

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FIRST SEMESTER EXAMINATION, DECEMBER 2017

FIRST YEAR [BATCH 2017-20]

ZOOLOGY [General]

Paper : I

Date : 20/12/2017

Time : 11 am – 1 pm

Full Marks : 50

[Use a separate Answer Book for each Group]

Group – A

1. Answer **any five** questions: 5 X 2
- (i) *Myxidium* & *Paramoecium* belong to the phyla _____ & _____ respectively. 1+1
- (ii) Mention four major characteristic features of the phylum Apicomplexa. 2
- (iii) Distinguish between monaxon & triaxon types of spicules. 2
- (iv) What is a fire coral? Justify whether it is a true coral or not. ½+1½
- (v) What is statocyst? State its location. 1+1
- (vi) State the function of green gland and in which group do we find this organ? 1+1
- (vii) Write major identifying characters of the class Cephalopoda? 2
- (viii) Why *Pila* sp. can live both in land and water? 2
2. Answer **any two** questions: 2 X 2½
- (a) Mention unique features of the class Demospongiae with suitable examples.
- (b) State the structure and function of a book lung. 1½+1
- (c) Mention at least four differences between the classes Trematoda and Cestoda with examples.
- (d) What is streptoneury condition?
- (e) Describe the ultrastructure of cilia (*Paramoecium* sp.).
3. Answer **any two** questions: 2 X 5
- (a) Justify the systematic position (till class) of *Pila* sp. and *Nereis* sp. 2½+2½
- (b) With the help of diagrams explain the conjugation process of *Paramoecium* sp.
- (c) What is a Flame cell? With the help of a flow chart describe the process of excretion in cockroach. 1+4
- (d) Describe the open circulatory system of cockroach with a neat diagram. 3+2
- (e) Justify the systematic position of *Pennatula* with reasons. State the differences between Polyp & Medusa. 3+2

Group – B

4. Answer **any five** questions: 5 X 2
- (i) What is GERL system? Mention its two major functions. 1+1
- (ii) Compare euchromatin and heterochromatin.
- (iii) Name the gene which is instrumental in Human sex determination. Point out its role in such process. 1+1
- (iv) Why Lysosomes are known as “suicidal bags of the cell”?
- (v) What is Pribnow box?
- (vi) What is OriC?
- (vii) Define frameshift mutation.
- (viii) What is polysome?

5. Answer **any two** questions: 2 X 2½
- (a) Write the properties of genetic code?
 - (b) Write a brief note on prokaryotic translation pre-initiation complex.
 - (c) Describe the cause and effect of Down syndrome. 1½+1
 - (d) What are intersex & super male in *Drosophila* sp.? 1+1½
 - (e) Describe A-DNA, B-DNA & Z-DNA. 1+1+½
6. Answer **any two** questions: 2 X 5
- (a) Distinguish between complete linkage & incomplete linkage. Define 'Coupling' & 'Repulsion' with examples. 1½+3½
 - (b) What do you mean by restriction endonucleases? State their role in gene cloning. 2+3
 - (c) Which observations during Meselson-Stahl experimentation proved that DNA replication is semi-conservative. Justify your proposition. 5
 - (d) Explain nucleosome model with a suitable diagram. What is colour blindness? If a colour blind male marries a carrier female, what is the probability of their female child to be colour blind? 2+½+2½
 - (e) Name the three major cell cycle check points. Write the function of G₁ check point. How does MPF (Maturation-promoting factor) regulate a cell cycle? 1½+1+2½

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