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(Pages : 2)

Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Zoology Degree Examination, November 2021

BZL5B07T – Biotechnology, Microbiology & Immunology

(2019 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

Section A

I. Short answer questions. Each question carries 2 marks.

1. What are the different types of culture media?
2. Define cryopreservation.
3. What is a transgene? Provide example for any transgenic animal.
4. Mention RFLP and its application.
5. What is a cell line?
6. What are prions? Mention any two disease caused by prions.
7. Define the lyophilisation technique and its application.
8. What are bacteriophages? Differentiate them based on their mode of life cycle.
9. Write a note on the viral vaccines.
10. Name any two sexually transmitted diseases caused by bacteria.
11. What are secondary lymphoid organs?
12. What are haptens and their peculiarities?
13. What are CTLs? Mention their immunological roles.
14. Write a note on Bruton's Disease.
15. What is xenotransplantation?

(Ceiling: 25 marks)

Section B

II. Paragraph questions. Each question carries 5 marks

16. What is hybridoma technology? Mention the applications of hybridoma technology.
17. Define MHC. What are the roles of class I and Class II MHC molecules?
18. Describe the innate immunity and defense methods.
19. Describe the industrial applications of microorganisms.
20. What are the diseases caused by virus? Explain with suitable examples.
21. Explain the different molecular markers employed in medical and forensic biotechnology?
22. What are the major enzymes used in genetic engineering?
23. Mention the application of biotechnology in molecular diagnosis of genetic diseases.

(Ceiling: 35 marks)

Section C

III. Essay questions. Answer any *two* questions.

24. Describe the structure of an immunoglobulin with labeled diagram. List out the different types of immunoglobulins.
25. Explain the microbial growth phases and list out the factors affecting microbial growth.
26. Describe the structure and composition of a bacterial cell wall. Comment on the locomotive structures on them.
27. Explain the different transfection methods. Enlist the advantages and disadvantages of each method.

(2x10 = 20 marks)

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Time: 2 ½ ho

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Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Zoology Degree Examination, November 2021

BZL5B06T – Cell Biology & Genetics

(2019 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

SECTION A

I. Short answer questions. Each question carries 2 marks.

1. Mention Four differences between TEM and SEM.
2. Chromosome mutations.
3. Write a note on the significance of fixation.
4. Polygenic traits.
5. Describe the biogenesis of mitochondria.
6. Briefly explain Penetrance and Expressivity.
7. Explain Mercuric bromophenol blue method for the demonstration of proteins.
8. Sex-Influenced and Sex-Limited Characteristics.
9. Cell cycle check points.
10. Describe the structure of lampbrush chromosome.
11. Briefly describe multiple allelism with examples.
12. Incomplete linkage.
13. Give a brief description on lysosomal polymorphism.
14. Mutagenic agents.
15. Comment on Inheritance of Rh factor

(Ceiling: 25 marks)

Section B

II. Paragraph questions. Each question carries 5 marks

16. Explain the types of point mutation.
17. Compare the principle and uses of light microscope and electron microscope.
18. Briefly describe the biochemical composition and functions of microfilaments.
19. Describe the Patau's scheme of classification of human chromosomes.
20. Give an account on different stages in Prophase I of meiosis.
21. Give a description on the types and mechanism of crossing over.
22. Comment on characteristics of cancer cells.
23. What are the major problems related to blood group inheritance? Explain.

(Ceiling: 35 marks)

Section C

III. Essay questions. Answer any *two* questions

24. Describe the structure and functions of interphase nucleus.
25. Write an essay on non-allelic interactions of genes.
26. With suitable diagram describe the structure, chemical composition and functions of Plasma membrane.
27. Describe the various mechanisms of sex determination.

(2x10 = 20 marks)

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Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Zoology Degree Examination, November 2021

BZL5B08T – Biochemistry and Molecular Biology

(2019 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

Section A

I. Short answer questions. Each question carries 2 marks.

1. Give the structure of Glucose.
2. Explain the amphoteric properties of amino acids.
3. What is a steroid?
4. Distinguish coenzyme and co factor?
5. Define gluconeogenesis.
6. Name the enzymes involved in DNA replication.
7. What are house keeping genes?
8. Illustrate central dogma of molecular biology.
9. Give three examples of stop codons.
10. What are aminoacyl tRNA synthetases? Mention their function.
11. What are cryptic genes?
12. What is C-value paradox?
13. Explain transduction.
14. Mention diabetes Type I and II.
15. Discuss chemiosmotic synthesis of ATP

(Ceiling: 25 marks)

Section B

II. Paragraph questions. Each question carries 5 marks

16. Define Epimers with examples.
17. Give the structure and function of prostaglandins.
18. Discuss in detail about theories regarding enzyme specificity.
19. Explain β -oxidation of fatty acids.
20. Explain the positive control of trp operon.
21. Give a short account on regulatory genes.
22. Discuss about the sequence components of eukaryotic genome.
23. Give an account on post-transcriptional modification of hnRNA.

(Ceiling: 35 marks)

Section C

III. Essay questions. Answer any *two* questions.

24. Write an essay on the levels of protein structure with examples.
25. Describe the pathway of glycolysis.
26. Discuss semi conservative mode of DNA replication. Add a note on enzymes involved.
27. Explain in detail about conjugation in Bacteria.

(2x10 = 20 marks)

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Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Zoology Degree Examination, November 2021

BZL5B09T – Methodology in Science, Biostatistics & Bioinformatics

(2019 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

Section A

I. Short answer questions. Each question carries 2 marks.

1. What you meant by analogy
2. Write a notes on BLAST
3. Point out four application of microarray
4. Write notes on Single molecule sequencing.
5. What is the use of molecular docking?
6. What is OWL?
7. Differentiate Inductive and deductive reasoning
8. What are the types of proteomics?
9. Write notes on primary depository of scientific information.
10. Comment on peer review.
11. Point out the importance of statistics in life sciences
12. How do you determine a sample size?
13. Differentiate between mean and mode
14. Define standard error.
15. Explain the advantages and disadvantages of Mean deviation.

(Ceiling: 25 marks)

Section B

II. Paragraph questions. Each question carries 5 marks

16. Give an account on major steps in scientific methods.
17. Explain briefly the theories and laws in science
18. Explain the steps involved in designing an experiment?
19. Briefly discuss the measures of central tendency
20. Explain briefly pair wise and multiple sequence alignments
21. Write notes on molecular evolution
22. Differentiate between Entrez and SRS?
23. Explain the principle of 2D gel electrophoresis?

(Ceiling: 35 marks)

Section C

III. Essay questions. Answer any *two* questions.

24. What is biological database?, explain primary database with examples
25. What is Molecular Phylogenetics Explain in detail about the phylogenetic tree construction methods and programmes involved in it
26. Discuss in detail about the hypothesis formulation in scientific methods. Add a note on thought process in developing hypothesis.
27. Write an essay on graphical and diagrammatic representation of data with examples

(2x10 = 20 marks)

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Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Zoology Degree Examination, November 2021

(Open Course)

BZL5D01T – Reproductive Health and Sex Education

(2019 Admission onwards)

Time: 2 hours

Max. Marks: 60

SECTION A

I. Answer the following questions. Each carries *two* marks

1. What is STD?
2. Write note on Klinefelter's syndrome.
3. Give an account on oogenesis.
4. What are Barr bodies?
5. Write note on homosexuality.
6. What is ZIFT?
7. What are Contraceptive devices?
8. Write note on genital warts.
9. What is parturition?
10. Write note on amniocentesis.
11. List any four ethical aspects in healthy relationship with opposite sex.
12. What is POCSO Act 2012.

(Ceiling 20 Marks)

SECTION B

II. Answer the following questions in a paragraph. Each carries *five* marks

13. Discuss the importance of sex education among youth and teen.
14. Write note on importance of counseling.
15. Explain the chromosomal mechanism of sex determination.

16. Give an account on sexual myths.
17. Write a brief account on hormonal methods of fertility control.
18. Write note on female foeticide.
19. Give an account on Test tube baby technique and precautions.

(Ceiling 30 Marks)

SECTION C

III. Essay Question. Answer any *one* question.

20. Write an essay on Assisted Reproduction Technologies.
21. Explain the structure of Male reproductive system. Discuss the steps in spermatogenesis.

(1 × 10 = 10 Marks)

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Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Fifth Semester BA Degree Examination, November 2021
(Open Course - Physical Education)

BPE5D03 - Physical Activity Health and Wellness
(2019 Admission onwards)

Time: 2 hours

Max. Marks: 60

PART A

**All questions can be attended.
Each question carries 2 marks.**

1. Define balanced diet?
2. What is pranayama?
3. Elaborate the term RICE ?
4. What are the types of physical fitness ?
5. What is scoliosis?
6. Define physical Education?
7. Write names of any four standing asanas.
8. What is wellness?
9. What is diabetes?
10. Write down the first aid for wound and bleeding.
11. What do you mean by body composition?
12. What is fitness balance ?

(12 x 2 = 24 , Maximum ceiling 20 marks)

PART B

**All questions can be attended.
Each question carries 5 marks.**

13. Define Asana and explain two meditative asanas?
14. List out the components of performance related physical fitness?
15. Define strength and explain the types strength
16. What are the advantages of regular exercises programme?
17. What is the difference between aerobic and anaerobic exercise?
18. What is cosmetic fitness ? write down its features
19. Define first aid ? write down the principle of First aid

(7 x 5 = 35, Maximum ceiling 30 marks)

PART C

Answer any one question

20. What is life style diseases and explain causes, symptoms and management of diabetes and obesity?
21. Define the word ' Physical education' and explain the Aim, objective and scope of physical education and sports in the current world?

(1 x 10 = 10 Marks)