

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FOURTH SEMESTER EXAMINATION, MAY 2018

SECOND YEAR [BATCH 2016-19]

ZOOLOGY (General)

Paper : IV

Date : 25/05/2018

Time : 11 am – 1 pm

Full Marks : 50

[Use a separate Answer Book for each Group]

Group - A

1. Answer **any five** questions : [5×2]
 - i) Define carp and cite an example (scientific name) of an exotic major carp?
 - ii) What is ovaprim?
 - iii) What do you mean by IPM?
 - iv) What is voltinism?
 - v) Comment on the advantages and disadvantages of biological control. [1+1]
 - vi) Draw and label various parts of a silk gland and its accessory structures.
 - vii) What is “Royal Jelly”? What is beeswax? [1+1]
2. Answer **any two** questions : [2×5]
 - a) Differentiate between penaeid and non-penaeid prawns. Describe briefly the process of extraction of commercial lac. Write the scientific name of a fresh water pearl oyster. [2+2+1]
 - b) Mention the names of different types of silk worms? Write a short note on Pebrine disease. [3+2]
 - c) Describe inoculation and swarming in lac culture? Describe the three lac products and their uses. [1·5+1·5+2]
 - d) Describe the deep litter system of poultry rearing. Name two parasitic diseases of poultry and their prevention. [3+2]
 - e) Elaborate ‘Economic threshold level’ and ‘Economic injury level’. Enumerate their importance in insect pest control. [3+2]

Group - B

3. Answer **any five** questions : [5×2]
 - i) Define Zoological Classification and Zoological Nomenclature.
 - ii) What is Alpha Taxonomy?
 - iii) Define biological species concept.
 - iv) What is Hyperparasitism?

- v) Differentiate between biotrophs & necrotrophs.
- vi) Describe the anatomical adaptations of camel in desert environment.
- vii) What is DNA vaccine.
- viii) Explain the Hardy-Weinberg Law briefly.

4. Answer **any two** questions : [2×5]
- a) Write names of the major zoo-geographical realms. Mention the physical features of the realm in which India is included. [4+1]
 - b) What is an “Ecological species”? What do you mean by ‘Phenetics’ and ‘Cladistics’? Mention major ‘Volant adaptive features’ present in birds. [1+1+3]
 - c) Define phenon and taxon with examples. Write the importance of parentheses while writing a binomial nomenclature. [3+2]
 - d) In a population of 300 individuals, a particular phenotype (X) of an individual is determined by two alleles a^+ and a . a^+ is dominant over a . The number homozygous dominant individuals 160, heterozygous is 100 and homozygous recessive is 40. Calculate the frequency of a^+ and a in the population. What is industrial melanism? [3+2]
 - e) Why spontaneous origin of life ceased after the emergence of photoautotrophs? Justify mathematically that due to immigration the extent of frequency change of any particular allele is dependent upon the number of immigrants and the difference of frequency between the two populations. [2+3]
5. Answer **any two** questions : [2×5]
- a) What are precipitation and agglutination reactions? Mention different techniques of these two. [2+3]
 - b) What is active immunization? Write the three approaches of designing a vaccine. [2+3]
 - c) Illustrate the life cycle of *Fasciola hepatica* with a suitable diagram. [4+1]
 - d) State briefly the pathogenicity of *Entamoeba histolytica*. [5]
 - e) Briefly describe the basic structure of an antibody. Distinguish between commensalism and symbiosis. [3+1+1]

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