

Nalanda Open University
Annual Examination - 2022
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) Choanocytes are also known as:

(a) Muscle cells	(b) Collar cells
(c) Nerve cells	(d) Blood cells
 - (ii) Spiders belong to which of the following classes of Arthropoda?

(a) Insecta	(b) Crustacea	(c) Merostoma	(d) Arachnida
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 - (iii) Statolith is a part of :

(a) Liver	(b) Intestine	(c) Statocyst	(d) Organs of Bojanus
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 - (iv) Excretory organ of Pila is:

(a) Renal Organ	(b) Keber's Organ	(c) Kidney	(d) None
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 - (v) Mesogloea is present in:

(a) Coelenterata	(b) Platyhelminthes	(c) Annelida	(d) Arthropoda
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 - (vi) Portuguese man of war is a:

(a) Coral Polyp	(b) Sea anemone	(c) Physalia	(d) Sedentary hydrozoa
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 - (vii) Obelia colony is:

(a) Monomorphic	(b) Dimorphic	(c) Trimorphic	(d) Tetramorphic
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 - (viii) Fasciola hepatica is found in:

(a) Intestine of man	(b) Intestine of sheep
(c) Liver of sheep	(d) Pancreas of sheep
2. Describe the structure and function of Entamoeba histolytica.
3. Give an account of the process of conjugation in paramecium and also mention its significance.
4. Classify characteristic features of phylum porifera up to order with suitable examples.
5. Describe the structure and life-cycle of Obelia.
6. Give an account of canal system of Sponges.
7. Describe the respiratory system of Pila.
8. Discuss the water vascular system in starfish.
9. Give an account of general characters and the affinity of Balanoglossus.
10. Write short notes on any **Two** of the following:

(a) Torsion and detorsion	(b) Green Gland
(c) Microfilaria	(d) Bipinnaria larva



Programme of B.Sc. Part-I Zoology (Hons.)
Annual Practical Counselling & Practical Examination - 2021

Venue : 1st Floor Zoology Lab, Biscomaun Tower, Patna - 800 001

(A) Practical Counselling Classes of Zoology (Hons.)

Date	Paper	Time	Enrolment No
31.03.2022	I and II	11.00 AM to 03.00 PM	All Old Students

(B) Practical Examination of Zoology (Hons.)

Date	Paper	Time	Enrolment No
02.04.2022	I	08.30 AM to 11.00 AM	All Old Students
02.04.2022	II	11.30 AM to 02.00 PM	

Nalanda Open University
Annual Examination - 2022
B.Sc. Zoology (Honours), Part-I
Paper-II

Time: 3.00 Hrs.

Full Marks: 80

Answer any Five questions. All questions are of equal value

1. Describe the structure and function of pond ecosystem.
2. What is biogeochemical cycle? Describe the nitrogen cycle with suitable examples.
3. Write an essay on wild life conservation.
4. Describe the causes and control of Water Pollution.
5. Give an account of the social behavior in honeybees.
6. What do you mean by parental care? Describe the parental care in Amphibia.
7. Describe the lac culture or Apiculture in Bihar and also mention its economic importance.
8. Give the five names of paddy pests and discuss the life-cycle of any two of them.
9. Write an essay on 'Migration in Birds'
10. Write short notes on *any two* of the following:
 - (a) Lotic ecosystem
 - (b) Biological clock
 - (c) IRM (Innate Releasing Mechanism)
 - (d) Benthose



Programme of B.Sc. Part-I Zoology (Hons.)
Annual Practical Examination - 2022

Venue : 1st Floor Zoology Lab, Biscomaun Tower, Patna - 800 001

(A) Annual Practical Counselling Class 2022

Date	Enrollment No.	Batch	Paper	Time
12.01.2023	All old Students (190510001-190510600 and 200510001-200510650) and New Students (210510001-210510030)	Z1	I & II	11.00 AM to 05.30 PM
16.01.2023	210510031-210510135	Z2	I & II	11.00 AM to 05.30 PM
16.01.2023	210510136-210510250	Z3	I & II	11.00 AM to 05.30 PM
19.01.2023	210510251-210510400	Z4	I & II	11.00 AM to 05.30 PM
19.01.2023	210510401-210510495	Z5	I & II	11.00 AM to 05.30 PM
23.01.2023	210510496-210510650	Z6	I & II	11.00 AM to 05.30 PM

(B) Annual Practical Examination 2022

Date	Batch	Paper	Time	Paper	Time
13-01-2023	Z1	I	11:00 AM to 02:00 PM	II	02:30 PM to 05:30PM
17-01-2023	Z2	I	11:00 AM to 02:00 PM	II	02:30 PM to 05:30PM
18-01-2023	Z3	I	11:00 AM to 02:00 PM	II	02:30 PM to 05:30PM
20-01-2023	Z4	I	11:00 AM to 02:00 PM	II	02:30 PM to 05:30PM
21-01-2023	Z5	I	11:00 AM to 02:00 PM	II	02:30 PM to 05:30PM
24-01-2023	Z6	I	11:00 AM to 02:00 PM	II	02:30 PM to 05:30PM

Nalanda Open University
Annual Examination - 2022
B.Sc. Zoology (Subsidiary), Part-I
Paper-I

Time: 3.00 Hrs.

Full Marks: 80

Answer any Five questions. All questions are of equal value

1. Describe the structure and nutrition of Paramecium.
2. Discuss the structure and life-cycle of Ascaris
3. Give an account of the blood vascular system of Pheretima posthuma (Earthworm)
4. Describe the mouth-parts of cockroach.
5. Give an account of nervous system in Pila.
6. Describe the structure and function of DNA.
7. Discuss the ultrastructure and function of Mitochondria.
8. Describe the process and significance of fertilization.
9. Write an essay on 'Darwinism'.
10. Write short notes on *any Two* of the following:
 - (a) Conjugation in Paramecium
 - (b) Ribosomes
 - (c) Book lung
 - (d) Canal system of sycon



**Annual Practical Counselling Classes and Practical Examination Programme, 2022 of
B.Sc., Part-I (Zoology Subsidiary, Paper-I)**

Venue : 1st Floor, Zoology Lab, Biscomaun Tower, Patna

Practical Counselling Class Programme

<i>Date</i>	<i>Enrollment No.</i>	<i>Paper</i>	<i>Time</i>
05.01.2023	For All Old and New Students of B.Sc. Chemistry, Physics, Mathematics, Geography, Home Science and Yoga (Hons)	I	11.00 AM to 01.30 PM
05.01.2023	For All Old and New Students of B.Sc. Botany (Hons.)	I	02.00 P.M. to 04.30 P.M.

Practical Examination Programme

<i>Date</i>	<i>Enrollment No.</i>	<i>Paper</i>	<i>Time</i>
08.01.2023	For All Old and New Students of B.Sc. Chemistry, Physics, Mathematics, Geography, Home Science and Yoga (Hons)	I	07.30 AM to 10.00 AM
08.01.2023	For All Old and New Students of B.Sc. Botany (Hons.)	I	10.30 A.M. to 01.00 P.M.

Nalanda Open University
Annual Examination - 2022
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. Classify living reptiles up to orders giving characters and examples.
2. Describe the respiratory system of scoliodon.
3. Give an account of systematic position and process of feeding in Herdmania.
4. Describe the general characters and affinities of Dipnoi.
5. Give an account of the origin and evolution of amphibian.
6. What do you mean by snake venom? Discuss about the biting mechanism in snake.
7. Write an essay on 'origin of birds.'
8. Give an account of organs of respiration and their functions in Pigeon.
9. Describe the characteristic features, distribution and affinities of Metatheira.
10. Write notes on any **Two** of the following:-
 - (a) Syrinx
 - (b) Dinosaurs
 - (c) Neoteny
 - (d) Wheel organ



Nalanda Open University, Patna
Programme of B.Sc. Part-II Zoology (Hons.),
Practical Class and Practical Examination, 2022
Venue : 1st Floor, Zoology / Botany Lab, Biscomaun Tower, Patna

(A) Practical Counselling Class

<i>Date</i>	<i>Enrollment No.</i>	<i>Batch</i>	<i>Paper</i>	<i>Time</i>
14.01.2023	All Old Students -- 180510001 to 190510500	Z1	III & IV	10:30 AM to 02:30 PM
14.01.2023	200510001-210510255	Z2	III & IV	02:30 AM to 06:30 PM
14.01.2023	200510256-210510800	Z3	III & IV	02:30 AM to 06:30 PM

(B) Practical Examination

<i>Date</i>	<i>Batch</i>	<i>Paper</i>	<i>Time</i>	<i>Paper</i>	<i>Time</i>
15.01.2023	Z1	III	01:00 PM to 03:30 PM	IV	03:30 PM to 06:00 PM
16.01.2023	Z2	III	01:00 PM to 03:30 PM	IV	03:30 PM to 06:00 PM
19.01.2023	Z3	III	01:00 PM to 03:30 PM	IV	03:30 PM to 06:00 PM

Nalanda Open University
Annual Examination - 2022
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 the structure of integument of Reptile and mammal.
2. Compare the heart of a frog with that of bird.
3. Give the Aortic arches in class Amphibia and in class mammalia.
4. How brain of reptiles differs from the brain of mammal? Discuss it.
5. Write an essay on mammalian kidney.
6. Describe the structure of hen's egg and explain the function of its various parts.
7. Describe the development of chick embryo upto three germinal layers.
8. Describe briefly the development of heart of chick.
9. What is placenta? Describe the development of placenta and their functions.
10. Write notes on any **Two** of the following:-
 - (a) Mimicry in reptiles
 - (b) Gastrulation in frog
 - (c) Sebaceous gland
 - (d) Microlecithal eggs



Nalanda Open University, Patna
Programme of B.Sc. Part-II Zoology (Hons.),
Practical Class and Practical Examination, 2022
Venue : 1st Floor, Zoology / Botany Lab, Biscomaun Tower, Patna
(A) Practical Counselling Class

Date	Enrollment No.	Batch	Paper	Time
14.01.2023	All Old Students -- 180510001 to 190510500	Z1	III & IV	10:30 AM to 02:30 PM
14.01.2023	200510001-210510255	Z2	III & IV	02:30 AM to 06:30 PM
14.01.2023	200510256-210510800	Z3	III & IV	02:30 AM to 06:30 PM

(B) Practical Examination

Date	Batch	Paper	Time	Paper	Time
15.01.2023	Z1	III	01:00 PM to 03:30 PM	IV	03:30 PM to 06:00 PM
16.01.2023	Z2	III	01:00 PM to 03:30 PM	IV	03:30 PM to 06:00 PM
19.01.2023	Z3	III	01:00 PM to 03:30 PM	IV	03:30 PM to 06:00 PM

Nalanda Open University
Annual Examination - 2020
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.



B.Sc. Zoology (Subsidiary), Part II
Annual Practical Counselling Classes and Examination 2022
Venue: 1st Floor, Zoology Lab, Biscomaun Tower, Patna-1

(A) Practical Counselling Class 2022

Date	Enrollment No	Paper	Time
07-02-2023	For All Old and New Students of B.Sc. Botany, Chemistry, Physics, Mathematics, Geography, Yoga and Home Science (Honours) Students	II	02:00 PM to 04:30 PM

(B) Annual Practical Examination 2022

Date	Enrollment No.	Paper	Time
08-02-2023	For All Old and New Students of B.Sc. Botany, Chemistry, Physics, Mathematics, Geography, Yoga and Home Science (Honours) Students	II	02:00 PM to 04:30 PM

Nalanda Open University
Annual Examination – 2022
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. Classify living Amphibia up to order with examples.
2. Describe the respiratory system of scoliodon.
3. Describe the systematic position and external features of Herdmania.
4. Give a comparative account of aortic arches of birds and mammals.
5. Give an account flight adaptation in Bird.
6. Describe the distribution and affinities of prototheria.
7. Discuss the structure and classification of carbohydrate.

OR

Discuss the mechanism of oxygen transport in blood

8. Give the names of different hormones with their functions of Adenohypophysis.
9. Describe the development of chick up to three germinal layers.
10. Write notes on any **two** of the following:
 - (a) Placoid scale
 - (b) Snake venom
 - (c) Determinate cleavage
 - (d) Thyroid gland



B.Sc. Zoology (Subsidiary), Part II
Annual Practical Counselling Classes and Examination 2022
Venue: 1st Floor, Zoology Lab, Biscomaun Tower, Patna-1

(A) Practical Counselling Class 2022

Date	Enrollment No	Paper	Time
07-02-2023	For All Old and New Students of B.Sc. Botany, Chemistry, Physics, Mathematics, Geography, Yoga and Home Science (Honours) Students	II	02:00 PM to 04:30 PM

(B) Annual Practical Examination 2022

Date	Enrollment No.	Paper	Time
08-02-2023	For All Old and New Students of B.Sc. Botany, Chemistry, Physics, Mathematics, Geography, Yoga and Home Science (Honours) Students	II	02:00 PM to 04:30 PM

Nalanda Open University
Annual Examination – 2021
(Only For Yoga Hon's)
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. Describe the digestive system of scoliodon.
2. Describe the distribution and affinities of prototheria.
3. Give an account of flight adaptation in Bird.
4. Give an account of structure and classification of protein.
5. Classify living reptiles up to orders with examples.
6. Describe the development of chick up to three germinal layers.
7. Explain the statement "Pituitary gland is a master endocrine gland."
8. Describe the structure and functions of different hormones secreted by Adrenal gland.
9. Discuss retrogressive metamorphosis in Herdmania.
10. Write notes on any two of the following:
 - (a) Goiter
 - (b) Placoid scle
 - (c) Air sacs
 - (d) Hypoxia



B.Sc. Zoology, Chemistry & Physics (Subsidiary), Part II, Practical Exam 2021

[For B.Sc Yoga (Hons. Part-II Students)]

Venue: For Zoology - 1st Floor, Zoology Lab, Biscomaun Tower, Patna-1

For Physics- 1st Floor, Physics Lab, Biscomaun Tower, Patna-1

For Chemistry- 1st Floor, Chemistry Lab, Biscomaun Tower, Patna-1

Annual Practical Examination 2021

Date	Time	
	11.00 AM to 2.00 PM	2.30 PM to 05.30 PM
29.09.2022	-----	Zoology (Subsidiary)
30.09.2022	Chemistry (Subsidiary)	Physics (Subsidiary)

Nalanda Open University
Annual Examination - 2022
B.Sc. Zoology (Honours), Part-III
Paper-V

Time: 3.00 Hrs.

Full Marks: 80

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

1. **Multiple choice questions. (Each question carries Two marks)**
 - (i) Lactose is made of :

(a) Glucose + fructose	(b) Glucose + glucose
(c) Glucose + galactose	(d) Fructose + fructose
 - (ii) The covalent bond between two molecules of sugar is called:

(a) Hydrogen bond	(b) Hydrophobic bond
(c) Glucosidic bond	(d) Peptide bond
 - (iii) Amino acids are insoluble in

(a) Acetic acid	(b) Chloroform
(c) Ethanol	(d) Benzene
 - (iv) Collagen is a:

(a) Simple protein	(b) Conjugated protein
(c) Derived protein	(d) Denatured protein
 - (v) Heart beat in vertebrate is:

(a) Neurogenic	(b) Myogenic
(c) Both	(d) None
 - (vi) Vitamin essential for blood clotting is:

(a) A	(b) C
(c) B	(d) K
 - (vii) Duct of Bellini opens into:

(a) Renal papilla	(b) Collecting ducts
(c) Ureter	(d) None of these
 - (viii) In kidney of mammals, malpighian capsules are found in:

(a) Cortex	(b) Medulla
(c) Pelvis	(d) Pyramid
2. Describe the structure and classification of Amino acids.
3. What is glycolysis? Explain the various steps of reactions in glycolysis.
4. Give an account of the metabolism of fat with special reference to B-oxidation.
5. Give the chemistry, functions and deficiency manifestations of Fat-soluble vitamins.
6. What do you mean by blood-coagulation? Discuss the mechanism of blood-coagulation.
7. Describe the process of digestion and absorption of Carbohydrates in mammal.
8. Give an account of the transport of oxygen by blood during respiration. Describe the role of hemoglobin in this process.
9. What is cardiac cycle? Explain the mechanical events of the cardiac cycle.
10. Write notes on any **Two** of the following:

(a) Glycogen	(b) Vitamin C
(c) Skeletal muscle	(d) Nephron



Programme of B.Sc. Part-III Zoology (Hons.)
Annual Practical Counselling & Practical Examination - 2021
 Venue : 1st Floor Zoology Lab, Biscomaun Tower, Patna - 800 001
(A) Practical Counselling Class

Date	Enrollment No.	Batch	Paper	Time
17.06.2022	All Old Students & 180510001 to 180510050	Z1	V, VI & VII	10:00 AM to 06:00 PM
18.06.2022	All Old Students & 180510001 to 180510050	Z1	VIII	10:00 AM to 12:30 PM
18.06.2022	180510051 to 180510200	Z2	V & VI	12:30 PM to 05:30 PM
20.06.2022	180510051 to 180510200	Z2	VII & VIII	10:00 AM to 03:00 PM

(B) Practical Examination

Date	Enrollment No.	Batch	Paper	Time	Paper	Time
21.06.2022	All Old students & 180510001 to 180510050	Z1	V	08:00 AM to 11:00 AM	VI	11.00 AM to 02.00 PM
22.06.2022	All Old students & 180510001 to 180510050	Z1	VII	08:00 AM to 11:00 AM	VIII	11.00 AM to 02.00 PM
23.06.2022	180510051 to 180510200	Z2	V	08:00 AM to 11:00 AM	VI	11.00 AM to 02.00 PM
24.06.2022	180510051 to 180510200	Z2	VII	08:00 AM to 11:00 AM	VIII	11.00 AM to 02.00 PM

Nalanda Open University

Annual Examination - 2022

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

Paper-VI

Time: 3.00 Hrs.

Full Marks: 80

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

- Multiple choice questions. (Each question carries two marks)
 - The process that transports materials across cell membrane at the cost of energy is called:
 - Active transport
 - Passive transport
 - Osmosis
 - Diffusion
 - In hypertonic solution RBC:
 - Swells
 - Maintain its shape
 - Shrinks
 - Undergoes endosmosis
 - The hydrolytic enzymes are present in:
 - Ribosomes
 - Peroxisome
 - Lysosome
 - None of the there.
 - Ribosome was discovered by:
 - Kollinker
 - Palade
 - Porter
 - Bovari
 - Klinefelter's syndrome is due to:
 - Nullisomy
 - Monsomy
 - Triploidy
 - Trisomy
 - If a group of genes are deleted and undergoes some change is due to:
 - Chromosomal mutation
 - Gene mutation
 - Gene modification
 - Aneuploidy
 - A change in the structure of chromosome is called:
 - Nonsense mutation
 - Gene mutation
 - Chromosomal mutation
 - Frame-shift mutation
 - In DNA replication, the helix is unwound by which enzyme:
 - Topoisomerase
 - Primase
 - DNA polymerase
 - Helicase
- Describe the structure and function of Golgi body.
- What do you mean by active transport? Discuss the important features and utility of active transport in the living system.
- Define fertilization. Describe the fertilizin and antifertilizin reactions in details.
- Define mutation? Discuss the molecular basis of Gene-mutation.
- Describe the role of endoplasmic reticulum in cell-secretion.
- Give an account of the molecular composition and function of chromosomes.
- Describe the Mendel's laws of inheritance with the help of suitable examples.
- Elucidate upon the process of protein synthesis from m-RNA.
- Write notes on **any Two** of the following:
 - Aneuploidy
 - Crossing over
 - Lamp brush chromosome
 - Microtubules



Programme of B.Sc. Part-III Zoology (Hons.)

Annual Practical Counselling & Practical Examination - 2022

Venue : 1st Floor Zoology / Botany Lab, Biscomaun Tower, Patna - 800 001

(A) Practical Counselling Class

Date	Enrollment No.	Batch	Paper	Time
22.01.2023	All Old Students & (170510001-180510200) 190510001 to 190510145	Z1	V to VIII	11:00 AM to 05:00 PM
22.01.2023	190510146 to 190510600	Z2	V to VIII	11:00 AM to 05:00 PM

(B) Practical Examination

Date	Batch	Paper	Time	Paper	Time
23.01.2023	Z1	V	01:00 PM to 03:30 PM	VI	03.30 PM to 06.00 PM
25.01.2023	Z1	VII	11:00 AM to 1:30 PM	VIII	02.00 PM to 04.30 PM
27.01.2023	Z2	V	11:00 AM to 1:30 PM	VI	02.00 PM to 04.30 PM
28.01.2023	Z2	VII	11:00 AM to 1:30 PM	VIII	02.00 PM to 04.30 PM

Nalanda Open University

Annual Examination - 2022

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

Paper-VII

Time: 3.00 Hrs.

Full Marks: 80

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

- Multiple choice questions. (Each question carries Two marks)
 - The presence of six digits on hand is the result of:
 - Substantive variation
 - Meristic variation
 - Continuous variation
 - None
 - The expression 'survival of the fittest' was coined by:
 - Lamarck
 - Oparin
 - Charles Darwin
 - H. Spencer
 - Neo-Lamarckism depends on:
 - Mutation and variation
 - Only variations
 - Enormous fertility
 - Mutation & natural selection
 - The evolution of the long neck of giraffe could be due to:
 - Natural selection
 - Speciation
 - Isolation
 - Inheritance of acquired characters
 - Reproductive isolation refers to:
 - Breeding in capacity
 - Courtship rituals
 - Species breed true
 - Interspecies crosses
 - Role of isolation in evolution is :
 - Differentiation of species
 - Maintenance of species
 - Evolutionary divergence
 - Extinction of species
 - The first probable fossil man (Home) is :
 - Australopithecus
 - Pithecanthropus
 - Homo habilis
 - Ramapithecus
 - The zoological name of modern man is :
 - Canis familiaris
 - Panthera tigris
 - Homo sapiens
 - None of these
- Define variation. Describe the genetic source of variation and also mention the role of variation in evolution.
- Write an essay on Darwin's theory of natural selection and origin of species.
- Give an account of the isolating mechanism and their role in evolution.
- What is fossil? Discuss about the fossil history of horse.
- Describe the physical features & characteristic fauna of the oriental region.
- Give an account of the peculiarities of the fauna of Continental Island.
- What are zoological realms of the world? Describe the boundaries and climatic characteristics of Palearctic region.
- Discuss the origin and evolution of Homo sapiens.
- Write notes on any two of the following:
 - Polymorphic variation
 - Neo-Darwinism
 - Peking man
 - Eohippus



Programme of B.Sc. Part-III Zoology (Hons.)

Annual Practical Counselling & Practical Examination - 2022

Venue : 1st Floor Zoology / Botany Lab, Biscomaun Tower, Patna - 800 001

(A) Practical Counselling Class

Date	Enrollment No.	Batch	Paper	Time
22.01.2023	All Old Students & (170510001-180510200) 190510001 to 190510145	Z1	V to VIII	11:00 AM to 05:00 PM
22.01.2023	190510146 to 190510600	Z2	V to VIII	11:00 AM to 05:00 PM

(B) Practical Examination

Date	Batch	Paper	Time	Paper	Time
23.01.2023	Z1	V	01:00 PM to 03:30 PM	VI	03.30 PM to 06.00 PM
25.01.2023	Z1	VII	11:00 AM to 1:30 PM	VIII	02.00 PM to 04.30 PM
27.01.2023	Z2	V	11:00 AM to 1:30 PM	VI	02.00 PM to 04.30 PM
28.01.2023	Z2	VII	11:00 AM to 1:30 PM	VIII	02.00 PM to 04.30 PM

Nalanda Open University
Annual Examination - 2022
B.Sc. Zoology (Honours), Part-III
Paper-VIII

Time: 3.00 Hrs.

Full Marks: 80

Answer any Five questions. All questions carry equal marks.

1. Describe the histology of Adrenal cortex and adrenal medulla with the help of labeled diagram.
2. Describe the physiological action of the ovarian hormones.
3. Give an account of the histology of pancreas and mention the hormone action secreted by it.
4. Discuss the different hormones secreted by adenohipophysis and their physiological action.
5. What is fossil? How are they formed and how would you determine their age?
6. Name the different geological eras and describe the fauna of palaeozoic eras.
7. Define arithmetic mean. Explain it with suitable example and also mention its merits and demerits.
8. Describe the method and merits & demerits of random sample.
9. Define Chi-square test. Discuss the common application of it with a suitable example.
10. Write notes on any **two** of the following:
 - (a) Jurassic period
 - (b) Goiter
 - (c) ADH
 - (d) Normal distribution



Programme of B.Sc. Part-III Zoology (Hons.)
Annual Practical Counselling & Practical Examination - 2022
Venue : 1st Floor Zoology / Botany Lab, Biscomaun Tower, Patna - 800 001
(A) Practical Counselling Class

Date	Enrollment No.	Batch	Paper	Time
22.01.2023	All Old Students & (170510001-180510200) 190510001 to 190510145	Z1	V to VIII	11:00 AM to 05:00 PM
22.01.2023	190510146 to 190510600	Z2	V to VIII	11:00 AM to 05:00 PM

(B) Practical Examination

Date	Batch	Paper	Time	Paper	Time
23.01.2023	Z1	V	01:00 PM to 03:30 PM	VI	03.30 PM to 06.00 PM
25.01.2023	Z1	VII	11:00 AM to 1:30 PM	VIII	02.00 PM to 04.30 PM
27.01.2023	Z2	V	11:00 AM to 1:30 PM	VI	02.00 PM to 04.30 PM
28.01.2023	Z2	VII	11:00 AM to 1:30 PM	VIII	02.00 PM to 04.30 PM