

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FOURTH SEMESTER EXAMINATION, MAY 2017

SECOND YEAR [BATCH 2015-18]

ZOOLOGY (General)

Paper : IV

Date : 27/05/2017

Time : 11 am – 1 pm

Full Marks : 50

[Use a separate Answer Book for each group]

Group – A

1. Answer **any five** questions among the following: [5X2]
 - i) What is EIL? Distinguish between male and female *Scirpophaga incertulus*. 1+1
 - ii) Write the scientific name of Tasar Silk worm. Name an indigenous breed of fowl. 1+1
 - iii) Mention the causative agent and symptoms of pullorum disease. 2
 - iv) State the difference between penacid and palaemonid group. Name a minor carp and an exotic carp in India. 1+1
 - v) Write the scientific names of two major host plants of lac insect. 2
 - vi) What is super? What are the different phases of IPM? 1+1
 - vii) What is induced breeding? Why is it essential? 1+1
 - viii) Define brood disease with its symptoms. 2
2. Answer **any two** questions: [2X5]
 - a) Mention the chemical components of sericin. Name one bacterial disease of silk moth with its causative agent and symptoms. 2+3
 - b) State the scientific names of fresh and marine water pearl oysters. Briefly describe the method of inoculation of lac insect into new branches of host plants. 2+3
 - c) Enumerate the scientific principle of polyculture. How “breeding hapa” and “hatching hapa” are prepared? 2+1½+1½
 - d) Illustrate the importance of IPM in agro-ecosystem. What are the advantages of IPM? 2½+2½
 - e) Write short notes on **any two**: [2X2½]
 - (i) Damage and control of *Scirpophaga incertulus*.
 - (ii) Swarming
 - (iii) Damages caused by *Bandicota bengalensis*.

Group – B

3. Answer **any five** questions: [5X2]
 - i) Distinguish between microtaxonomy and macrotaxonomy. 2
 - ii) What is ‘Wallace Line’? Name one endemic salamander found in India. 1+1
 - iii) Define the terms (a) agglutinin (b) precipitin. 1+1
 - iv) What roles do F_c & F_{ab} regions play in an immunoglobulin molecule? 2
 - v) What are ‘flippers’ and ‘blubbers’? 1+1
 - vi) What is commensalism? How does it differ from mutualism? 1+1
 - vii) What is ‘hot dilute soup’? Who coined the term first? 1+1
 - viii) What are Schüffner’s and Maurer’s dots? 1+1

4. Answer **any two** questions: [2X5]
- 'High avidity can compensate low affinity' – justify with an example. Enumerate the major function of each immunoglobulin class. $2\frac{1}{2}+2\frac{1}{2}$
 - Mention advantages and disadvantages of attenuated vaccine compared with the heat killed (hk) vaccine. What is complementation? Name its different pathways. $3+1+1$
 - Write a note on prebiotic condition on early earth. 5
 - What is amoebiasis? State the characteristic features of *Entamoeba histolytica* trophozoite. What is excystation? $1+3+1$
 - Describe the mode of infection by *Fasciola hepatica*. Mention the significance of rhabditiform larva. $3+2$
5. Answer **any two** questions: [2X5]
- How would you determine that a population is in genetic equilibrium? Name the factors which do stabilize genetic equilibrium. What is patagium in bat? Who are secondary aquatic forms? $2+1+1+1$
 - Define exocrythrocytic stage and schizogony in *Plasmodium*. What is a vestigial organ? State its significance. $2+1+2$
 - What is the frequency of heterozygote Aa in a random mating population, if the frequency of recessive phenotypes (aa) is 0.09? Define polytypic species with an example. $3+2$
 - What is downward classification? Define taxon and phenon. $2+(1\frac{1}{2}+1\frac{1}{2})$
 - "IgM is more efficient than other Ig isotypes in binding multidimensional antigens like virus and RBC" – justify with reason. Where from IgA & IgD are secreted? $4+1$

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