

Rekha V.V.I. Questions for 2022 Examination

*Answer of below mentioned V.V.I. questions are present in your
Rekha Guess Paper Part-III Zoology-5*

Group – A

Biochemistry

1. What are carbohydrates ? Classify them with examples.
Or, Define carbohydrates. Describe the structure of atleast one monosaccharides, disaccharides and polysaccharides. 5
2. What are amino acids? Classify them with examples. 9
3. Give a brief account of various structural levels of proteins.
Or, Give an account of the various levels of protein structure.
Or, What are proteins ? Classify them with example. **V. V. I.** 11
4. Define lipids. Describe the classification of lipids with suitable examples. **V. V. I.** 13
5. What are enzymes ? Mention the important properties of enzymes. Give a brief account of the classification of enzymes. 18
6. Describe the mechanism of enzyme action. What is the significance of K_m value ? 22
7. What are vitamins ? Give an account of fat soluble vitamins and diseases caused due to their deficiency. **V. V. I.**
Or, Describe the structure and functions of any two fat soluble vitamins studied by you. 24
8. What are water soluble vitamins ? Give an account of any two water soluble vitamin. 28
9. Give an account of conversion of glucose into pyruvic acid.
Or, Describe the step - wise degradation of glucose to pyruvic acid through glycolytic pathway. **V. V. I.** 30
10. Describe the Krebs cycle and its energetics.
Or, Describe the various steps of TCA cycle or Krebs cycle. Discuss its energetics. 33
11. Give an account of β – oxidation of fatty acids. **V. V. I.** 39

Group – B

Physiology and Endocrinology

1. What is digestion ? Give an account of physiology of carbohydrate digestion and absorption in mammals. 42
2. Give an account of physiology of protein digestion and absorption in mammals. 46
3. Describe oxygen (O₂) transport in blood of mammals. 48
4. Discuss carbondioxide (CO₂) transport in mammals. 53
5. Give an account of composition of blood. 54
6. Describe the mechanism of blood clotting. **V. V. I.**
Or, Describe the process of coagulation of blood. Enumerate the important factors involved in coagulation.
Or, Explain the extrinsic and intrinsic coagulation of blood with suitable steps. 57
7. What are nitrogenous excretory wastes ? How urine is formed in a mammals ?
Or, Give an account of mechanism of excretion of nitrogenous wastes in mammals.
Or, Describe the physiological process involved in formation and elimination of nitrogenous waste materials in mammals. 60
8. Give an account of urea cycle in mammals. **V. V. I.** 63
9. Describe the physiology of Renal excretion and osmo-regulation in mammals. 65
10. Describe the physiology of muscle contraction. 69
11. Describe the physiology of nerve conduction or nerve impulse. **V. V. I.** 74
12. Explain, in detail, the mechanism of hormone action. **V. V. I.** 77
13. Describe the histophysiology of mammalian pituitary gland. **V. V. I.** 80
14. Describe the structure and functions of thyroid gland of mammals. 83
15. Describe the structure and functions of mammalian adrenal gland. 87
16. Describe the structure and functions of hormones of Islets of Langerhans. 92



ZOOLOGY - 5 (Hons.) (2021)

Group – A

1. Define carbohydrates. Describe the structure of at least one monosaccharides disaccharides and polysaccharides. 5
2. Describe the mechanism of enzyme action. 22
3. What are enzymes ? Mention their important properties and give a brief account of classification of enzymes. 18
4. Describe the various steps of TCA cycle or Kreb's cycle. Discuss its energetics. 33

Group – B

5. Describe O₂ transport in blood of mammals. 48
6. Give an account of physiology of protein digestion and absorption. 46
7. Describe the physiology of muscle contraction. 69
8. Describe the structure and functions of mammalian adrenal gland. 87

ZOOLOGY - 5 (Hons.) (2020)

Answer five questions selecting at least two questions from each Group.

Group - A

1. Describe the step-wise degradation of glucose to pyruvic acid through glycolytic pathway. 30
2. Give an account of the various levels of protein structure. 11
3. Define lipids. Describe the classification of lipids with suitable examples. 13
4. What are Vitamins? Give an account of fat soluble vitamins and diseases caused due to their deficiency. 24

Group-B

5. Give an account of urea cycle in Mammals. 63
6. Describe the physiology of nerve conduction. 74
7. Explain, in detail, the mechanism of Hormone action. 77
8. Describe the structure and functions of Mammalian Pituitary Gland. 80

ZOOLOGY - 5 (Hons.) (2019)

Answer five questions selecting at least two from each Group.

Group - A

1. Describe the mechanisms of enzyme action. 22
2. Give an account of β -oxidation of fatty acids. 39
3. What are carbohydrates ? Classify carbohydrates with suitable examples. 5
4. Describe Kreb's Cycle and its energetics. 33

Group - B

5. Give an account of composition of blood and mechanism of blood clotting. 54,57
 6. Describe the physiology of muscle contraction. 69
 7. Describe the structure and functions of thyroid gland of mammals. 83
 8. Discuss CO₂ transport in mammals. 53
- Or, Give an account of physiology of carbohydrate digestion and absorption in mammals. 42



Rekha V.V.I. Questions for 2022 Examination

*Answer of below mentioned V.V.I. questions are present in your
Rekha Guess Paper Part-III Zoology-6*

GROUP-A
Biotechnology and Immunology

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|-----|---|-------|----|
| 1. | Describe the concept of Biotechnology. | | 7 |
| 2. | Discuss the role of biotechnology in human welfare.
Or, Biotechnology can play an important role in human welfare. Discuss. | | 8 |
| 3. | Give an account of basic concept of Genetic engineering.
Or, Define Genetic engineering. Describe the various biological tools of Genetic engineering. | | 11 |
| 4. | Give an account of restriction enzyme (endonucleases). Add a note on the use of restriction endonucleases in Genetic engineering. | ..... | 12 |
| 5. | What do you mean by cloning vectors ? Describe cosmids and shuttle vectors in genetic engineering. V. V. I.
Or, What are cloning vectors ? Explain the role of cosmids and shuttle vectors in genetic engineering. | | 15 |
| 6. | What are plasmids ? Explain the role of plasmids in recombinant DNA technology. V. V. I. | ..... | 18 |
| 7. | Describe the process of DNA fingerprinting. Briefly explain its usefulness. V. V. I. | ..... | 20 |
| 8. | Describe the structure and functions of immunoglobulins. | ..... | 22 |
| 9. | What are antibodies ? Explain its various types. Also, differentiate between antigen and antibody.
Or, Describe mechanism of biosynthesis of antibodies. | | 27 |
| 10. | Define antigens and antibodies. Give an account of antibody-antigen interactions.
Or, Describe the mechanism of antigen-antibody interaction. | | 29 |
| 11. | Describe the various types of immune responses. V. V. I. | ..... | 33 |
| 12. | What do you mean by immune response ? Describe autoimmunity type of immune responses. | ..... | 37 |
| 13. | What do you mean by immune response ? Describe hypersensitivity type of immune responses. | ..... | 40 |

14. Describe T and B lymphocytes. Explain their specific roles.
Or, Differentiate B and T lymphocytes. Explain their specific roles. 42
15. What is vaccine ? Give an account of different types of vaccines. 45
16. Write short notes on the following :- **V. V. I.**
- (a) Plasmids 47
 - (b) Cosmids 48
 - (c) DNA polymerase 49
 - (d) Lymphocytes 49
 - (e) Natural killer cells
Or, NK cells 50
 - (f) Killer Cells
Or, K Cells 51
 - (g) Macrophages 51
 - (h) Epitope 52
 - (i) Haptens 52
 - (j) Allergy 53
 - (k) Inflammation 53
 - (l) Vaccination 54

GROUP-B
Evolution and Zoogeography

1. Write an essay on Lamarckism. **V. V. I.** 55
2. Write an essay on Darwin's theory of natural selection and origin of species.
Or, Write an essay on Darwinism. 58
3. What is Neo-Darwinism? How does it differ from Lamarckism? 61
4. Define species according to "Biological Species Concept". What are attributes of a species ? Discuss various species of categories. 64
5. Define species according to 'Biological Species Concept' and describe the mechanism of speciation. **V. V. I.**
Or, Describe various factors involved in speciation.
Or, Write an explanatory note on genetic drift. 65
6. Give an account of allopatric speciation. **V. V. I.** 68

7. Describe Hardy - Weinberg's law of equilibrium with salient features and examples. **V. V. I.** 70
8. Write an essay on evolution of horse.
Or, Trace the evolution of horse. **V. V. I.** 72
9. Describe (Trace) the evolution of modern man.
Or, Give an account of evolution of man. 75
10. What is neoteny? Discuss its role in evolution. 81
11. Describe in detail orthogenesis giving suitable examples. 82
12. What do you mean by Zoogeographical realms ? Give an account of characteristics and faunal diversity of Ethiopian realm. 83
13. Define Zoogeographical realms. Give an account of Australian realm with sub-divisions and faunal characteristics.
Or, Explain the boundary and sub-region of Australian realm with its characteristic fauna. 87
14. Name different Zoogeographical realms of the world. Give an account of oriental region with subdivisions and characteristic fauna. **V. V. I.** 91



ZOOLOGY - 6 (Hons.) (2021)

Group – A

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|----|---|-------|----|
| 1. | Give an account of basic concept of Genetic engineering. | | 11 |
| 2. | Biotechnology can play an important role in human welfare. Discuss. | | 8 |
| 3. | Describe the mechanism of antigen-antibody interaction. | ..... | 29 |
| 4. | Write notes on any two of the following– | | |
| | (a) Allergy..... | | 53 |
| | (b) Lymphocytes..... | | 49 |
| | (c) Cosmids..... | | 48 |
| | (d) DNA Polymerase..... | | 49 |

Group – B

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|----|---|-------|----|
| 5. | Write an essay on Darwinism. | | 58 |
| 6. | Give an account of evolution of man. | | 75 |
| 7. | Explain the boundary and sub regions of Australian realm with its characteristic fauna. | | 87 |
| 8. | What is neoteny ? Discuss its role in evolution. | ..... | 81 |
| | <i>Or</i> , Describe in detail orthogenesis giving suitable examples. | ..... | 82 |

ZOOLOGY - 6 (Hons.) (2020)

Group - A

- | | | | |
|----|---|-------|----|
| 1. | What are plasmids ? Explain the role of plasmids in recombinant DNA technology (RDT). | ..... | 18 |
| 2. | Describe the process of DNA fingerprinting. | ..... | 20 |
| 3. | Discuss the role of Type-I, Type-II and Type-III restriction enzymes in recombinant DNA technology. | | |
| 4. | Write notes on any two of the following : | | |
| | (a) Epitope | ..... | 52 |
| | (b) Hapten | ..... | 52 |
| | (c) Inflammation | ..... | 53 |
| | (d) Vaccination | ..... | 54 |

Group - B

- | | | | |
|----|---|-------|----|
| 5. | Write an essay on Lamarckism. | ..... | 55 |
| 6. | Define species according to "Biological species concept" and describe the mechanism of speciation. | ..... | 65 |
| | <i>Or</i> , Give an account of allopatric speciation. | ..... | 68 |
| 7. | Trace the evolution of Horse. | ..... | 72 |
| 8. | Explain the boundary and sub-regions of Oriental realm and describe its characteristics and faunal diversity. | ..... | 91 |

ZOOLOGY - 6 (Hons.) (2019)

Group-A

- | | | | |
|----|--|-------|----|
| 1. | Enumerate the role of biotechnology in human welfare. | ..... | 5 |
| 2. | What are cloning vectors ? Explain the role of cosmids and shuttle vectors in genetic engineering. | ..... | 15 |
| 3. | Give an account of antigen-antibody interactions. | ..... | 29 |
| 4. | Describe the various types of immune responses. | ..... | 33 |

Group-B

- | | | | |
|----|---|-------|----|
| 5. | Write an essay on Darwin's theory of natural selection and origin of species. | ..... | 58 |
| 6. | Explain Hardy - Weinberg law of equilibrium with salient features and examples. | ..... | 70 |
| 7. | What do you mean by zoogeographical realms? Give an account of characteristics and faunal diversity of Ethiopian realm. | ..... | 83 |
| 8. | Trace the evolution of modern man. | ..... | 75 |



Rekha V.V.I. Questions for 2022 Examination

*Answer of below mentioned V.V.I. questions are present in your
Rekha Guess Paper Part-III Zoology-7*

Group–A
Medical Zoology

1. Define pathogenic disease. Give two examples of pathogenic viruses and explain the disease caused by them. **V. V. I.** 5
2. Explain the characters of bacteria. Name important bacteria found in human and diseases caused by them. 8
3. Describe the structure and life cycle of Plasmodium (or, Plasmodium vivax.) 12
4. Describe the morphology, life cycle and pathogenicity of the causative organism of Kala Azar. **V. V. I.**
Or, Describe the structure, life history and pathogenicity of Leishmania donovani. 14
5. Describe the morphology and life cycle of the parasite causing filariasis in man.
Or, Give an account of structure, life cycle and control (pathogenicity) of Wuchereria bancrofti. **V. V. I.** 17
6. Describe the morphology and life cycle of the parasite causing hookworm disease.
Or, Give an account of the structure, life cycle and pathogenicity of Ancylostoma duodenale. **V. V. I.** 21
7. Give an account of aetiology, occurrence and eradication measures of small pox. 26
8. What is AIDS ? Explain the salient features and life cycle of the causative agent of AIDS and suggest preventive measures. **V. V. I.** 28
9. How a person gets Hepatitis 'B' ? Explain the aetiology, treatment and control measure. 30
10. What is cancer ? Discuss the aetiology, prophylaxis and therapy of cancer.
Or, Describe an elementary idea of cancer cells. 32
11. Write short notes on the following :-
 - (i) Polio 35
 - (ii) Hepatitis B 36
 - (iii) Pathogenic Bacteria 37
 - (iv) Contraceptive Measures 38
 - (v) Ancylostoma Duodenale 38

Group-B
Economic Zoology

1. What is sericulture ? Give an account of sericulture in Bihar. 40
2. Write an essay on Apiculture practices in Bihar.
Or, Give an account of Apiculture in Bihar. V. V. I. 46
3. Give an account of Lac culture in Bihar. 51
4. Give an account of composite fish culture of carps in India. **VVI** 55
5. Describe the management of ponds for culture of Indian major carps.
Or, Give an account of induced breeding.
Or, Define induced breeding and describe its process with reference to major carps. 58
6. Name the important pests of paddy in Bihar and suggest its management and control measures.
Or, What are the important pests of paddy ? Describe their management and control measures. 64
7. Name important pests of wheat in Bihar and their chemical control measures.
Or, Name the important pests of wheat. Describe life-history and method of control of any one of them. V. V. I. 67
8. Give an account of the present status of Poultry in Bihar. **V. V. I.** 69
9. Write short notes on the following :- **V. V. I.**
 - (i) Composite Fish Farming (Polyculture)
Or, Composition Culture of Carp 70
 - (ii) Major Fowl Breeds and their Common Disease 71
 - (iii) Biology of Vectors
Or, Biological Vector 72
 - (iv) Pond Management for Fish Culture 73
 - (v) Rearing and Cocoon Production of Silkworm 73
 - (vi) Mulberry Silk Production in India 74
 - (vii) Qualities of Culturable Fishes 75
 - (viii) Pest Management 75
 - (ix) Bee Dance 76
 - (x) Pests of Rice 77
 - (xi) Structure of Lac Insects 77
 - (xii) Division of Labour in Bees 78
 - (xiii) Lac Culture 79
 - (xiv) Control Measures of Biological Vectors 80



ZOOLOGY - 7 (Hons.) (2021)

Group – A

- | | |
|---|----------|
| 1. Describe the life cycle of Plasmodium vivax. | 12 |
| 2. Give an account of aetiology, occurrence and eradication of small pox. | 26 |
| 3. Define cancer. Explain its aetiology, prophylaxis and therapy. | 32 |
| 4. Write short notes on any three of the following : | |
| (a) Hepatitis B | 36 |
| (b) Ancylostoma duodenale | 38 |
| (c) Contraceptive measures | 38 |
| (d) Polio | 35 |
| (e) Pathogenic bacteria | 37 |

Group – B

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|---|----------|
| 5. Give an account of sericulture. | 40 |
| 6. Name the important pests of paddy and describe its management and control measure. | 64 |
| 7. Define Induced breeding and describe the process with reference to major carps. | 58 |
| 8. Write short notes on any three of the following– | |
| (a) Major Fowl breeds. | 71 |
| (b) Lac. Culture | 79 |
| (c) Composite culture of carps. | 70 |
| (d) Control measure of biological vectors. | 80 |
| (e) Pond management. | 73 |

ZOOLOGY - 7 (Hons.) (2020)

Group–A

- | | |
|---|----------|
| 1. What are pathogenic diseases? Give two examples of pathogenic viruses and explain the diseases caused by them. | 5 |
| 2. Give an account of structure and life cycle of Wuchereria bancrofti. | 17 |
| 3. Describe the structure, life history and pathogenicity of Leishmania donovani. | 14 |
| 4. What is AIDS? Explain salient features and life cycle of causative agents of AIDS and suggest preventive measures. | 28 |

Group- B

- | | |
|---|----------|
| 5. Give an account of apiculture in Bihar. | 46 |
| 6. Name the important pests of wheat and describe their control measures. | 67 |
| 7. Give an account of composite fish culture of carps in Bihar. | 55 |

8. Write notes on any two of the following :
- | | |
|-------------------------------------|----------|
| (a) Structure of lac insects | 77 |
| (b) Biological vectors | 72 |
| (c) Pond management of fish culture | 73 |
| (d) Cocoon production of silk worm. | 73 |

ZOOLOGY - 7 (Hons.) (2019)

Answer five questions selecting at least two from each Group.

Group-A

- | | |
|--|----------|
| 1. Explain the characters of bacteria. Name important bacteria found in human and diseases caused by them. | 8 |
| 2. Describe the structure and life-cycle of Plasmodium. | 12 |
| 3. Give an account of the structure and life cycle of Ancylostoma duodenale. | 21 |
| 4. Discuss aetiology, prophylaxis and therapy of cancer. | 32 |

Group- B

- | | |
|--|----------|
| 5. What is sericulture ? Give an account of sericulture in Bihar. | 40 |
| 6. What are the important pests of Paddy? Describe their control measures. | 64 |
| 7. Give an account of the present status of Poultry in Bihar. | 69 |
| 8. Write notes on any two of the following : | |
| (a) Pest management | 75 |
| (b) Bee dance | 76 |
| (c) Division of labour in bee | 78 |
| (d) Pests of rice | 77 |

