2M2M17239 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Second Semester M.Sc Zoology Degree Examination, March 2017

ZO2CT05 – Molecular Biology

(2016 Admission onwards)

Max. Time: 3 hours Max. Weightage : 36

I. Answer all *fourteen* questions (Weightage-1)

1. What is CAAT box
2. Highlight the features of Type-I restriction enzymes
3. What is hybrid dysgenesis
4. Write short notes on immuno therapy
5. What is miRNA? Mention its function
6. Write short notes on the composition of Prokaryotic ribosome
7. Write short notes on Satellite DNA
8. What is Cot value? Mention its significance
9. Enlist any four features of Genetic code
10. What is sexduction
11. Name two inhibitors of prokaryotic translation. Mention their actions
12. What is Pseudogene
13. What are tumour suppressor genes? Mention two examples
14. What are chaperones? Mention their role

(14 x 1 = 14 weightage)

II. Answer any *seven* questions (Weightage-2)

15. Explain Wobble hypothesis.
16. Describe the characteristic features and functions of Eukaryotic RNA polymerases.
17. Explain rolling circle model of DNA replication
18. Write notes on Transposons in Maize
19. Describe the organization of rRNA genes in Xenopus
20. Discuss the special features of human mitochondrial genome
21. Write notes on telomerase and its role
22. Describe the process of Capping in post transcriptional modification of eukaryotic mRNA
23. Briefly write about alteration of cell cycle regulation in cancer
24. Describe the process of aminoacylation of tRNA

(7 x 2 = 14 weightage)

III. Answer any *two* questions (Weightage-4) .

25. Describe different methods of DNA repair

26. What are interrupted genes? Give an account of evolution of interrupted genes

27. Describe the basic features of an inducible operon with suitable example

28. Explain the molecular mechanisms involved in homologous recombination of DNA in eukaryotes. Add a note on the role of Rec A protein in genetic recombination

(2 x 4 = 8 weightage)

1M2M17240 (Pages : 1) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Second Semester M.Sc Zoology Degree Examination, March 2017

ZO2CT06 – Systematics & Evolution

(2016 Admission onwards)

Max. Time: 3 hours Max. Weightage : 36

I Answer all 14 questions (each question carries 1 weightage)

1. Law of priority
2. Gamma taxonomy
3. Typological species concept
4. Synonym
5. Curation
6. Sexy son hypothesis
7. Taxonomic characters
8. Numerical taxonomy
9. Molecular clock
10. Good genes hypothesis
11. Neutral theory of molecular evolution
12. Y – Chromosomal Adam
13. Orthologus evolution
14. Differentiate between intra and inter sexual selection

(1×14 = 14 weightage)

II. Short essay (Answer any 7 questions)

15. . Comment on applications of taxonomy in biodiversity conservation and agriculture
16. Write on the role of DNA bar-coding in modern taxonomy
17. ExplainTaxonomic impediments
18. What are the different types of taxonomic publication .
19. Briefly explain different types in descriptive taxonomy
20. Explain the importance of Punctuated equilibrium and gradualism in evolution
21. Differentiate between gradualism and punctuated equilibrium
22. Speciation of human and African Apes
23. Explain stabilizing selection
24. Explain collapse of Orthogenesis

(7×2=14 weightage)

III. Long essay (Answer any 2 questions)

25. Explain the Ethics related to taxonomy
26. Explain International code of zoological nomenclature
27. Write an essay on mechanism of natural selection
28. Explain different stages in primate evolution

(2×4=8weightage)