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Reg. No. :

Name :

Second Semester M.Sc. Degree Examination, September 2022

Zoology

ZO 223 : CELL BIOLOGY, MOLECULAR BIOLOGY AND BIOINFORMATICS

(2013 Admission Onwards)

Time : 3 Hours

Max. Marks : 75

SECTION – A

Write very brief notes on any **ten** of the following. Each question carries **2** marks.

1. Uniport
2. Diagram of Cyclic AMP
3. What is CDK?
4. Scaffold proteins
5. Topoisomerase
6. Second messenger system.
7. Intergenic sequences
8. Signal transduction
9. Chromatin
10. Transcription factor
11. Spliceosomes

P.T.O.



12. TATA box
13. Biological databases
14. Microsatellite DNA
15. Zinc-finger motif

(10 × 2 = 20 Marks)

SECTION – B

Write short notes on **any six** of the following. **Each** question carries **4** marks.

16. Mitochondrial genome
17. Direct reversal damage
18. RNA polymerase in Eukaryotes
19. Sigma factor and its role
20. Briefly describe the enzymes involved in DNA replication
21. FASTA
22. Transmembrane potential
23. DNA supercoiling in Eukaryotes
24. Write about moderately repeated sequence with example
25. Enhancers

(6 × 4 = 24 Marks)

SECTION – C

Write short essay on **any three** of the following. **Each** question carries **7** marks.

26. Posttranscriptional modification of mRNA
27. Mention the signal transduction pathways of RAS



28. Write about membrane transport
29. Computational analysis of proteomes
30. Post translational modification

(3 × 7 = 21 Marks)

SECTION – D

Write an essay on **any one** of the following. **Each** question carries **10** marks.

31. Write an essay about DNA repair mechanism.
32. Give an account of molecular events of translation in prokaryotes.

(1 × 10 = 10 Marks)

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P – 5318

Reg. No. :

Name :

Second Semester M.Sc. Degree Examination, September 2022

Zoology

**ZO 222 : GENETICS, QUANTITATIVE ANALYSIS AND
RESEARCH METHODOLOGY**

(2013 Admission Onwards)

Time : 3 Hours

Max. Marks : 75

SECTION – A

Write very brief notes on **any ten** of the following. Select **eight** from Group 1 and **two** from Group 2. Each question carries **2** marks.

Group-1

1. Chromosome banding.
2. Genetic variations.
3. Lyon hypothesis.
4. Thalassemia.
5. Lambda phages.
6. Founder effect.
7. Retrovirus.
8. Consequences of inbreeding.
9. Gene frequency.
10. Penetrance.
11. Gene mapping.

P.T.O.



Group-2

12. Mode.
13. Kurtosis.
14. ANOVA.
15. LC_{50} and LD_{50} .

(10 × 2 = 20 Marks)

SECTION – B

Write short notes on **any six** of the following. Select **four** from Group 3 and **two** from Group 4. **Each** question carries **4** marks.

Group-3

16. Genetic drift and bottle neck effect.
17. Legal and ethical issues in genetics.
18. Multiplication of HIV genome.
19. Genetics of ABO system.
20. Vectors in recombinant DNA technology.
21. Human genome project.
22. Western blotting.

Group-4

23. Poisson distribution.
24. Different types of research design.
25. Research ethics and laws in India.

(6 × 4 = 24 Marks)



SECTION – C

Write short essays on **any three** of the following. Select **two** from Group 5 and **one** from Group 6. **Each** question carries **7** marks.

Group-5

26. Human gene therapy.
27. Hardy Weinberg equilibrium and factors affecting it.
28. Inheritance of sickle cell anaemia.

Group-6

29. Correlation and Regression.
30. Steps in formulation of research.

(3 × 7 = 21 Marks)

SECTION – D

Write an essay on **any one** of the following. **Each** question carries **10** marks.

31. DNA fingerprinting and its applications.
32. Genetic disorders.

(1 × 10 = 10 Marks)



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Reg. No. :

Name :

Second Semester B.Sc. Degree Examination, August 2022

First Degree Programme under CBCSS

Zoology

Core Course II

ZO 1241: ANIMAL DIVERSITY II

(2020 Admission)

Special Examination

Time : 3 Hours

Max. Marks : 80

Draw diagrams only if specified in the question.

- I. Answer **all** the questions in one or two sentences.(Each question carries **1** mark).
1. What is the common name of *Draco volans*?
 2. Which is the Living Fossil present in New Zealand.
 3. Mention the Sub Class to which Green Turtles belong to.
 4. Comment on sexual dimorphism in Koel.
 5. Which fossil bird was discovered in Bavaria, Germany?
 6. Give the common name of *Etroplus suratensis*.
 7. Name the mammal with weak eyesight, limbs, and echo location.

P.T.O.



8. Write the scientific name of the National animal of India.
9. Which animal exhibit neoteny?
10. Name the sea snake common along the coast of Kerala.

(10 × 1 = 10 Marks)

II. Answer any **eight** of the following. (Each question carries **2** marks). Answer should not exceed **one** paragraph each.

11. Briefly mention the types and mode of action of snake venom.
12. Mention the evolutionary significance of *Amphioxus*.
13. List the main characters of a Chondrichthyes.
14. Comment on “Mermaid’s Purse”.
15. What are Cyclostomes?
16. Mention two types of Fish Migration.
17. What are lung fishes? Give an example.
18. Give the diagnostic features of Apodans.
19. Write a short note on *Rhacaphorus*.
20. Comment on Ecdysis.
21. What are Flight muscles?
22. Distinguish Remiges from Rectrices.
23. Mention the salient features of Prototheria, giving two examples.
24. Differentiate Indian elephant from African elephant.
25. Give the adaptations seen in the “Flying Fox”.
26. Giving an example, explain Retrogressive Metamorphosis.

(8 × 2 = 16 Marks)



III. Answer any **six** of the following. (Each question carries **4** marks). Answer should not exceed **120** words.

27. Comment on Alien Fishes and its impact on indigenous diversity.
28. Mention the affinities of *Amphioxus* with non chordates and chordates.
29. Give a short account on Ammocoetes larva and its adult.
30. Enumerate the arboreal adaptations seen in *Chameleon*.
31. Comment on Dipnoians.
32. Give the taxonomic position of Camel upto Order level.
33. List the suborders of Squamata, giving an example each.
34. Mention the feeding behavior of Amphioxus.
35. Give the scientific name of the national fish of India.
36. Mention the salient features of Thaliacea.
37. Comment on any one Blind snake.
38. Which fishes are known as Butter Fish and Pearl Spot?

(6 × 4 = 24 Marks)

IV. Answer any **two** questions. **Each** question carries **15** marks.

39. Give an account of the aquatic adaptations seen in mammals.
40. Explain Accessory respiratory organs in Fishes, citing examples.
41. Describe the poisonous snakes in Kerala, providing an identification key.
42. Write an essay on Bird Migration.
43. Explain Parental care in Amphibia.
44. Give a comparative account of the Brain in Amphibia and Human.

(2 × 15 = 30 Marks)

