

20664

Sl.No. 0238



Total No. of Pages : 2

VI Semester B.Sc. Examination, May/June - 2017
ZOOLOGY (Semester Scheme)
Environmental Biology and Applied Zoology (Paper -VIII)

Time : 3 Hours

Max. Marks : 80

- Instructions:* 1) Common to all.
2) Answer all questions.
3) Draw diagrams wherever necessary.

I – Answer any six of the following: [6×2=12]

- 1) Mention the types of food chains.
- 2) What are reflexes? Give an example.
- 3) State the first Law of thermodynamics.
- 4) Differentiate between Bar diagram and Histogram.
- 5) Write the Scientific terms for rearing of honeybee and cattle.
- 6) What are endangered species? Give an example with respect to India.
- 7) Distinguish between Autecology and synecology.
- 8) Mention any two differences between male and female silk moth.

II Write short notes on any six of the following: [6×3=18]

- 9) Gause's principle
- 10) Population density
- 11) Predation
- 12) Pyramid of Biomass
- 13) Importance of wild life conservation
- 14) Circannual rhythm
- 15) Species of earthworm used in vermiculture

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- 16) Transgenic plants
- 17) Pollution and its major types

III Write explanatory notes on any four of the following:

[4×5=20]

- 18) Composition and importance of vermicompost.
- 19) North eastern Himalayan region.
- 20) Soil profile.
- 21) Commensalism.
- 22) Shelford's Law of tolerance.
- 23) Auditory communication in Gryllids.
- 24) Calculate the mean for the following data.

Weight of fishes in gms	16	7	8	19	10	11	12
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IV Answer any three of the following:

[3×10=30]

- 25) Give an account on learned behaviour in animals.
- 26) Write an essay on grassland biome.
- 27) Discuss-
 - a) Major steps in silkworm rearing.
 - b) Bioinformatics and its importance.
- 28) Give an account on oriental realm and add a note on Wallace's line.
- 29) What is Ecological succession? Explain its types with examples.



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Total No. of Pages : 2

VI Semester B.Sc. Examination, May/June - 2017

ZOOLOGY (Semester Scheme)

Genetics and Evolution (Paper -VII)

Time : 3 Hours

Max. Marks : 90

- Instruction: 1) Common to all.*
2) *Answer all questions.*
3) *Draw diagrams wherever necessary.*

I Answer any six of the following: [6×2=12]

- 1) What are pseudoalleles? Give an example.
- 2) Distinguish between phenotype and genotype.
- 3) Write the chromosomal complements of Turner's and Klinefelter's syndrome.
- 4) What are holandric genes? Give an example.
- 5) Mention any four adaptive features of draw.
- 6) What are analogous organs? Give an example.
- 7) What is eugenics?
- 8) With an example define secondary adaptation.
- 9) What is maternal inheritance?

II Write short notes on any six of the following: [6×3=18]

- 10) Test cross with illustration
- 11) Incomplete dominance
- 12) Protective colouration
- 13) Pleiotropism
- 14) Position effect

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- 15) Types of fossils
- 16) Incomplete linkage
- 17) Coenozoic era
- 18) Reproductive isolation

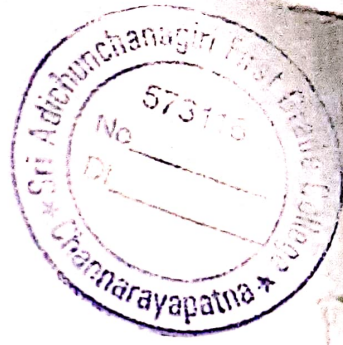
III Write explanatory notes on any four of the following: [4×5=20]

- 19) Phrynosoma.
- 20) Eugenics.
- 21) Genic balance theory.
- 22) Sympatric speciation.
- 23) Supplementary factors.
- 24) Importance of human genomics.
- 25) Embryological evidences.

IV Answer any three of the following: [3×10=30]

- 26) Explain norm of reaction with special reference to *Potentilla glandulosa*.
- 27) Define and explain the inheritance of complementary factors with an example.
- 28) Haemophilia follows criss-cross mode of inheritance, justify.
- 29) Describe the disorders due to inborn errors of metabolism in man.
- 30) Explain Darwinian principles.

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[1 × 13 = 13]

III. Answer any one of the following :

- 15) a) Discuss principles of feed formation.
- b) Aquarium filters.
- 16) Explain general features and sexual dimorphism in Molly and Butterfly fish.



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II. Write elaborate notes on any five of the following :

- 16) General characters of phylum porifera.
- 17) Social organization in insects (Termites)
- 18) Asteroidea and Echinoidea.
- 19) Nervous system in Earthworm.
- 20) Externals of starfish.
- 21) Sycon type of canal system
- 22) Parasitic adaptations in leech.
- 23) Shells in Mollusca.

III. Answer any two of the following :

[2 × 13 = 26]

- 24) Describe the life cycle, pathogenicity and preventive measures of *Taenia solium*.
- 25) Give the salient features of peripatus and discuss on systematic position of onychophora.
- 26) What is polymorphism? Mention the types and explain polymorphism with reference to *Halitemma*.
- 27) Enumerate the general characters of phylum protozoa and classify upto classes with examples.

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Total No. of Pages : 2



V Semester B.Sc. Examination, Nov./Dec. - 2017

(Semester Scheme)

ZOOLOGY (Paper - V)

Cell and Molecular Biology

Time : 3 Hours

Max. Marks : 80

- Instructions : 1) Answer all questions.
2) Draw diagrams wherever necessary.

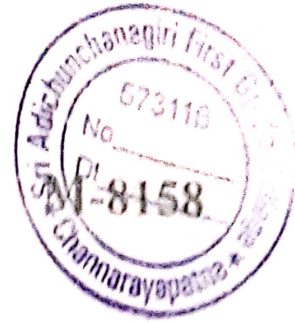
D) Answer any six of the following :

[6 x 2 = 12]

- Mention any two enzymes of lysosome. Write their function.
- Name the subunits in 70s and 80s ribosomes.
- What are the components in nucleolus?
- Mention any two functions of Plasmamembrane.
- What is natural passive immunity?
- Write the role of centrioles in cell division.
- Define synapsis. In which stage it occurs?
- Name four morphological forms of Chromosomes.
- What are split genes?

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- 15) Lampbrush chromosomes.
- 16) Rheumatoid arthritis.
- 17) Distribution and types of Ribosomes.
- 18) Mitotic metaphase.

III. Write explanatory notes on any four of the following :

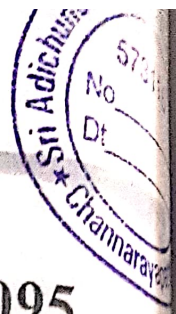
[4 × 5 = 20]

- 19) Synaptonemal complex.
- 20) RNA polymerase.
- 21) Ultrastructure of Nucleus.
- 22) Polymorphism in lysosomes.
- 23) Euchromatin and heterochromatin
- 24) Structure of immunoglobulin.
- 25) Dissociation and reconstitution of Ribosomes.

[3 × 10 = 30]

IV. Answer any three of the following :

- 26) Explain the process of transcription in Prokaryotes.
- 27) Discuss the role of β -lymphocytes in immune response.
- 28) Enumerate the characteristics cancer cell. Add a note on types of cancers.
- 29) With reference to inversions and translocations, explain the Chromosomal aberrations.
- 30) Explain in detail the ultrastructure of plasma membrane.



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Total No. of Pages : 3

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V Semester B.Sc. Examination, Nov./Dec. - 2017

(Semester Scheme)
ZOOLOGY (Paper - VI)

Developmental Biology and Endocrinology

Max. Marks : 80

Time : 3 Hours

Instructions : 1) Answer all questions.

2) Draw diagrams wherever necessary.

D) Answer any six of the following :

[6 × 2 = 12]

- a) Define haploid parthenogenesis. Give example.
- b) Expand IUD. Mention any one example.
- c) Name any two physical agents that are used to induce parthenogenesis.
- d) Why insulin is called hypoglycemic factor?
- e) Define competence.
- f) Give any two functions of allantois.
- g) What is polyspermy? Mention its types.
- h) Differentiate tubectomy from Vasectomy.
- i) What are somites?

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Total No. of Pages: 2

IV Semester B.Sc. Examination, May/June, 2017

ZOOLOGY (Semester Scheme)

Bio-Chemistry and Animal Physiology (Paper -IV)

Time : 3 Hours

Max. Marks : 80

- Instructions: 1) Answer all questions.
2) Common to all.
3) Draw diagrams wherever necessary.

I Answer any five of the following

[5×1=5]

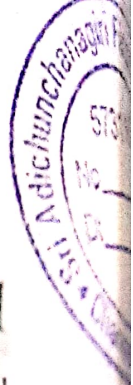
- 1) Mention any two functions of r-RNA
- 2) Differentiate euryhaline and stenohaline.
- 3) What are ectotherms? Give an example.
- 4) What is blood pressure? Mention normal BP in man.
- 5) What is the role of S.A. node?
- 6) Mention two types of neurons.
- 7) What are amphoteric acids?

II Write short notes on any five of the following:

[5×3=15]

- 8) Osmoregulation in fresh water bony fish
- 9) Bohr effect
- 10) Respiratory quotient
- 11) Hibernation
- 12) Uricoelism
- 13) Neuro-muscular junction
- 14) Phospholipids

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[4×5=20]

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III Write the explanatory notes on any four of the following:

- 15) Polysaccharides.
- 16) Lipid profile of blood.
- 17) Mechanism of enzyme action.
- 18) Osmoregulation in camel.
- 19) Composition of blood.
- 20) Ornithine cycle.
- 21) Adaptation to cold environment in homeotherms.

IV Answer any two of the following:

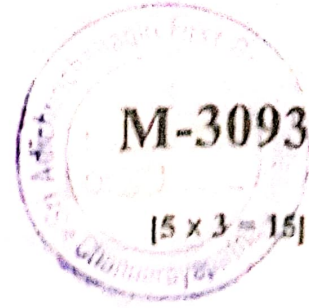
[2×10=20]

- 22) Explain the quaternary structure of proteins with reference to haemoglobin.
- 23) Describe Watson-Crick model of DNA.
- 24) Explain oxygen transport in blood.
- 25) Describe the sliding filament theory of muscle contraction.



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2014



II) Write short notes on any five of the following:

- a) Types of teeth.
- b) Salient features of Dipnoi.
- c) Cetacea.
- d) Anurans.
- e) Mammalian aortic arches.
- f) Snake venom.
- g) Metatheria.

III) Write explanatory notes on any four of the following:

[4 x 5 = 20]

- a) Ctenoid and Cycloid scales.
- b) Causes of bird migration.
- c) Pronephros and Mesonephros.
- d) Differentiate Artiodactyla and Perrisodactyla.
- e) Chondrichthyes.
- f) Egg laying mammals.
- g) Lateral line sense organs.

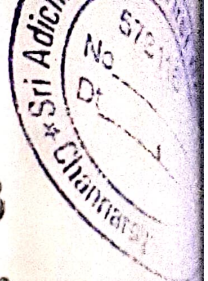
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(2 x 10 = 20)

IV) Answer any ~~two~~ of the following:

- a) Explain the anatomical adaptive features in aves for flight.
- b) Enumerate the general characters of reptiles. Classify the living reptiles upto orders.
- c) Give a comparative account of amphibian and reptilian heart.
- d) Explain the male urinogenital system of rabbit.



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Total No. of Pages : 3

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Sl.No. 0263

III Semester B.Sc. Examination, Nov./Dec. - 2017
(Semester Scheme)
ZOOLOGY (Paper - III)
Animal Diversity - III

Max. Marks : 60

Time : 3 Hours

- Instructions : 1) Answer all questions.
2) Draw diagrams wherever necessary.

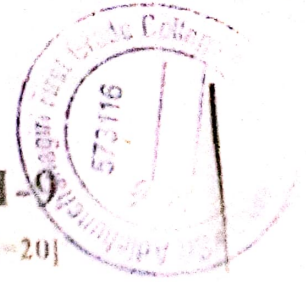
[5 x 1 = 5]

D) Answer any five of the following :

- a) What are Arcades and Fossae?
- b) Write the dental formula of man.
- c) Differentiate Arteries from Veins.
- d) Mention any two key features to identify poisonous snakes.
- e) Write any two distinctive features of Apoda.
- f) List any two advantages of bird migration.
- g) Where do you find tricuspid valve in mammalian heart?

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[4×5=20]

Q.III. Write explanatory notes on any four of the following:

- 15) Arthropodan characters of peripatus.
- 16) Externals of Amphioxus.
- 17) Water vascular system in Asterias.
- 18) Affinities of hemichordata with annelida.
- 19) Pelecypoda and gastropoda.
- 20) Beneficial insects.
- 21) Regenerative ability in hydra and asterias.

Q.IV. Answer any two of the following: [2×10=20]

- 22) Enumerate the general characters of chordata and classify upto classes with examples.
- 23) Give a detailed account on respiration in fresh water mussel.
- 24) Explain in detail the trophi of insects with respect to housefly and honeybee.
- 25) Give a comparative account of the nervous system of liverfluke and earthworm.



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Sl.No. 0270

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Total No. of Pages : 2
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II Semester B.Sc. Examination, May/June - 2017
(Semester Scheme)
ZOOLOGY (Paper -II)
Animal Diversity -II
6
Max. Marks : 60

Time : 3 Hours

- Instruction: 1) Common to all.
2) Answer all questions.
3) Draw diagrams wherever necessary.

[5×1=5]

Q.I. Answer any five of the following:

- 1) What is tunic?
- 2) Give an example for class crinoidea.
- 3) Name the larval form of petromyzon.
- 4) Define radial symmetry.
- 5) Name any two harmful insects.
- 6) What is commissure?
- 7) Name the respiratory organs of scorpion.

Q.II. Write short notes on any five of the following:

[5×3=15]

- 8) Class Myriapoda
- 9) Pedicellaria
- 10) Haemocoel
- 11) Proboscis complex
- 12) Body plan in arthropoda
- 13) Foot in cephalopoda
- 14) Dentalium shell

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Sl.No. 0216



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Total No. of Pages : 2

VI Semester B.Sc. Examination, April/May - 2018

(Semester Scheme)

ZOOLOGY (Paper - VIII)

Environmental Biology and Applied Zoology

Time : 3 Hours

Max. Marks : 80

Instructions:

- 1) *Common to all.*
- 2) *Answer all questions.*
- 3) *Draw diagrams wherever necessary.*

I. Answer any six of the following

[6 × 2 = 12]

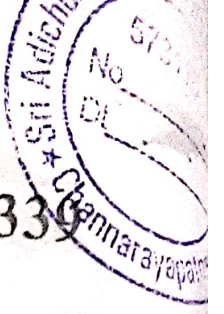
1. What is food web?
2. Write four regions of oriental realm.
3. What are transgenic plants? Give an example.
4. Distinguish between plankton and nekton.
5. Define climax community
6. What is bar diagram?
7. Name the laws of limiting factors.
8. What is biological clock? Mention the types of rhythms.
9. What is red data book?

II. Write short notes on any six of the following.

[6 × 3 = 18]

10. Bio informatics.
11. NGO's in wild life conservation.
12. Role of pineal gland in rhythm.
13. Importance of tissue culture.

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14. Topographic factors.
15. Aggregation.
16. Decomposers.
17. In-situ conservation.
18. Non-mulberry silkworms

III. Write explanatory notes on any four of the following.

[4 × 5 = 20]

19. Pheromones in insects.
20. Age distribution.
21. Wild life (Protection) act 1972.
22. Western ghats.
23. Tabulation of data.
24. Vermicompost and its importance.
25. Sources and effects of air pollution.

IV. Answer any three of the following

[3 × 10 = 30]

26. Write an account on forest biome.
27. Discuss different types of interspecific positive interactions with examples.
28. Give a detailed account of innate behaviour.
29. What is biogeochemical cycle? Mention the types and explain the phosphorus cycle.
30. Give a detailed account of - silkworm rearing upto cocoon stage.



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Sl.No. 0219



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Total No. of Pages : 2

VI Semester B.Sc. Examination, April/May - 2018
(Semester Scheme)

ZOOLOGY

Genetics and Evolution (Paper - VII)

Time : 3 Hours

Max. Marks : 80

- Instructions: 1) Common to all
2) Answer all questions.
3) Draw diagrams wherever necessary.

I. Answer any six of the following

[6 × 2 = 12]

- 1) Define nature and nurture.
- 2) Mention any two significances of crossing over.
- 3) What are chemical mutagens? Give an example.
- 4) Differentiate between forward and reverse mutations.
- 5) What are Y linked genes? Give an example.
- 6) Define polygenic inheritance. Give an example.
- 7) What is genetic equilibrium?
- 8) Define Euthenics.
- 9) What is mimicry?

II. Write short notes on any six of the following.

[6 × 3 = 18]

- 10) Alkaptonuria.
- 11) Lozenze eye in Drosophila.
- 12) Rh factor.
- 13) Hormonal effects on sex determination in cattle.
- 14) Archaeopteryx

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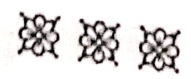
- 15) Himalayan Albino Rabbit.
- 16) Founder's principle.
- 17) Practical applications of CLB technique.
- 18) Speciation.

III. Write explanatory notes on any four of the following. [4 × 5 = 20]

- 19) Desent adaptation in camel.
- 20) Inheritance of ABO blood group man.
- 21) Penentrance and expressivity with examples.
- 22) Klinefelter's syndrome.
- 23) Bottleneck phenomenon.
- 24) Homology and analogy.
- 25) Colouration.

IV. Answer any three of the following. [3 × 10 = 30]

- 26) Explain supplementary factors with reference to comb pattern in fowls.
- 27) Describe three point test cross in Drosophila.
- 28) Give an account on human genomics and its usefulness to mankind.
- 29) Explain.
 - a) Adaptive features in shark
 - b) Modern synthetic theory of evolution.
- 30) What is dihybrid cross? Explain it with a suitable example.



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- 15) Deciduate placenta.
- 16) Glucocorticoids.
- 17) Seminiferous tubules.
- 18) ADH

III. Write explanatory notes on any four of the following : [4 × 5 = 20]

- 19) Hormones of menstrual cycle.
- 20) Artificial parthenogenesis.
- 21) Functions of foetal membranes.
- 22) Parathyroid hormones.
- 23) Histology of Pancreas.
- 24) Acrosomal reaction.
- 25) Fate map of Frog.

IV. Answer any three of the following : [3 × 10 = 30]

- 26) Give an account on contraceptive devices.
- 27) What is organizer phenomenon? Explain Spemann and Mangold experiment.
- 28) Explain the functions of Pituitary hormones.
- 29) Explain the process of Oogenesis.
- 30) Describe :
 - a) Primitive streak
 - b) Structure of Hen's egg.



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Sl.No. 0226



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Total No. of Pages : 2

V Semester B.Sc. Examination, Oct./Nov. - 2018
(Semester Scheme)
ZOOLOGY (Paper - VI)
Developmental Biology and Endocrinology

Time : 3 Hours

Max. Marks : 80

- Instructions :
- 1) Answer all questions.
 - 2) Draw diagrams wherever necessary.

I. Answer any six of the following :

[6 × 2 = 12]

- 1) What is sterilization? Mention its types.
- 2) Name female gonadal hormones.
- 3) Mention the functions of amnion and chorion.
- 4) Name any two planes of cleavage.
- 5) What is parthenogenesis? Mention its types.
- 6) Give any two significance of fertilization.
- 7) What is a megalecithal egg? Give example.
- 8) Mention the hormones of pineal gland.
- 9) What is meroblastic cleavage? Give an example.

II. Write short notes on any six of the following :

[6 × 3 = 18]

- 10) Hormones of thyroid gland.
- 11) In vitro fertilization.
- 12) Development of primitive streak.
- 13) Cloning.
- 14) Determination.
- 15) Significance of parthenogenesis.
- 16) Gametes.
- 17) Blastocyst
- 18) Blastula of Frog.

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III. Write explanatory notes on any four of the following :

[4 × 5 = 20]

- 19) Functions of plasma membrane.
- 20) Chemical composition of Ribosomes.
- 21) Nucleus.
- 22) Carcinogens.
- 23) Causative factors of AIDS.
- 24) Post transcriptional modifications of mRNA.
- 25) Ultra structure of animal cell.

IV. Answer any three of the following :

[3 × 10 = 30]

- 26) Give a detailed account of prophase - I of meiosis and add a note on its significance.
- 27) Explain the gene regulation mechanism with reference to Lac operon.
- 28) Discuss in detail the role of T-lymphocytes in Immune response.
- 29) Describe the ultra structure of mitochondria and discuss about its autonomous status.
- 30) Explain the morphology of chromosome and add a note on the chemical composition of chromosomes.

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Sl.No. 0241



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Total No. of Pages : 2

V Semester B.Sc. Examination, Oct./ Nov. - 2018
(Semester Scheme)
ZOOLOGY (Paper - V)
Cell and Molecular Biology

Max. Marks : 80

Time : 3 Hours

Instructions : 1) Answer all questions.
2) Draw diagrams wherever necessary.

[6 × 2 = 12]

I. Answer any six of the following :

- 1) What are the contents of nucleoplasm?
- 2) Mention any two functions of Golgi complex.
- 3) What do you mean by natural immunity?
- 4) Define genome.
- 5) What are neoplastic cells?
- 6) Give any two properties of genetic code.
- 7) What are auto immune diseases? Give an example.
- 8) Differentiate benign tumour from malignant tumour.
- 9) Define muton and Recon.

II. Write short notes on any six of the following :

[6 × 3 = 18]

- 10) Polymorphism in lysosomes.
- 11) Types of Ribosomes.
- 12) Deletion.
- 13) Significance of mitosis.
- 14) Types of endoplasmic reticulum.
- 15) Complement fixation.
- 16) Split genes.
- 17) Significance of Karyotype.
- 18) Origin of Golgi complex.

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[6 × 3 = 18]

II) Write short notes on any six of the following:

- a) Karyotype.
- b) Golgi body.
- c) Characteristics of genetic code.
- d) Sedormid purpura.
- e) Distribution of ribosomes.
- f) Leptotene.
- g) Introns and Exons.
- h) Functions of mitochondria.
- i) Agglutination.

III) Write explanatory notes on any four of the following:

[4 × 5 = 20]

- a) Lac operon.
- b) Primary and secondary response.
- c) Chromosomal aberrations.
- d) Functions of plasma membrane.
- e) Mechanism of crossing over.
- f) Ultrastructure of mitochondria.
- g) Chemical composition of Ribosomes.

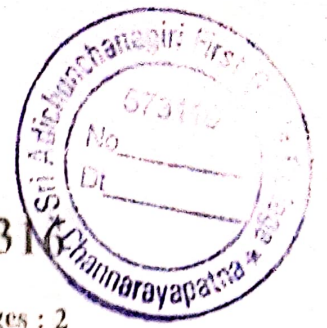
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Sl.No. 0268



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Total No. of Pages : 2



IV Semester B.Sc. Examination, April/May-2018
(Semester Scheme)

ZOOLOGY (Paper - IV)

Biochemistry and Animal Physiology

Time : 3 Hours

Max. Marks : 60

- Instructions: 1) Answer all questions.
2) Common to all
3) Draw diagrams wherever necessary.

I. Answer any five of the following

[5 × 1 = 5]

- 1) Mention the polysaccharide which acts as anticoagulant.
- 2) Define glycolipids.
- 3) Differentiate nucleoside from nucleotide.
- 4) What is cellular respiration?
- 5) Name the types of Agranulocytes.
- 6) What is synapse?
- 7) Define ureotelism with an example.

II. Write short notes on any five of the following.

[5 × 3 = 15]

- 8) Primary structure of proteins.
- 9) Disaccharides.
- 10) Oxido-reductases.
- 11) MRNA.
- 12) Law of Q_{10}
- 13) Chloride shift.
- 14) Role of ADH in reabsorption.

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[4 × 5 = 20]

III. Write explanatory notes on any four of the following.

- 15) Fatty acids.
- 16) Clover leaf model of t RNA.
- 17) Induced fit theory.
- 18) Osmoregulation shark.
- 19) Respiratory pigments.
- 20) Oxygen dissociation curve.
- 21) Axonic transmission of nerve impulse.

IV. Answer any two of the following.

[2 × 10 = 20]

- 22) Classify amino acids. Add a note on biological importance of proteins.
- 23) Give a detailed account on thermogenesis and its regulation.
- 24) Describe the regulation of heart beat in man.
- 25) Explain
 - a) Ultrastructure of multipolar neuron
 - b) Ultrastructure of striated muscle

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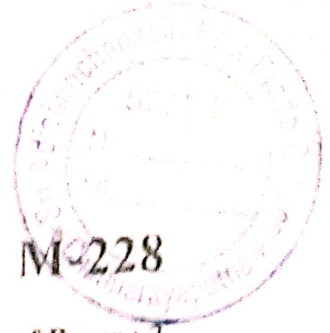
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Total No. of Pages : 2

III Semester B.Sc. Examination, Oct./ Nov. - 2018
(Semester Scheme)
ZOOLOGY (Paper - III)
Animal Diversity - III

Time : 3 Hours

Max. Marks : 60

Instructions : 1) Answer all questions.
2) Draw diagrams wherever necessary.

I. Answer any five of the following :

[5 × 1 = 5]

- 1) Assign Ichthyophis to the respective Amphibian order.
- 2) What is the function of blubber?
- 3) Name the type of skull present in chelonia.
- 4) Mention two important subclasses of the class Aves.
- 5) Name any two egg laying Mammals.
- 6) What is diphyodont dentition?
- 7) Write the dental formula of Rabbit.

II. Write short notes on any five of the following :

[5 × 3 = 15]

- 8) Crocodilia.
- 9) Characters of Mammalia.
- 10) Anura.
- 11) Proboscidea.
- 12) Poisonous snakes of India.
- 13) Cycloid scale.
- 14) Metatheria.

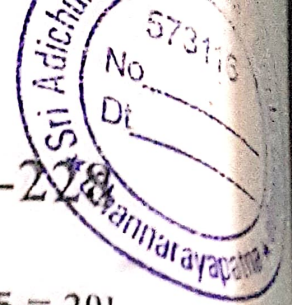
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M-2018

[4 × 5 = 20]



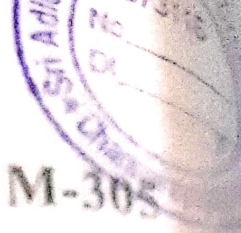
III. Write explanatory notes on any four of the following :

- 15) Heart of Fish and Mammalia.
- 16) Chiroptera.
- 17) Externals of Rabbit.
- 18) Arcades and Fossae.
- 19) Flight adaptations in Birds.
- 20) Digestive system of Frog.
- 21) Aortic arches in Amphibia and Reptilia.

IV. Answer any two of the following :

[2 × 10 = 20]

- 22) Give a comparative account of evolution of Kidneys in vertebrates.
- 23) Write a detailed account on Bird migration.
- 24) Explain the female urinogenital system of Rabbit.
- 25) Enumerate the general characters of Pisces and differences between chondrichthyes and osteichthyes with examples.



M-305

Total No. of Pages : 1

20142

Sl.No. 0416

II Semester B.Sc. Examination, April/May- 2018
(Semester : Scheme)

ZOOLOGY
Animal Diversity - II (Paper - II)

Max. Marks : 60

Time : 3 Hours

- Instructions:
- 1) Common to all
 - 2) Answer all questions.
 - 3) Draw diagrams wherever necessary.

[5 × 1 = 5]

I. Answer any five of the following

- 1) What are myotomes?
- 2) Where do you find ambulacral groove?
- 3) Mention the function of ctenidia?
- 4) Give an example for urochordata and cephalochordata.
- 5) Which type of trophi is present in house fly?
- 6) What are nerve connectives?
- 7) What is moulting?

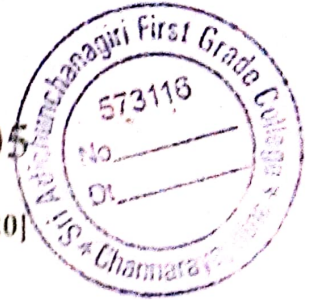
II. Write short notes on any five of the following.

[5 × 3 = 15]

- 8) Foot in pelecypoda.
- 9) Body plans in invertebrates.
- 10) Diagnostic characters of chordata.
- 11) Cockroach at pest.
- 12) Buccal funnel of petromyzon.
- 13) Echinopluteus larva.
- 14) Symmetry in invertebrates.

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[4 × 5 = 20]

III. Write explanatory notes on any four of the following.

- 15) Salient features of peripatus.
- 16) Echinoidea.
- 17) Externals of balanoglossus.
- 18) Class - cephalopoda.
- 19) Nervous system in Asterias.
- 20) Social organization in termites.
- 21) Affinities of Hemichordata with Echinodermata.

[2 × 10 = 20]

IV. Answer any two of the following.

- 22) Explain the circulatory system of Amphioxus.
- 23) Give a detailed account on molluscan shells.
- 24) Enlist the general characters of phylum Arthropoda and classify upto classes with suitable examples.
- 25) Explain the regenerative abilities in Invertebrates.



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Sl.No. 0270



M-51269



Total No. of Pages : 2

VI Semester B.Sc. Examination, April./May. - 2019

(Semester:Scheme)

ZOOLOGY (Paper - VII)

Genetics and Evolution

Time : 3 Hours

Max. Marks : 80

- Instructions : 1) Common to all.
2) Answer all questions.
3) Draw diagrams wherever necessary.

I. Answer any six of the following:

[6 × 2 = 12]

1. What are mutagens? Name a physical mutagen.
2. Define phenocopy. Give an example.
3. What are analogous organs? Give an example.
4. Define and mention the inheritance pattern of holandric genes.
5. What is three - point test cross?
6. What are iso-alleles? Give an example.
7. Define position effect with an example.
8. Mention any two dominant groups of animals of coenozoic era.
9. Define homeostasis? Mention its types.

II. Write short notes on any six of the following:

[6 × 3 = 18]

10. Human twins.
11. Batesian mimicry.
12. Lethal genes.

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13. Turner's syndrome.
14. Use and disuse theory.
15. Primary non-disjunction.
16. Active flight adaptation in bat.
17. Albinism.
18. Connecting link.

III. Write explanatory notes on any four of the following:

[4 × 5 = 20]

19. Vestigial organs.
20. xx-xy and zz-zw type of sex- determination.
21. Arboreal adaptation in chaameleon.
22. Maternal inheritance.
23. Role of geographical isolation in speciation.
24. Sickle cell anemia.
25. Dominant epistasis.

IV. Answer any Three of the following:

[3 × 10 = 30]

26. State and explain the law of independent assortment of genes with a suitable example.
27. Explain CLB technique for the detection of sex-linked mutations.
28. Discuss Hardy-weinberg law of genetic equilibrium. Explain any two factors influencing frequency of alleles.
29. What is linkage? Explain complete and incomplete linkage in Drosophila.
30. Explain polygenic inheritance with reference to skin colour in human.



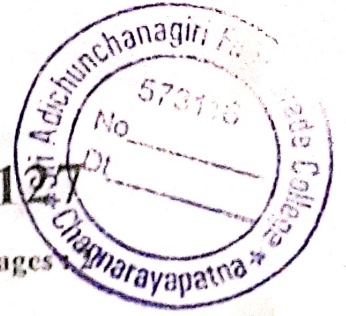
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Sl.No. 0269



M-5127

Total No. of Pages



VI Semester B.Sc. Examination, April/May - 2019

(Semester Scheme)

ZOOLOGY (Paper - VIII)

Environmental Biology and Applied Zoology

Time : 3 Hours

Max. Marks : 80

- Instruction :
- 1) Common to all.
 - 2) Answer all questions.
 - 3) Draw diagrams wherever necessary.

I. Answer any six of the following: [6 × 2 = 12]

1. What is learned behavior?
2. Define complete and incomplete biogeochemical cycles.
3. What is poultry? Mention any two exotic breeds.
4. Give any two important strategies of wild life conservation.
5. What is Dairy? Mention any two indigenous breeds of cattle.
6. Define thermal stratification.
7. What are consumers? Mention the types.
8. Define standard deviation with formula.
9. What is predation? Give an example.

II. Write short notes on any six of the following: [6 × 3 = 18]

10. Wild Life Protection Act, 1972.
11. Insight learning.
12. Light as an abiotic factor.

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13. Leitic and Lotic ecosystems.
14. Morphology of *Bombyx mori*.
15. Bioinformatics and its use.
16. Apiculture.
17. Ecotone and edge effect.
18. Scope of Ecology.

III. Write explanatory notes on any four of the following: [4 × 5 = 20]

19. Conditioned reflex.
20. Desert Biome.
21. Competition.
22. Primary and Secondary Succession.
23. Mutualism and commensalism.
24. North Eastern Himalayan region.
25. Tissue culture.

IV. Answer any Three of the following:

26. What are hot spots? Describe the distribution of wild life fauna of hot spots. in India. [3 × 10 = 30]
27. Define air pollution. Explain the sources, effects and control measures of air pollution.
28. Give a detailed account on the different types of food chains with suitable examples.
29. Explain the morphology and life cycle of *Bombyx mori*.
30. Explain:
 - a) Auditory communication in Gryllids
 - b) Role of hypothalamus in rhythm.



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M-690

II. Write elaborate notes on any five of the following :

[5 × 6 = 30]

16. Pancreatic hormones and their functions
17. CAMP pathway
18. Acromegaly and Grave's disease
19. Female gonadal hormones
20. Test tube baby
21. Histology of Liver
22. Hormone receptors
23. Causes and symptoms of Dwarfism

III. Answer any two of the following :

[2 × 13 = 26]

24. What are endocrine glands? Give an account on the role of pituitary hormones?
25. Describe menstrual cycle and the role of hormones in menstrual cycle.
26. What is In vitro fertilization? Add a detailed account on IVF.

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20462

Sl.No. 0342



M-81

Total No. of Pages : 2

V Semester B.Sc. Examination, Oct./Nov. - 2019
(Semester Scheme)
ZOOLOGY (Paper - VI)
Developmental Biology and Endocrinology

Time : 3 Hours

Max. Marks : 80

- Instructions :
- 1) Answer all questions.
 - 2) Draw diagrams wherever necessary.

I. Answer any six of the following :

[6 × 2 = 12]

- 1) Name the hormone secreted by Parathyroid gland. Mention it's role.
- 2) Mention any two function of allantois.
- 3) What is antrum? Name the fluid present in it.
- 4) Define vitellogenesis.
- 5) What is cyclical parthenogenesis?
- 6) Where do you find sertoli cells? Mention their function.
- 7) What is corpus luteum? Mention the hormone secreted by it.
- 8) What is holoblastic cleavage? Mention the types.
- 9) Where do you find Von Kupffer cells? Mention their function.

II. Write short notes on any six of the following :

[6 × 3 = 18]

- 10) Types of egg based on the distribution of Yolk.
- 11) Causes for Population explosion.
- 12) Yolk sac.
- 13) Loeb's experiment.
- 14) Primary organizer.

P.T.O.

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Sl.No. 0386

M-8158

Total No. of Pages : 2

V Semester B.Sc. Examination, Oct./Nov. - 2019
(Semester Scheme)
ZOOLOGY (Paper - V)
Cell and Molecular Biology

Max. Marks : 80

Time : 3 Hours

Instructions : 1) Answer all questions.
2) Draw diagrams wherever necessary.

[6 × 2 = 12]

I. Answer any six of the following :

- 1) What are Jumping genes?
- 2) List out the functions of mitochondria.
- 3) What are centrioles?
- 4) Expand MHC and SLE.
- 5) Mention the functions of endoplasmic reticulum.
- 6) What are intrinsic and extrinsic proteins?
- 7) What are oncogenes?
- 8) What are mitotic inhibitors? Give an example.
- 9) What are t-RNA and mention the function.

II. Write short notes on any six of the following :

[6 × 3 = 18]

- 10) Spindle fibres and its role.
- 11) Genetic code.
- 12) Active transport.
- 13) Complement fixation.
- 14) Aminoacylation of t-RNA.

P.T.O.

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IV) Answer any three of the following:

[3 x 10 = 30]

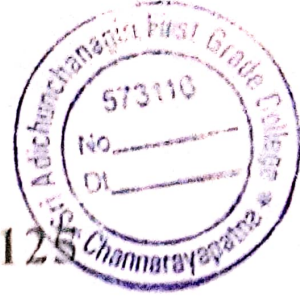
- a) Describe the structure of endoplasmic reticulum and add a note on its functions.
- b) Explain the process of translation in prokaryotes.
- c) Write an essay on AIDS - causes, consequences and prevention.
- d) Enumerate the characteristics of cancer cell and add a note on Carcinogenic agents.
- e) Explain the ultrastructure of Chromatin based on nucleosome model.



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Sl.No. 0357

M-5125



Total No. of Pages : 2

IV Semester B.Sc. Examination, April/May - 2019
(Semester Scheme)

ZOOLOGY (Paper - IV)

Biochemistry and Animal Physiology

Time : 3 Hours

Max. Marks : 60

- Instruction :
- 1) Answer all questions.
 - 2) Common to all.
 - 3) Draw diagrams wherever necessary.

I. Answer any five of the following:

[5 × 1 = 5]

1. What is the role of heparin?
2. Define phospholipids.
3. What are neurotransmitters?
4. Define Respiratory quotient.
5. What is an active site of an enzyme?
6. What is Blood pressure?
7. Name the structural and functional unit of nervous tissue.

II. Write short notes on any five of the following:

[5 × 3 = 15]

8. Monosaccharides.
9. Properties of Enzymes.
10. Types of RNA and its importance.
11. Endotherms.
12. Hamburger's phenomenon.
13. Uricotelism.
14. Differences between fibrous and globular proteins.

P.T.O.

93803

Sl.No. 0398

M-8157

Total No. of Pages : 2

III Semester B.Sc. Examination, Oct./Nov.- 2019
(Scheme : CBCS)

ZOOLOGY (DSC-1C) (Paper - III)

Animal Physiology and Developmental Biology

Time : 3 Hours

Instructions : 1) Answer all questions.
2) Draw diagrams wherever necessary.

Max. Marks : 80

I. Write short notes on any twelve of the following :

[12 × 2 = 24]

- 1) Neurosynapses
- 2) Implantation
- 3) Guanotelism
- 4) Derivatives of ectoderm
- 5) Heart beat
- 6) Amnion
- 7) Blastocyst
- 8) Cloning
- 9) Blastula of frog
- 10) Bohr's effect
- 11) Arrhenotoky
- 12) Homeostasis
- 13) Centrolecithal egg
- 14) Hunger and appetite
- 15) Contractile proteins

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II. Write short notes on any five of the following

- (1) Human sperm
- (2) Approach of parasites
- (3) Morphological types of placenta
- (4) Egg membrane
- (5) Spemann and Mangold experiment
- (6) Denture arch
- (7) Plane of cleavage
- (8) Artificial parthenogenesis

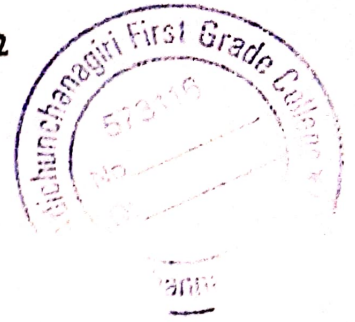
[2 × 13 = 26]

III. Answer any two of the following :

- 24) Describe urine formation in human.
- 25) Explain :
 - a) Glycolysis.
 - b) Process of digestion and absorption of carbohydrates.
- 26) Describe :
 - a) Structure of multipolar neuron.
 - b) Structure of skeletal muscle.
- 27) Give an account on :
 - a) Temperature regulation in homeotherms.
 - b) Osmoregulation in camel.

No. 0147

Total No. of Pages : 2



VI Semester B.Sc. Examination, September - 2021

(Scheme : CBCS)

ZOOLOGY (Paper - VII)

Molecular Cell Biology, Evolution and Ethology

Time : 3 Hours

Max. Marks : 80

- Instructions: 1) Answer all questions.
2) Draw diagrams wherever necessary.

Write short notes on any twelve of the following:

[12 × 2 = 24]

1. Circadian rhythm.
2. MHC antigen.
3. mRNA.
4. Reflexes.
5. Sedormid purpurea.
6. Agglutination.
7. Oncogenes.
8. Ligase.
9. Entrainment.
10. Humoral immunity.
11. PCR.
12. Radiation therapy.
13. Cytokinesis.
14. Gene Therapy.
15. Reflexes.

P.T.O

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Sl.No. 0013

Total No. of Pages : 2

VI Semester B.Sc. Examination, September - 2021
(Semester Scheme) (Non CBCS)
ZOOLOGY (Paper - VIII)

Environmental Biology and Applied Zoology

Time : 3 Hours

Max. Marks : 80

- Instructions: 1) Common to all.
2) Answer all questions.
3) Draw diagrams wherever necessary.

I. Answer any six of the following.

[6 × 2 = 12]

1. Name the species of earthworm used in vermiculture.
2. What are pheromones?
3. Write the importance of vermicompost.
4. What is freshwater ecosystem? Name the types.
5. What is In-situ conservation? Give an example.
6. What is apiculture?
7. What is histogram?
8. What is habituation? Give an example.
9. What is tissue culture?

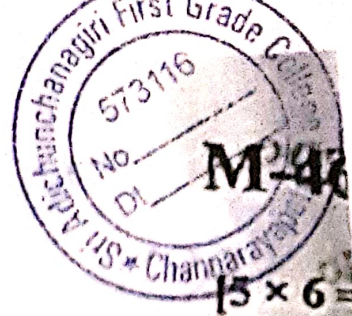
II. Write short notes on any six of the following.

[6 × 3 = 18]

10. Standard deviation.
11. Decomposers of Ecosystem.
12. Fauna of Australian realm.
13. Gause's principle.
14. Mean and median
15. First law of thermodynamics
16. Importance of wild life
17. Circannual rhythm
18. Vermiculture

P.T.O.

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II. Write elaborate notes on any five of the following:

- 16. Habituation.
- 17. Monoclonal antibodies.
- 18. β -lymphocyte.
- 19. Cancer Therapy.
- 20. Bottleneck phenomenon.
- 21. Reproductive isolation.
- 22. Peripatus.
- 23. Allopatric Speciation.

III. Answer any two of the following:

[2 x 13 = 26]

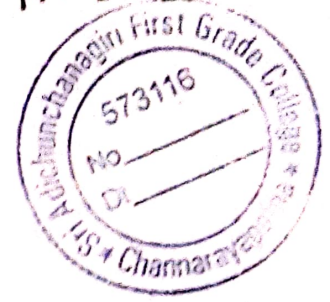
- 24. Describe:
 - a) Bio informatics.
 - b) Structure of Immunoglobulin.
- 25. Explain Darwinian principles.
- 26. Explain:
 - a) Mitotic cell division.
 - b) Imprinting.
- 27. Explain the history of man in detail.



III. Write explanatory notes on any four of the following.

[4 × 5 = 20]

19. Forest biome
20. Wallace's line
21. Transgenic animals
22. Ecological pyramid of number
23. Morphology of male and female *Bombyx mori*
24. Imprinting behaviour
25. Parasitism



IV. Answer any three of the following.

[3 × 10 = 30]

26. What is atmosphere? Discuss its composition and strata.
27. What is soil pollution? Explain the sources effects and controlling measures of soil pollution.
28. Explain innate behaviour with reference to instincts and motivation with examples
29. Explain :-
 - a) Over harvesting
 - b) Non mulberry silkworms
30. What is ecological succession? Explain its type.



VI Semester B.Sc. Examination, September - 2021

(Scheme : CBCS)

ZOOLOGY (Paper - VII)

Molecular Cell Biology, Evolution and Ethology

Max. Marks : 80

Time : 3 Hours

Instructions: 1) Answer all questions.

2) Draw diagrams wherever necessary.

1. Write short notes on any twelve of the following:

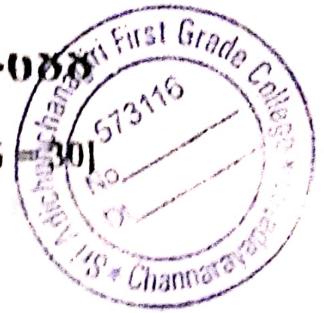
[12 × 2 = 24]

1. Circadian rhythm.
2. MHC antigen.
3. mRNA.
4. Reflexes.
5. Sedormid purpurea.
6. Agglutination.
7. Oncogenes.
8. Ligase.
9. Entrainment.
10. Humoral immunity.
11. PCR.
12. Radiation therapy.
13. Cytokinesis.
14. Gene Therapy.
15. Reflexes.

P.T.O.

VI-088

[5 × 6 = 30]



Write elaborate notes on any five of the following.

- 16) Digestion & absorption of proteins
- 17) Osmoregulation in shark
- 18) Structure of human heart
- 19) Contractile and regulatory proteins
- 20) Structure of Hen's egg
- 21) Structure of graffian follicle
- 22) Fate map of frog
- 23) Loeb's and Bataillon's experiment

Answer any two of the following.

[2 × 13 = 26]

- 24) Describe oxidative phosphorylation Add a note on energy budget
- 25) Explain the process of fertilization in seaurchin. Add a note on significance of fertilization.
- 26) Describe the types of nitrogen excretion with suitable examples.
- 27) Explain the Flxonc transmission of nerve impulse.



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III. Write explanatory notes on any four of the following.

19. Forest biome
20. Wallace's line
21. Transgenic animals
22. Ecological pyramid of number
23. Morphology of male and female Bombyx mori
24. Imprinting behaviour
25. Parasitism

IV. Answer any three of the following.

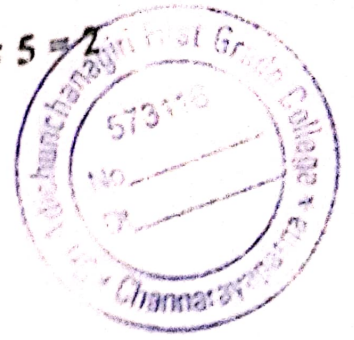
[3 × 10 = :]

26. What is atmosphere? Discuss its composition and strata.
27. What is soil pollution? Explain the sources effects and controll. measures of soil pollution.
28. Explain innate behaviour with reference to instincts and motivation with examples
29. Explain :-
 - a) Over harvesting
 - b) Non mulberry silkworms
30. What is ecological succession? Explain its type.



III. Write explanatory notes on any Four of the following :

[4 × 5 = 20]



19. Migration Pressure and meiotic drive.
20. Yellow coat colour in mice.
21. Volant adaptation in Draco.
22. Genic Balance theory.
23. Norm of reaction.
24. Prezygotic reproductive isolation.
25. Euphenics.

IV. Answer any three of the following :

[3 × 10 = 30]

26. Give a detailed account on the biochemical and embryological evidence in support of organic evolution.
27. Describe the disorders due to inborn errors of metabolism in man.
28. Explain Criss-Cross inheritance with reference to Haemophilia.
29. What are multiple alleles. add a note on ABO Blood group in man.
30. What is incomplete dominance. Discuss with reference to mirabilis Jalapa.



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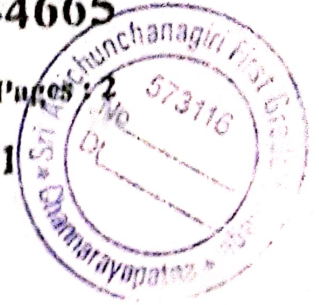
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VI Semester B.Sc. Examination, September - 2021

(Semester Scheme) (CBCS)

ZOOLOGY

Aquarium Fish Keeping (SEC)



Time : 2 Hours

Max. Marks : 40

- Instructions :
- 1) Answer all the questions.
 - 2) Draw diagrams wherever necessary.

I. Write short notes on any six of the following :

[6 × 2 = 12]

- 1) Guppy fish.
- 2) Types of fish feed.
- 3) Aquarium maintenance.
- 4) Anesthesia.
- 5) Any two endemic species of aquarium fishes.
- 6) Sexual dimorphism in angel fish.
- 7) Exotic species.
- 8) Chemicals used in fish transportation.

II. Write elaborate notes on any three of the following :

[3 × 5 = 15]

- 9) Live fish feed.
- 10) Preparation of fish for transport.
- 11) Scope of ornamental fish culture.
- 12) Budget for setting up aquarium as cottage industry.
- 13) Methods of packing of fish.
- 14) Financial aid from Government.

P.T.O.



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III. Write explanatory notes on any Four of the following : [4 × 5 = 20]

19. Migration Pressure and meiotic drive.
20. Yellow coat colour in mice.
21. Volant adaptation in Draco.
22. Genic Balance theory.
23. Norm of reaction.
24. Prezygotic reproductive isolation.
25. Euphenics.

IV. Answer any three of the following :

[3 × 10 = 30]

26. Give a detailed account on the biochemical and embryological evidences in support of organic evolution.
27. Describe the disorders due to inborn errors of metabolism in man.
28. Explain Criss-Cross inheritance with reference to Haemophilia.
29. What are multiple alleles. add a note on ABO Blood group in man.
30. What is incomplete dominance. Discuss.

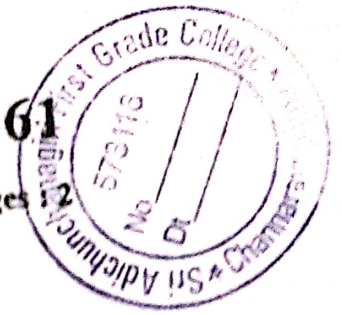
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Total No. of Pages : 2



VI Semester B.Sc. Examination, September - 2021
(Scheme : Semester (Non-CBCS))
ZOOLOGY (Paper - VII)
Genetics and Evolution

Time : 3 Hours

Max. Marks : 80

- Instructions :**
- 1) Common to all.
 - 2) Answer all questions.
 - 3) Draw diagrams wherever necessary.

[6 × 2 = 12]

I. Answer any six of the following :

1. What is incomplete dominance? Give an example.
2. What are homologous organs. Give an example.
3. Write the chromosomal complement of Klienefelter's Syndrome.
4. Mention any two advantages of human genomics.
5. What are multiple alleles? Give an example.
6. Define Gene pool and gene frequency.
7. What is concealing colouration? Give an example.
8. Write the significance of CLB technique.
9. State the Law of Segregation.

[6 × 3 = 18]

II. Write short notes on any Six of the following :

10. Test cross.
11. Genetic drift.
12. Unaltered fossils.
13. Polyploidy.
14. Pleiotropism.
15. Aristopedia in Drosophila.
16. Environmental effect in Bonellia.
17. Thalessemia.
18. Significance of crossing over.

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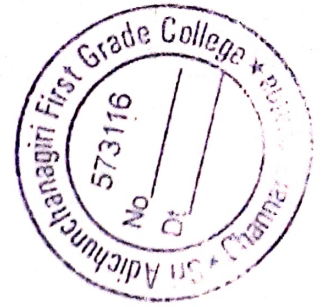
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VI Semester B.Sc. Examination, September - 2021

(Scheme : Semester (Non-CBCS))

ZOOLOGY (Paper - VII)

Genetics and Evolution



Time : 3 Hours

Max. Marks : 80

- Instructions :
- 1) Common to all.
 - 2) Answer all questions.
 - 3) Draw diagrams wherever necessary.

I. Answer any six of the following :

[6 × 2 = 12]

1. What is incomplete dominance? Give an example.
2. What are homologous organs. Give an example.
3. Write the chromosomal complement of Klinefelter's Syndrome.
4. Mention any two advantages of human genomics.
5. What are multiple alleles? Give an example.
6. Define Gene pool and gene frequency.
7. What is concealing colouration? Give an example.
8. Write the significance of CLB technique.
9. State the Law of Segregation.

II. Write short notes on any Six of the following :

[6 × 3 = 18]

10. Test cross.
11. Genetic drift.
12. Unaltered fossils.
13. Polyploidy.
14. Pleiotropism.
15. Aristopedia in Drosophila.
16. Environmental effect in Bonellia.
17. Thalessemia.
18. Significance of crossing over.

P.T.O.

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Sl. No. 0634

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Total No. of Pages : 2

V Semester III B.Sc. Examination, March/April - 2021
(Scheme : CBCS)
ZOOLOGY (Elective - II)
DSE - IA : Endocrinology and Reproduction

Time : 3 Hours

Instructions : 1) Answer all questions.

Max. Marks : 80

2) Draw diagrams wherever necessary.

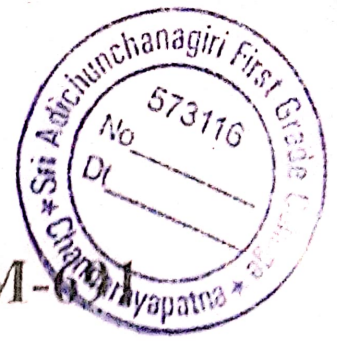
Write short notes on any Twelve of the following : [12 × 2 = 24]

1. Parathyroid hormone
2. Cushing's syndrome
3. Corpus luteum.
4. Condom
5. Ciliated Epithelium
6. Autocrine gland
7. Goiter
8. Seminiferous tubules
9. Vasectomy
10. Goblet cells
11. Adrenal medulla
12. Diabetes mellitus
13. Puberty
14. ZIFT
15. Hepatic cells

P.T.O.

93807

Sl. No. 0298



M-6

Total No. of Pages : 2

V Semester III Year B.Sc. Examination, March/April - 2021

(Scheme : CBCS)

ZOOLOGY (SEC)

Apiculture

Time : 2 Hours

Max. Marks : 40

Instructions : 1) Answer all questions.
2) Draw diagrams wherever necessary.

I. Write short notes on any six of the following :

[6 × 2 = 12]

1. Ectoparasitic enemies of honey bee.
2. Bee hive.
3. Uses of bee wax.
4. Apiary and bee pasture.
5. Royal jelly.
6. Honey bee foraging plants.
7. Pollen.
8. Queen excluders.

II. Write elaborate notes on any three of the following :

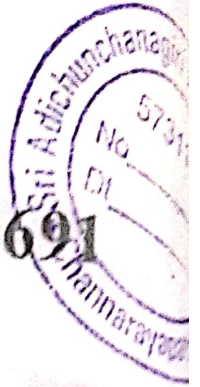
[3 × 5 = 15]

9. Brood diseases.
10. Recent efforts in bee keeping industry.
11. Morphology of honey bee.

P.T.O.

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M-691



12. Honey.
13. Modern method of honey extraction.
14. Worker honey bee.

III. Answer any one of the following :

[1 × 13 = 13]

15. Explain :
 - a) Causes, symptoms and control measures of any two diseases of honey bee.
 - b) Modern methods in employing artificial bee hives for cross pollination in horticultural process.
16. Briefly explain Langstroth type of bee hive in artificial bee rearing method.



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Sl. No. 0366

V Semester III B.Sc. Examination, March/April - 2021
(Scheme : CBCS)

ZOOLOGY (Elective - II)

DSE - IA : Endocrinology and Reproduction



M-690

Total No. of Pages : 2

Time : 3 Hours

Instructions : 1) Answer all questions.
2) Draw diagrams wherever necessary.

Max. Marks : 80

I. Write short notes on any Twelve of the following :

[12 × 2 = 24]

1. Parathyroid hormone
2. Cushing's syndrome
3. Corpus luteum.
4. Condom
5. Ciliated Epithelium
6. Autocrine gland
7. Goiter
8. Seminiferous tubules
9. Vasectomy
10. Goblet cells
11. Adrenal medulla
12. Diabetes mellitus
13. Puberty
14. ZIFT
15. Hepatic cells

P.T.O.

III Semester B.Sc. Examination, March/April - 2021
(Scheme : CBCS)

ZOOLOGY (Paper - III)

Animal Physiology and Developmental Biology

Time : 3 Hours

Instruction: Draw diagrams wherever necessary.

Max. Marks : 80

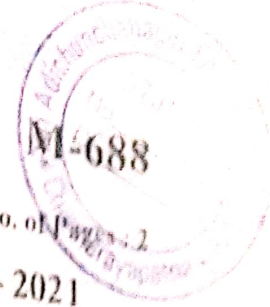
1. Write short notes on any twelve of the following.

[12 × 2 = 24]

- 1) Osmoconformers
- 2) Holoblastic cleavage
- 3) Thelytoky
- 4) Differentiation
- 5) Functions of Amnion
- 6) Derivatives of endoderm
- 7) Law of Q_{10}
- 8) Cyclical parthenogenesis
- 9) Blastomeres
- 10) Deciduate placenta
- 11) Emboly
- 12) Poikilotherms
- 13) Latebra
- 14) Amictic parthenogenesis
- 15) Liquor folliculi

93803

Sl.No. 0090



III Semester B.Sc. Examination, March/April - 2021
(Scheme : CBCS)
ZOOLOGY (Paper - III)
Animal Physiology and Developmental Biology

Total No. of Pages : 2

Time : 3 Hours

Instruction: Draw diagrams wherever necessary.

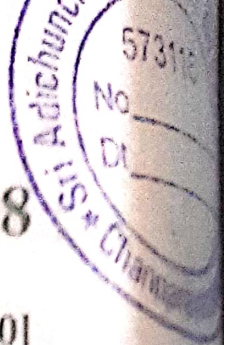
Max. Marks : 80

I. Write short notes on any twelve of the following.

[12 × 2 = 24]

- 1) Osmoconformers
- 2) Holoblastic cleavage
- 3) Thelytoky
- 4) Differentiation
- 5) Functions of Amnion
- 6) Derivatives of endoderm
- 7) Law of Q_{10}
- 8) Cyclical parthenogenesis
- 9) Blastomeres
- 10) Deciduate placenta
- 11) Emboly
- 12) Poikilotherms
- 13) Latchbra
- 14) Amictic parthenogenesis
- 15) Liquor folliculi

P.T.O.



M-688

[5 × 6 = 30]

93803

II. Write elaborate notes on any five of the following.

- 16) Digestion & absorption of proteins
- 17) Osmoregulation in shark
- 18) Structure of human heart
- 19) Contractile and regulatory proteins
- 20) Structure of Hen's egg
- 21) Structure of graffian follicle
- 22) Fate map of frog
- 23) Loeb's and Bataillon's experiment

III. Answer any two of the following.

[2 × 13 = 26]

- 24) Describe oxidative phosphorylation Add a note on energy budget
- 25) Explain the process of fertilization in seaurchin. Add a note on significance of fertilization.
- 26) Describe the types of nitrogen excretion with suitable examples.
- 27) Explain the Flxonic transmission of nerve impulse.

