India

14. Explain the theories of lamarek

15. Discuss about mimicry and evolution

16. Give an account on dating of fossils

17. Write about Bird migration

Section C (5 x 12 = 60 marks)

Answer five questions

All questions carry equal marks

Each answer should not exceed 1,200 words

18. Explain the biogeochemical cycles with special reference to nitrogen
19. Write an account on the salient features of community ecology

20. Discuss the characteristics and divisions of the marine biome.

21. Discuss in detail about water pollution

22. Give an account on origin of life

23. Write in detail about geological time scale

24. Give an account on evolution of man add a note on cultural evolution
(For Candidates admitted from 2007-2008)
(Non-Semester – Third year)
B.Sc. Degree Examination
Core Course – Main
Branch VI – Zoology (PRIDE)
Paper VII - Medical Laboratory Techniques

Time: Three hours
Maximum: 100 marks
Passing minimum: 40 marks

Draw diagrams wherever necessary
Section A – (10 x 2 = 20 marks)
Answer All Questions
All questions carry equal marks
Each answer should not exceed 50 words

Explain the following

1. Principle of centrifuge
   கூர் மின்னை திரும்பிக்குறி வைக்கவும்

2. Uses of autoclave
   குருத்தத்தில் பயன்கள்

3. Molar solution
   சிறுகொள்கள் தூரத்தை
4. Reticulocytes

5. Serum and plasma

6. Leishman stain

7. Haematocrit

8. Intermediate host

9. Ancylostomiasis

10. Rhabditiform larva

Section B (5 x 4 = 20 marks)

Answer any five questions
All questions carry equal marks
Each answer should not exceed 300 words

11. Describe the principle of operation and uses of haemocytometer

12. Water are the principal components of a microscope? Explain

13. Write short notes on the operation of BP apparatus

14. Explain the one stage prothrombin time test to measure the extrinsic pathway of coagulation

Write an account on the microscopic examination of stool
15. Write an account on bone marrow examination?

16. What discussions are caused by Wuchereria and Trichuris? How will you diagnose them?

Section C (5x12 = 60 marks)
Answer five questions
All questions carry equal marks
Each answer should not exceed 1,200 words

17. Explain colorimeter and pH meter and add a note on their functions

18. Explain the methods of sterilizing and cleaning glass ware's

19. Explain Haemocytometry

20. Write an account on the organized elements of urine

21. Explain how adult worms in faeces can be identified?

22. Explain sperm count and sperm motility

23. Write an account on medical lab administration, management and personal care.
(For the candidates admitted from 2007-2008)

B.Sc. Degree Examination
Non-Semester – III Year
Branch VI – Zoology

Paper VIII : Application oriented subjection (AOS)
Sericulture

Time 3 hrs  Maximum : 100 marks

Section A – (10 x 2 = 20 marks)

Answer All Questions
All questions carry equal marks

1. Lepidoptera
2. Tasar silkworm moth
3. Whole shoot harvest
4. Patch budding
5. Chauki rearing
6. Muscardine
7. Acid treatment
   அசியோலம் பயன்படுத்துதல்
8. Re-reeling
   ரீ-ரீலேன்று
9. Stiffling
   சி஫்ப்லங்கை
10. Cold storage
    காட்சி பொருைத்தல்

Section – B (5 x 4 = 20 marks)
Answer any five questions

11. What are the new micropropagation methods followed in moriculture
    தொன்மை வளர்ப்புக்கு பயன்படுபவைகள் பொருை வளர்ப்பு வகைகள் பற்றிய
12. Write a brief account on the life cycle of a silkworm
    பல்குடு ஜலையில் பெரும்பாக அவ்வாறே பெற்று குறிப்பிட்டால் கூறு
13. How do you disinfect the rearing house of silkworm
    பல்குடு வளர்ப்புக் கோடர வளர்ப்பு குறிப்பிட்டால்
14. Write a short account on polyhedrosis diseases
    பல்கு வளர்ப்பு தொன்மை வளர்ப்பு வகைகள் பற்றிய
15. How do you preserve and store the seed cocoons
    பல்கு வளர்ப்பு கொடர வளர்ப்பு வகைகள் பற்றிய
16. What are methods adopted for artificial hatching
    பல்கு வளர்ப்பு கொடர வளர்ப்பு வகைகள் பற்றிய
17. Explain the process of stifling in cocoon reeling
    பல்கு குடு பாதுகாப்புகள் பற்றிய

Section C (5 x 12 = 60 marks)
Answer any FIVE Questions
18. Write down the vegetative propagation of mulberry
mulberry மரத் பரவல் பழுது வளர்க்க

19. Explain the different species of silkworm available in India
கால்சாயுதம் கால்சாயுதம் மலார்பெருந்தியுடைய விளக்காக்க பழுது வளர்க்க

20. Explain the techniques of silkworm rearing
மலார்பெருந்தியுடைய விளக்காக்க எண்ணறு விளக்காக்க வளர்க்க

21. Write in detail about bacterial and fungal diseases of silkworms and its control measures.
மலார்பெருந்தியுடைய விளக்காக்கங்கள் மலார்பெருந்தியுடைய விளக்காக்க வளர்க்க

22. Explain the different methods of reeling of silk
மலார்பெருந்தியுடைய விளக்காக்க எண்ணறு விளக்காக்க வளர்க்க.

23. What are the selection criteria for mulberry garden? Add a note on soil samples and soil testings.
மலார்பெருந்தியுடைய எண்ணறு தேவை தேவை செய்யல். மலார்பெருந்தி எண்ணறு எண்ணறு எண்ணறு எண்ணறு எண்ணறு

24. Give an account on the byproducts of silk reeling
மலார்பெருந்தியுடைய எண்ணறு எண்ணறு எண்ணறு எண்ணறு எண்ணறு எண்ணறு எண்ணறு