2M2M19117 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Second Semester M.Sc Zoology Degree Examination, March /April 2019

MZOL2B04 – Molecular Biology

(2018 Admission onwards)

Time: 3 hours Max. Weightage

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

1. What are Okazaki fragments
2. Write short notes on highly repetitive DNA
3. What is TATA box
4. Distinguish between missense and nonsense mutation
5. What is simple multigene family? Give an example
6. Distinguish between transduction and transformation
7. What is mismatch repair
8. Write short notes on aminoacyltRNAsynthetase
9. What do you mean by lysogenic cycle of bacteriophage lambda
10. Enlist any four features of interrupted genes
11. Distinguish between SINE and LINE
12. Write short notes onRNA editing
13. Write about the composition of eukaryotic ribosome
14. Name the structural genes and their products in Lac operon

(14 x 1 = 14 weightage)

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

15. Briefly explain SOS response
16. Describe the process of conjugation in bacteria.
17. Explain the role of chaperons in post translational modification of proteins
18. Explain D-loop model of DNA replication
19. Discuss the special features of human mitochondrial genome
20. Explain the concept of evolutionary clock
21. With suitable examples explain the role of tumour suppressor genes
22. List out the differences between prokaryotic and eukaryotic translation
23. Discuss the role of siRNA in the regulation of gene expression
24. Describe the mechanism of mRNA transport

(7 x 2 = 14 weightage)

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

25. Give an account of various enzymes and proteins involved in DNA replication
26. Write an essay on post transcriptional modification of eukaryotic mRNA
27. What are transposons? Give an account of mechanism of transposition and transposons in prokaryotes
28. Give an account of characteristic features of geneticcode. Add a note on the differences exhibited by mitochondrial genetic code.

(2 x 4 = 8 weightage)

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2M2M19118 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Second Semester M.Sc Zoology Degree Examination, March /April 2019

MZOL2B05 – Ecology & Ethology

(2018 Admission onwards)

Time: 3 hours Max. Weightage :

I Answer *all* questions

1. Define 'conditioning'.
2. What is 'rarefaction curves'?
3. Explain reafference theory.
4. What is 'trial and error learning'?
5. What is a 'keystone species'?
6. What are the key features of Tropical grasslands?
7. Comment on ecological modeling.
8. What is mean by 'structure' and 'function' of ecosystem?
9. What is mean by carbon budget?
10. Define 'carrying capacity'.
11. What is niche width and niche overlap?
12. Comment on 'ecotone' and 'edge effect'
13. Explain climax pattern theory.
14. Comment on SLOSS concept.

(14 x 1 =14 weightage)

II Answer any *seven* questions

15. Explain 'ritualization'
16. Explain characteristic features of r-selected and k-selected species with examples.
17. Explain conservation value of wetland ecosystems.
18. Discuss 'Project Tiger' as conservation strategy.
19. What are 'Ethograms'? Explain their significance.
20. Explain different types of "population growth curves".
21. Write about parental investment and reproductive success.
22. Write notes on 'cultural transmission' of behavior.
23. Critically analyze 'man and biosphere program'.
24. Explain spatial patterning of biodiversity along latitudinal gradient.

(7 x 2 = 14 weightage)

III Answer any *two* question

25. Discuss different kinds of species interactions existed in nature. Explain how these interactions enhance their survival and fitness.
26. Explain in detail about different biogeographical zones of India with geographical. faunal and floral characteristics.
27. Describe navigation and migration in organisms.
28. Write an essay on social behavior of termites. Add note on how it increase their fitness.

(2 x 4 = 8 weightage)

2M2M19119 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Second Semester M.Sc Zoology Degree Examination, March /April 2019

MZOL2B06 – Developmental Biology & Endocrinology

(2018 Admission onwards)

Time: 3 hours Max. Weightag

I. Answer all fourteenquestions (Weightage-1)

1. Induction
2. Morphogenetic gradient
3. Cellular ageing
4. Silencers
5. Dorsal protein gradient
6. Realisator gene
7. Pheromones
8. Environmental oestrogen
9. HCG
10. Specification
11. Inner cell mass
12. Embryonic field
13. Eicosanoids
14. Hormones of adrenal gland

(14 x 1=14 weightage)

II. Answer any seven questions (Weightage-2)

15. Explain how gases can act as neural messengers.
16. Describe histological process during regeneration.
17. Comment on hormone secreting tissues.
18. Describe the hormonal control of insect metamorphosis.
19. Explain the role of cell surface molecules in sperm-egg recognition in animals.
20. Give an account on vulva formation in *Caenorhabditi selegans*.
21. Describe the physiological roles of ovarian steroid hormones.
22. Explain the cellular changes during blastulation.
23. Describe the dorso-ventral patterning in *Drosophilla*.
24. Explain the process of gastrulation and formation of germ layers in amphibians.

(7 x2=14 weightage)

III. Answer any two questions (Weightage-4)

25. Write an essay on axis formation in amphibians.
26. What is teratogenesis? Describe the effect of different teratogenic agents
27. With reference to hypothalamus and pituitary, describe the anatomy, physiological functions and their hormonal control.
28. Write an essay on synthesis, chemistry, metabolism and functions of hormones in female reproductive system

(2 x 4=8 weightage