

NEP

B.Sc. IV Semester Degree Examination, September/October 2023

ZOOLOGY

Paper – Z 4.1 : Gene Technology, Immunology and
Computational Biology

Time : 3 Hours

Max. Marks : 60

- Instructions :** 1) Part – A : All questions are compulsory.
2) Part – B : Answer any five full questions
3) Draw neat labelled diagrams/graphs wherever necessary.

PART – A

Answer the following :

(10×1=10)

1. a) Restriction enzymes.
- b) Cry proteins.
- c) Antigens.
- d) B-cells.
- e) Payer's patch.
- f) Sequence database.
- g) Plasmids.
- h) Correlation.
- i) Frequency distribution.
- j) Monoclonal antibodies.

PART – B

Answer any five full questions of the following :

(5×10=50)

2. a) Explain steps involved in recombinant DNA technology. 10
- b) Describe pBR-322.
3. a) Write a note on transgenic animals. 10
- b) Describe the structure of IgG.

P.T.O.

31432



4. a) Write a note on role of B-lymphocytes. 10
b) Write a note on types of immunity. 10
5. a) Write a note on organ transplantation. 10
b) Explain briefly scope and applications of bioinformatics. 10
6. a) Describe the structure of Major Histocompatibility Complexes (MHCs). 10
b) Write a note on gene manipulation. 10
7. a) Explain synthesis and application of monoclonal antibodies. 10
b) Briefly explain applications of genetic engineering. 10
8. a) Following are the marks of the six students of a class during the semester exam, the paper for which was of 100 marks : 10
92, 95, 85, 80, 75, 50
Calculate the variance and standard deviation.
- b) Following data gives total marks (out of 600) obtained by six children of a particular class :

Students	Ajay	Bali	Dipti	Raj	Hari	Priya
Marks obtained	450	500	300	360	400	540

Represent the data by a Bar graph.



11426

B.Sc. IV Semester Degree Examination, Sept./Oct. 2022
ZOOLOGY

Paper – 4.1 (Old) : Physiology and Biochemistry

Time : 3 Hours

Max. Marks : 80

Instructions : 1) Answer should be **specific** to the questions.
2) Draw **neat** labelled diagram **wherever** necessary.

I. Answer any ten of the following :

(10×2=20)

- 1) Cellular physiology.
- 2) Ptyalin.
- 3) Haemo erythrin.
- 4) Neurogenic heart.
- 5) Ammonotelism.
- 6) Actin muscle filament.
- 7) Hypothyroidism.
- 8) Bioenergetics.
- 9) Isomerase.
- 10) Payer's patch.
- 11) Henle's loop.
- 12) Blood pressure.

II. Answer any four of the following :

(4×5=20)

- 13) Transport of CO₂.
- 14) Digestion of protein.
- 15) Ornithine cycle.
- 16) Ultra structure of striated muscle.
- 17) Functions and deficiency symptoms of Vitamin A and Vitamin D.
- 18) Enzyme inhibitors.

P.T.O.





III. Answer **any four** of the following :

(4×10=40)

- 19) Explain Krebs cycle.
 - 20) Structure of human heart V.S.
 - 21) Explain endocrine role of pituitary gland.
 - 22) Write a account of AIDS.
 - 23) Physiology of urine formation.
 - 24) Explain transmission of nerve impulse.
-



11426

B.Sc. IV Semester Degree Examination, April/May - 2019

ZOOLOGY

Physiology And Biochemistry

Paper - 4.1

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

1. Answer should be specific to the Questions.
2. Draw neat labelled diagram wherever necessary.

I. Answer any TEN of the following.

(10×2=20)

1. Innate immunity
2. Ptyalin
3. Henle's loop
4. Grave's disease
5. Mechanical digestion
6. Hypotension
7. Respiratory quotient
8. Neuromuscular function
9. Neurogenic heart
10. Bioenergetics
11. Allosteric inhibitors
12. Osteomalacia.

II. Answer any FOUR of the following

(4×5=20)

13. Digestion in Small intestine.
14. Gonadal hormones & its functions.
15. Ornithine cycle.
16. Structure of IgG

[P.T.O.]



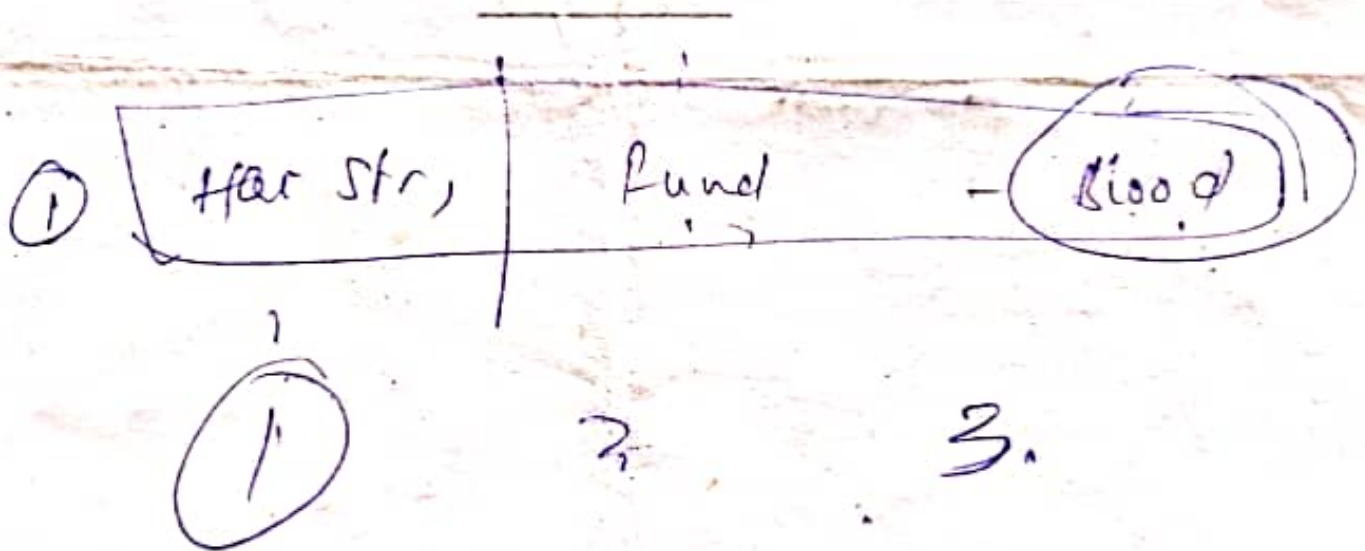


- 17. Mechanism of synaptic transmission.
- 18. Functions & deficiency symptoms of vitamin E & K.

III. Answer any **FOUR** of the following.

(4×10=40)

- 19. Composition of human blood.
- 20. Ultra structure of striated muscles.
- 21. Transport of oxygen & carbondioxide.
- 22. Causes, effects & preventive measures of AIDS.
- 23. Classify enzymes according to IUB system.
- 24. Kreb's Cycle. *circulized*





B.Sc. IV Semester Degree Examination, May - 2018

ZOOLOGY

Physiology, Biochemistry and Immunology

Paper - 4.1

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

- 1) Answer should be specific to the following.
- 2) Draw neat labelled diagram wherever necessary.

L Answer any TEN of the following :

(10×2=20)

1. Peristalsis.
2. Respiratory pigments.
3. Ornithine cycle.
4. Neurotransmitter.
5. HCG
6. Enumerate fat soluble vitamins.
7. Sarcoplasmic reticulum.
8. Myogenic Heart.
9. Islet of langer hans.
10. Rickets.
11. Bursa fabricus.
12. Oxidative phosphorylation.



(2)

11426

II. Answer any FOUR of the following :

(4×5=20)

13. Muscle proteins
14. Transport of O_2
15. Hormones of ovaries
16. Digestion of protein
17. T and B cells
18. Enzyme inhibitors

III. Answer any FOUR of the following.

(4×10=40)

19. Explain the process of Krebs cycle
 20. Classify enzymes according to IUB system.
 21. Explain physiology of urine formation.
 22. Composition of Human blood
 23. Explain the physiology of pituitary Hormones.
-



11426

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

Paper – 4.1 : Physiology and Biochemistry

Time : 3 Hours

Max. Marks : 80

- Instructions :** 1) Answer should be *specific* to the questions.
2) Draw *neat* labelled diagrams wherever necessary.

I. Answer any ten of the following :

(10×2=20)

- 1) Pathological physiology.
- 2) Peristalsis.
- 3) Haemocyanin.
- 4) Tachycardia.
- 5) Uricotelism.
- 6) Troponin.
- 7) Resting potential.
- 8) Goiter.
- 9) Bursa of fabricus.
- 10) Transferases.
- 11) Scurvy.
- 12) Oxidative phosphorylation.

II. Answer any four of the following :

(4×5=20)

- 13) Role of pancreatic juice and intestinal juice in digestion.
- 14) Mechanism of synaptic transmission.
- 15) Respiratory quotient.
- 16) Structure of IgG.
- 17) Function of pancreatic hormones.
- 18) Lock and key mechanism of enzyme action.

P.T.O.



11426



III. Answer **any four** of the following :

(4×10=40)

- 19) Mechanism of sliding filament theory of muscle contraction.
 - 20) Process of urine formation.
 - 21) Structure of human heart.
 - 22) Hormones of Adenohypophysis and its functions.
 - 23) Glycolysis.
 - 24) Functions and deficiency symptoms of Vitamin B complex.
-