

(6 pages)

Reg. No. :

Code No. : 6404

Sub. Code : HZOE 11

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2013.

First Semester

Zoology

Elective — BIOSYSTEMATICS AND BIODIVERSITY

(For those who joined in July 2012 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. The improvement of economic plants with the discovery and variety and the production of new plants of economic value is concerned with ———
(a) economic botany (b) anatomy
(c) plant breeding (d) mutation
2. Four inbreed lines of maize are crossed. The cross is ———
(a) double cross (b) dihybrid cross
(c) tetraploid cross (d) tetrahybrid cross.

3. Classification deals with ———
(a) Naming, identification and grouping of organisms
(b) Identification of organisms
(c) Arranging organism into groups
(d) Arranging organisms in bacteria and museums.
4. The term taxomnomy was coined by ———
(a) Linnaeus (b) De Candolle
(c) Theophrastus (d) Aristotle
5. Taxonomy is important in agriculture because it helps in ———
(a) identification of pathogens
(b) identification of plant pests
(c) identification of weeds
(d) all of the above
6. Classification based on chromosome study of organism is
(a) experimental taxonomy
(b) biochemical taxonomy
(c) numerical taxonomy
(d) karyo taxonomy.



7. New systematic differs from classical systematic in employing —————

- (a) Numerical taxonomy
- (b) Experimental taxonomy
- (c) Bio-chemical and cytotaxonomy
- (d) All biological characters.

8. ICBN is connected to —————

- (a) Correct nomenclature of plants
- (b) Correct nomenclature of animals
- (c) Correct nomenclature of biochemical's
- (d) All of these

9. Cladistics is related with —————

- (a) Phylogeny
- (b) Numerical taxonomy
- (c) Cytotaxonomy
- (d) None of these

10. Father of taxonomy is —————

- (a) John Ray (b) Linnaeus
- (c) Aristotle (d) Darwin

Page 3 **Code No. : 6404**

PART B — (5 × 5 = 25 marks)

Answer ALL the questions choosing either (a) or (b).

11. (a) Distinguish between holotype and paratype.

Or

(b) Describe the importance and application of biosystematics in biology.

12. (a) List four differences between protostomes and deuterostomes.

Or

(b) Write a short note on lineage and describe the types and change of lineage.

13. (a) Huxley called birds as "Glorified Reptiles". Substantiate this statement.

Or

(b) Comment on the origin of reproductive isolation.

14. (a) Give a brief account on the significance of trocophore.

Or

(b) Distinguish between chondrichthyes and osteichthyes.

Page 4 **Code No. : 6404**
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15. (a) Distinguish between evenness index and richness index.

Or

- (b) Explain the current theory in ecosystem process.

PART C — (5 × 8 = 40 marks)

Answer ALL the questions choosing either (a) or (b).

16. (a) Discuss the differences of Cladistics and typological approach in systematics.

Or

- (b) Describe the following terms with suitable example.

- (i) Chemotaxonomy
- (ii) Molecular taxonomy.

17. (a) What is a species? Discuss the merits and demerits of different definitions of species. Comment on the taxonomic diversity within species.

Or

- (b) Briefly describe the structural and functional adaptations of fishes for aquatic life.

Page 5 Code No. : 6404

18. (a) Discuss the different kinds of taxonomic characters.

Or

- (b) Write a brief essay on biological mechanism of genetic incompatibility.

19. (a) Describe taxonomic collection, preservation and curation process of identification.

Or

- (b) Comment on the phylogenetic position of molluscs among invertebrates and describe molluscan adaptive radiation.

20. (a) How can we measure the value of diversity?

Or

- (b) Describe the difference between background, mass and anthropogenic extinctions in diversity and ecosystem process.

Page 6 Code No. : 6404

