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2M2M21450 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Second Semester M.Sc Degree Examination, March/April 2021

MZL2C04 – Molecular Biology

(2020 Admission onwards)

Time: 3 hours Max. Weightage : 30

I. Answer any eight questions (Weightage – 1)

1. Write notes on C- value.
2. Explainframe shiftmutation.
3. What areconsensus sequences?
4. What are the special features of mitochondrial genome?
5. Write notes on any two inhibitors of translation.
6. Distinguish between Promoter and Enhancer.
7. What is transcription factor? Cite example.
8. What is the role of snRNAs in RNA splicing?
9. What is the role of Rho-factor in transcription?
10. Comment on prokaryotic RNA Polymerase.
11. Differentiate sense and nonsense strands of DNA?
12. Comment on Bacterial transduction.

(8 x 1 = 8 weightage)

II. Answer any four questions (Weightage – 3)

13. Explain Globin gene family and its evolution.
14. Write notes on genetic code.
15. Write short note on RNAsplicing.
16. Explain different types of DNA replication.
17. Explain special features of yeast mitochondrial genome.
18. Describe the structure of RNA Polymerase and Promoter in prokaryotes.
19. Write notes on composition of Ribosomes in prokaryotes and eukaryotes.

(4 x 3 = 12 weightage)

III. Answer any two questions (Weightage – 5)

20. Explain in detail about transcription in Prokaryotes.

21. Differentiate translation in prokaryotes and eukaryotes.

22. Describe the different mechanisms of genetic transfer in Bacteria.

23. Write an essay on development of Cancer.

(2 x 5 = 10 weightage)

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2M2M21451 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Second Semester M.Sc Degree Examination, March/April 2021

MZL2C05 – Ecology & Ethology

(2020 Admission onwards)

Time: 3 hours Max. Weightage : 30

I. Answer any *eight* questions (Weightage - 1)

1. Differentiate decomposers and detritivores
2. Characteristics of *r*-selected species
3. Allelopathy
4. Secondary succession with example
5. Species area hypothesis of Island biogeography
6. Ecological modeling
7. Supernormal stimuli
8. Circadian rhythm
9. Inclusive fitness
10. Phoresy and inquilinism
11. Different types of food webs
12. Guild

(8 x 1 = 8 weightage)

II. Answer any *four* questions (Weightage - 3)

13. Explain resource partitioning and character displacement with suitable examples
14. Modes of defenses the plant exhibits to prevent herbivory
15. What are edges? Write a note on the characteristics and biodiversity of ecotones
16. Elaborate the significance and applications of molecular ecology in present scenario
17. Write a note on parental investment and reproductive success
18. Briefly explain the neural basis of sleep and arousal
19. Comment on the social behaviour of termites and write a note on the behavioural advantages of living in a group

(4 x 3 = 12weightage)

III. Answer any *two* questions (Weightage - 5)

20. Give an account on population curves. How does a density dependent factor differ from a density independent factor?
21. Write an essay on the environmental issues and the anthropogenic pressure on global climatic change
22. Give an account on the ecological conservation and management strategies in India citing case studies with special emphasis on project tiger and the current status of the tiger population in India
23. How do temperature differentials affect biome type? Elaborate on the savannah and Prairie

(2 x 5 = 10weightage)

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2M2M21452 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Second Semester M.Sc Degree Examination, March/April 2021

MZL2C06 – Developmental Biology & Endocrinology

(2020 Admission onwards)

Time: 3 hours Max. Weightage : 30

I. Answer any eight questions (Weightage – 1)

1. What is embryonic field?
2. Distinguish between differentiation and determination.
3. Comment on splicing isoforms.
4. What is Hox code hypothesis?
5. Write on histones as an activation switch in development.
6. Comment on environmental sex determination
7. Give short note on mitochondrial genome damage.
8. Comment of functions of thyroid gland secretions.
9. Write a brief note on eicosanoids.
10. Comment on endorphins.
11. Write on neurotransmitters.
12. Comment on physiological functions of pancreatic secretions.

(8 x 1 = 8 weightage)

II. Answer any four questions (Weightage – 3)

13. Explain the RTK pathway.
14. Write on vulval induction in *Caenorhabditiselegans.*
15. Explain the causes of ageing.
16. Write on the types of polyphenisms.
17. Describe the actions of major teratogenic agents.
18. Describe the role of brain hormones in behaviour.
19. Write notes on hormonal regulation of female monthly rhythm.

(4 x 3 = 12 weightage)

III. Answer any two questions (Weightage – 5)

20. Give an account on the types of regeneration and the histological process during regeneration.
21. Write an essay on the strategies for differential gene expression in development.
22. Describe the structure, physiological functions and control of secretions of the hormones from hypothalamus and pituitary.
23. Write an essay on the mechanisms of hormone action.

(2 x 5 = 10 weightage)