

Nalanda Open University
Annual Examination - 2020
B.Sc. Zoology (Honours), Part-I
Paper-I

Time: 3.00 Hrs.

Full Marks: 80

Answer any Five questions. Question No. 1 is Compulsory. All questions are of equal value

1. Multiple choice questions. (Each question carries **Two** marks).
 - (i) Infective stage of Entamoeba histolytica is:
(a) Uninucleate cyst (b) Penta nucleate cyst
(c) Binucleate cyst (d) Tetranucleate cyst
 - (ii) The intermediate host of filarial worm is
(a) Sand fly (b) Tsetsefly (c) Housefly (d) Female cutex mosquito.
 - (iii) Locomotory organ of starfish is:
(a) Pseudopodia (b) cilia (c) Polen vesicle (d) Podia.
 - (iv) Trochophore is the larva of :
(a) Earthworm (b) Neries (c) Asea Fur (d) Cockroach
 - (v) Which one is jelly fish:
(a) Aurelia (b) Obelia (c) Metridium (c) Hormiphora
 - (vi) Which of the following is the excretory organ Prawn?
(a) Coxal gland (b) Green gland (c) Hepatopancreas (d) Malpighian tubules
 - (vii) Microfilaria is the larva of:
(a) Tapeworm (b) Round worm (c) Pinworm (d) Filarial worm
 - (viii) Which is called seapan:
(a) Velella (b) Adamsia (c) Porpita (d) Penentula.
2. Give and account of water vascular system in starfish.
3. Give an account of canal system of sponges.
4. Describe the structure and life-cycle of Entomoeba histolytica.
5. Describe the mouth parts of cockroach.
6. Describe the respiratory system of Unio.
7. Describe affinities of *Balanoglossus*.
8. What is alternation of generation? Explain with the referance to life cycle of *obelia*.
9. Describe the Haemocoelomic system of leech.
10. Writ e short notes on any **Two** of the following:
(a) Glochidian larva (b) Polymorphism (c) Radialarva (d) Bladerworm



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Paper-II

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*Answer any **Five** questions. All questions are of equal value*

1. Give an account of Pond Ecosystem.
2. Describe Lac culture in detail.
3. Describe causes and Control of measures of water pollution.
4. Describe the biological clock and its significance.
5. Give the name of different Paddy pests and mention the life-cycle of any two of them.
6. Give an account of migratory behavior in Birds.
7. Give an account of characteristics of lithosphere.
8. Give an account of Nitrogen cycle.
9. Write an essay on Vanishing Wild-life of India.
10. Write notes on **any two** of the following:
 - (a) Acid rain
 - (b) Pyramid of Energy
 - (c) Bee dance
 - (d) Rhinoceros



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B.Sc. Zoology (Subsidiary), Part-I
Paper-I

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Answer any Five questions. All questions are of equal value

1. Describe life-cycle of Ascaris.
2. Write an essay on Darwinism.
3. Describe structure of DNA.
4. Describe the process of locomotion in Hydra.
5. Describe mouth parts of Cockroach.
6. Write an essay on Variation.
7. Describe in detail conjugation in Paramecium.
8. Describe nervous system in Pila.
9. Describe ultra-structure of an animal cell.
10. (a) Golgi Body (b) Book lung
(c) Statocyst of Perwn (d) Radia larva.



Nalanda Open University
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B.Sc. Zoology (Honours), Part-II
Paper-III

Time: 3.00 Hrs.

Full Marks: 80

Answer any Five questions. All questions are of equal value.

1. Describe external features and affinities of Petromyzon.
2. Describe the respiratory system of Scoliodon.
3. Describe feeding mechanism of a Snake.
4. Describe the Systematic position and external features of Herdmania.
5. Describe characters and affinities of Prototheria.
6. Classify Mammalia upto orders giving characters and examples.
7. Describe the process of digestion in any Mammal
8. Give an account of origin of first land vertebrate.
9. Give an account of respiratory system of Pigeon.
10. **Write notes on any two of the following:-**
 - (a) Tadpole larva
 - (b) Wheel organ
 - (c) Oral Hood
 - (d) Lung fishes



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B.Sc. Zoology (Honours), Part-II
Paper-IV

Time: 3.00 Hrs.

Full Marks: 80

Answer any Five questions. All questions are of equal value.

1. Give a Comparative account of kidney of birds and mammal.
2. Describe the different types of placenta in mammal and add a note on their functions.
3. Describe the integumental derivatives of mammals.
4. Describe the development of chick embryo up to three germinal layers.
5. Justify the statement that "Birds are glorified Reptile.
6. Describe different types of eggs in vertebrates.
7. Describe the mammalian heart in detail.
8. Give an account of extra embryonic membrane in chick.
9. Give an account of structure of skin of frog and compare it with that of skin of mammal.
10. Write notes on any two of the following:-
 - (a) Airsac
 - (b) Sweet gland
 - (c) Morula stage
 - (d) Contour feather



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B.Sc. Zoology (Subsidiary), Part-II
Paper-II

Time: 3.00 Hrs.

Full Marks: 80

Answer any Five questions. All questions are of equal value.

1. Give an account of structure and functions of Thyroid Gland.
2. Give an account of flight adaptation in Bird.
3. Discuss the structure and classification of carbohydrate.
4. Describe retrogressive metamorphosis in Herdmania.
5. Give the names of different hormones with their functions of Adenohypophysis.
6. Classify living reptiles up to order with examples.
7. Describe the respiratory system of Scoliodon.
8. Describe the development of chick up to three germinal layers.
9. Give an account structure and classification of Protein.
10. Write notes on any two of the following:
 - (a) Echidina
 - (b) Addison's decrease
 - (c) Oxytocin
 - (d) Goiter.



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B.Sc. Zoology (Honours), Part-III
Paper-V

Time: 3.00 Hrs.

Full Marks: 80

Answer any five question. Questions No. 1 is compulsory. All questions carry equal marks.

1. Multiple choice questions. (Each question carries Two marks)
 - (i) Main function of kidney is:
 - (a) Selective reabsorption
 - (b) Passive absorption
 - (c) Ultrafiltration
 - (d) Both (a) and (c)
 - (ii) Non-reducing Sugar is:
 - (a) Lactose
 - (b) Maltose
 - (c) Glucose
 - (d) Sucrose
 - (iii) Protein present in the matrix of connective tissues is:
 - (a) Collagen
 - (b) Albumin
 - (c) Globulin
 - (d) Protamine
 - (iv) Pacemaker of the heart is:
 - (a) SA node
 - (b) IA node
 - (c) AV septum
 - (d) AV node
 - (v) Heart of man is:
 - (a) Digenic
 - (b) Cardiogenic
 - (c) Neurogenic
 - (d) Myogenic
 - (vi) Vitamin D is absorbed in:
 - (a) Large intestine
 - (b) Small intestine
 - (c) Pancreas
 - (d) Stomach
 - (vii) Ultrafiltration occur in:
 - (a) Glomerulus
 - (b) Blood capillaries
 - (c) Renal Tubules
 - (d) Urinary bladder
 - (viii) Vitamin E is stored in:
 - (a) Mitochondria
 - (b) Mircrozome
 - (c) None of these
 - (d) Both (a) & (b)
2. Describe structure and functions of carbohydrate.
3. Describe the function of different types of Vitamins and give their functions.
4. Give an account of different factors responsible for blood clotting.
5. Give an account of B-oxidation of fatty acids.
6. Give an account of Lung ventilation in mammal.
7. Give an account of Cardiac cycle.
8. Discuss how carbohydrates are digested and absorbed in mammal.
9. What are Amino acids? Classify them.
10. Write notes on any **Two** of the following:
 - (a) Pacemaker
 - (b) ECG
 - (c) Cardiac output
 - (d) Glomerulus.



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Paper-VI

Time: 3.00 Hrs.

Full Marks: 80

Answer any five questions. Question No. 1 is compulsory. All questions carry equal marks.

1. Multiple choice questions. (Each question carries two marks)
 - (i) The site of cholesterol synthesis is:
 - (a) Nucleus
 - (b) Golgi body
 - (c) Endoplasmic reticulum
 - (d) Mitochondria.
 - (ii) Lysosome was discovered by:
 - (a) Palade
 - (b) Robertson
 - (c) De-duve
 - (d) Deveris.
 - (iii) Polyploidy means occurrence of:
 - (a) Haploid set of chromosome
 - (b) More than two sets of chromosome
 - (c) Diploid set of chromosome
 - (d) None of the above.
 - (iv) Mutation which is fatal to the organism is:
 - (a) Gene mutation
 - (b) Lethal mutation
 - (c) Point mutation
 - (d) Reverse mutation
 - (v) Enzymes are synthesized in the cell by:
 - (a) Lysosome
 - (b) Golgi complex
 - (c) Mitochondria
 - (d) Ribosome.
 - (vi) Insulin is a:
 - (a) Carbohydrate
 - (b) fat
 - (c) Protein
 - (d) None of the above.
 - (vii) Down's syndrome in human being is due to:
 - (a) Monosomy
 - (b) Triploid
 - (c) Trisomy
 - (d) Nullisomy.
 - (viii) Which of the following structure is vestigial organ in man:
 - (a) Spleen
 - (b) Appendix
 - (c) Cochlea
 - (d) Islet of Langerhans
2. Describe different types of chromosome and their functions.
3. Write an essay on mutation.
4. Give an account of active transport.
5. Give an account of Fertilization.
6. Describe the structure and functions of Golgi body.
7. Give an account of cell secretion in Pancreatic cells.
8. Describe Mendel's Law of inheritance.
9. Describe the structure and functions of RNA.
10. Write notes on any Two of the following:
 - (a) Lethal mutation
 - (b) Mitochondria
 - (c) Genotype
 - (d) Passive transport.



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Paper-VII

Time: 3.00 Hrs.

Full Marks: 80

Answer any five questions. Question No. 1 is compulsory. All questions carry equal marks.

1. Multiple choice questions. (Each question carries Two marks)
 - (i) Most primitive fossil of horse is:
 - (a) *Equus*
 - (b) *Merichippces*
 - (c) *Mesohippus*
 - (d) *Eohippus*.
 - (ii) Role of mutation in evolution is:
 - (a) *Reproductive Isolation*
 - (b) *Genetic Variation*
 - (c) *Genetic drift*
 - (d) *None of above.*
 - (iii) The era in which man diversified is:
 - (a) *Mesozoic*
 - (b) *Coenozoic*
 - (c) *Palaozoic*
 - (d) *All.*
 - (iv) The "use and disuse" principle was proposed by:
 - (a) *Hugode-Vries*
 - (b) *Lamarck*
 - (c) *Darwin*
 - (d) *Weismann.*
 - (v) The Book "Origin of Species" was published in:
 - (a) 1809
 - (b) 1858
 - (c) 1856
 - (d) 1859
 - (vi) Over production of individual will lead to:
 - (a) *Survival*
 - (b) *Increase in fitness*
 - (c) *Struggle for existence*
 - (d) *Mutation.*
 - (vii) Isolation of a segment of population may result in:
 - (a) *Inbreeding*
 - (b) *netbreeding*
 - (c) *Dominance*
 - (d) *Their extinction.*
 - (viii) Modern horse appeared in:
 - (a) *Eocene*
 - (b) *oligocene*
 - (c) *Mesocene*
 - (d) *Policene.*
2. Give an account of evolution of man.
3. Write an essay an organic evolution.
4. Describe the Australian region and its funna.
5. Give an account of theories of animal distribution.
6. Describe the characteristics of funna of oriental region.
7. Describe variation with suitable examples.
8. Discuss role of isolation in evolution and also discuss reproductive isolation.
9. Discuss Darwin's theory of natural selection in detail.
10. Write notes on any Two of the following:
 - (a) *Gorilla*
 - (b) *Independent assortment of chromosome*
 - (c) *Zygote mortality*
 - (d) *somatic variation.*



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Answer any Five questions. All questions carry equal marks.

1. *Give an account of histology and functions of different hormones secreted by the Adrenal gland.*
2. *Give an account of hormone of adenohiphysis with their different functions.*
3. *Give and account of endocrine functions of Pancreas..*
4. *Describe mean mode and median with example.*
5. *Describe the different methods of sampling*
6. *Describe the merit and demerits of arithmetic mean.*
7. *Give an account of methods of fossil formation.*
8. *Describe the concept of Census.*
9. *Describe the role of biostatistics in biology.*
10. *Write notes on any **two** of the following:*
 - (a) *Standard error*
 - (b) *Cushing's disease*
 - (c) *Thyroxine*
 - (d) *Student-t-test*

