(7 pages) **Reg. No. :** .....

Code No. : 9434 **Sub. Code : HZOM 43**

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2015.

Fourth Semester

Zoology

EVOLUTION

(For those who joined in July 2012 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. The important experiment on the prebiotic synthesis of organic compounds was performed by
   (a) Fox and Horada
   (b) Haldane and Berna
   (c) Ponnamperuma and Mariner
   (d) Miller

2. Which of the following methods is used for dating of fossils?
   (a) The lead method
   (b) The radio-carbon method
   (c) The rubidium-strontium method
   (d) All the above methods

3. What is the difference between natural selection and sexual selection?
   (a) Sexual selection occurs during sex
   (b) Natural selection is a type of sexual selection
   (c) Sexual selection is a type of natural selection
   (d) Sexual selection occurs within demes, natural selection does not

4. Darwin's and Lamark's theories are similar in that they both
   (a) Depend on information about the characteristics of organisms being passed from parent to offspring
   (b) Rely on parents being able to alter the characteristics of their offspring
   (c) State that evolution depends on changes in the environment
   (d) State that evolution happens very rapidly

5. Evolution that results from changes at the genetic level is called

(a) Allelic change

(b) Microevolution

(c) Macroevolution

(d) Species evolution

6. A gene pool is the

(a) Early primordial soup

(b) All alleles of all genes of all individuals in a population

(c) Accumulation of mutations in small populations

(d) Genetic set that identifies a species

7. Which of the following is an example of convergent evolution?

(a) Similar bones in the forelimbs of horses and bats

(b) Similar body shape of dolphins and fish

(c) Different beak shapes of Galapagos finches

(d) Similar plant species on islands and the nearest continent

8. Which of the following is not a cause of extinction?

(a) Changes in the environment

(b) Mutation

(c) New diseases

(d) New predators

9. Which of the following supports the statement that *Homo sapiens* evolved independently in different regions from distinctive populations of early humans?

(a) Out of Africa hypothesis

(b) Multiregional hypothesis

(c) Mosaic evolution

(d) Natural selection

10. The fossils of Cro Magnon man was discovered in

(a) France (b) India

(c) Africa (d) China

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Describe the concept of abiogenesis.

Or

(b) Explain the origin of first cell.

12. (a) Discuss the use and disuse theory of Lamarck.

Or

(b) Explain evolution with taxonomic evidences.

13. (a) "Variation is the raw material for evolution" — Discuss.

Or

(b) Bring out the differences between allopatric and sympatric speciation.

14. (a) Write notes on Quantum evolution.

Or

(b) Describe the theory of punctuated equilibrium.

15. (a) Comment on the stages of primitive evolution.

Or

(b) Write notes on future man.

PART C — (5 × 8 = 40 marks)

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

Answer should not exceed 600 words.

16. (a) Write an essay on the biochemical origin of life.

Or

(b) Give an account on the origin and evolution of eukaryotes.

17. (a) Comment on the types and the importance of fossils.

Or

(b) With the evidences from comparative physiology and biochemistry explain organic evolution.

18. (a) State the Hardy-Weinberg law and discuss its significance.

Or

(b) Discuss the role of isolating mechanisms in speciation.

19. (a) Illustrate macro evolution.

Or

(b) Write a detailed account on the connecting link between reptiles and birds.

20. (a) Explain how to read a phylogenetic tree?

Or

(b) Describe in detail about the cultural evolution of man.
