

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Sixth Semester B.Sc Zoology Degree Examination, March /April 2019
ZO6B12 T – Molecular Biology & Bioinformatics
(2016 Admission onwards)

Time: 3 hours

Max. Marks: 80

I. One word questions (Answer all the questions)

1. Each record in a data base is called.....
2. Name the *E. coli* database
3. Which is the sequence alignment tool provided by NCBI?
4. Name the database showing current sequence map of human genome
5. Give an example for metabolite data base
6. Name the first biological data base
7. Who discovered DNA as genetic material?
8. Who proposed Wobble hypothesis?
9. Give an example of termination codon
10. Give an example for lysogenic phage

(10 x 1=10 Marks)**II. Paragraph questions (Answer any ten questions)**

11. Comment on RNAi
12. Define Bioinformatics
13. Write notes on satellite DNA
14. Briefly explain metabolomics
15. Write short note on hnRNA
16. Describe the features of spliceosomes
17. Comment on the scope of bioinformatics
18. Give an account on overlapping genes
19. What is C value paradox?
20. Write short notes on jumping genes
21. Distinguish between cistron and muton
22. Comment on gene bank

(10 x 2= 20 Marks)

III. Short answer questions (Answer any five questions)

23. Describe Hershey and Chase experiment
24. Give an account on tools and applications of proteomics
25. Describe the features of genetic code
26. Briefly explain micro array technique
27. Explain Lytic and Lysogenic cycle
28. Briefly explain Lac operon
29. Explain promoters and enhancers
30. Explain repetitive and non repetitive DNA

(5 x 6= 30 Marks)

IV. Essay Questions (Answer any two questions)

31. Write an essay on DNA sequencing and its applications
32. Write an essay on protein synthesis
33. Explain different types of sequence alignments
34. Describe RNA splicing and post translational modifications

(2 x10= 20 Marks)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Sixth Semester B.Sc Zoology Degree Examination, March /April 2019

ZO6B15(E)01T – Human Genetics

(2016 Admission onwards)

Time: 3 hours

Max. Marks: 80

I. Answer all questions. Each question carries ONE mark.

1. Huntington's disease follow _____ inheritance.
2. The buffer used in R-banding technique.
3. Reduced cranial foramen is a symptom of _____.
4. Hutchinson- Gilford syndrome is due to the point mutation in _____ gene.
5. Osteogenesis imperfecta is due to the lack of _____ in connective tissue.
6. Diagrammatic representation of inheritance of a genetic trait is called _____.
7. Banding techniques of Chromosome were accepted as the method of classification in _____.
8. What is DMD?
9. What is ring chromosome?
10. Alzheimer's disease caused by _____.

(10x1=10Marks)**II. Answer any ten questions. Each question carry TWO marks.**

11. Write notes on G-banding.
12. What is Philadelphia chromosome?
13. What are the problems associated with inbreeding?
14. Write notes on Chri-du-chat syndrome.
15. What is meant by multifactorial characters? Give example
16. Write notes on Dermatoglyphics.
17. What is SCID? What is its cause?
18. Write notes on cystic fibrosis.
19. What are maternal effect genes?
20. How are identical twins formed?
21. What is isochromosome?
22. What are the causes of familial hyper cholesterolemia?

(10x2=20 Marks)

III Answer any five questions. Each question carry SIX marks.

23. What are the procedures and significance of genetic counselling?
24. Explain Denver system of chromosome classification.
25. What is the cause of congenital adrenal hyperplasia?
26. What are the procedures of karyotyping?
27. Describe amniocentesis
28. Write notes on Thalassemia.
29. Explain the procedure of FISH.
30. Explain X- linked recessive inheritance giving example.

(6x5=30 Mark)

IV. Answer any two questions. Each Question carry TEN marks.

31. Describe autosomal dominant inheritance with examples.
32. Describe different types of non-disjunctions of chromosomes
33. Explain the importance of genetic counselling. What are the methods?
34. What are the hormonal control of embryonic sex determination? Explain.

(2x10=20 Mark)

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Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Sixth Semester B.Sc Zoology Degree Examination, March /April 2019
ZO6B13 T – Reproductive Biology, Developmental Biology & Teratology
(2016 Admission onwards)

Time: 3 hours

Max. Marks: 80

I. Answer all questions. Each question carries one marks

1. The ejaculated sperms undergo a period of conditioning called
2. The introduction of sperm into the vagina of the female by artificial method is called
3. Full form of ART?
4. In the preformation theory, the miniature organism present in the sperm called
5. Eggs protected by calcareous shell are calledegg
6. Macrolecithal and extremely telolecithal eggs having type of blastula
7. The third cleavage in amphioxus is the plain
8. The primitive ridges terminate anteriorly in a thickening known as
9. Hair loop experiment was conducted by in 1903
10. Most common disruption caused by alcohol is

(10 x 1 = 10 Marks)

II. Answer any ten questions. Each question carries two marks.

11. What is Hox gene?
12. What is thelytoky?
13. What is surrogacy?
14. What is cell lineage?
15. What is GIFT?
16. What is pluripotent cell.
17. What is yolk plug?
18. Mention Primitive streak?
19. Describe Ejaculation.
20. What is morula?
21. What is ICSI?
22. What is fate map?

(10 x 2 = 20 Marks)

III. Answer any five questions. Each question carries six marks.

23. What is Teratology? Explain any two teratogens.
24. Explain the importance of gray crescent in amphibian.
25. Describe parthenogenesis and its significance.
26. Explain female foeticide: ethical issues and law
27. What is cleavage? Explain cleavage based on the amount of yolk.
28. Explain gastrulation in Amphioxus.
29. List out the significance of 24 hour chick embryo.
30. Explain Spemann's experiment on amphibian.

(5 x 6 = 30 Marks)

IV. Answer any two questions. Each carries ten marks.

31. Write an essay on controlled gene expression during development of Drosophila.
32. Write an essay on fertility control methods.
33. What is cleavage? Explain different types of cleavage.
34. Explain the hormonal control during the metamorphosis in frog.

(2 x 10 = 20 Marks)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
 Sixth Semester B.Sc Zoology Degree Examination, March /April 2019
 ZO6B14 T – Biotechnology, Microbiology & Immunology
 (2016 Admission onwards)

Time: 3 hours

Max. Marks: 80

I. Answer all questions. Each question carries one mark.

- 1 Name the method of extracting metals by using microorganisms.
- 2 The delivery of DNA into cells by liposome is called.....
- 3 In.....method, DNA is directly injected into the male pro-nucleus.
- 4 Bacteria used for clearing the oil spills.
- 5 DNA is synthesized from mRNA using the enzyme.
- 6 Name the cell obtained by fusing a B-lymphocyte with a tumor cell.
- 7 Name the immunoglobulin which can cross human placenta.
- 8 FISH can be expanded as.....
- 9 Give an example for an autoimmune disease.
- 10 pBR 322 is a.....

(10 x 1=10 Marks)

II. Short answer questions – Answer any ten questions.

- 11 What is Western Blotting?
- 12 What is a bacteriophage?
- 13 Name any two bacterial diseases in human?
- 14 What are Mast cells?
- 15 Write notes Retrovirus.
- 16 What is Electroporation?
- 17 What are Macrophages?
- 18 Define Bioremediation.
- 19 Name two phagocytic cell?
- 20 Give an account on knock out mouse.
- 21 What are adjuvents?
- 22 Name four cells of the immune system. List out their functions.

(10 x 2 = 20 Marks)

III. Short Essay - Answer any *five* questions.

- 23 Describe the method of transfection.
- 24 Describe hybridoma technology.
- 25 Write note on monoclonal antibodies? mention its uses.
- 26 What are cytokines?
- 27 Write note on recombinant DNA technology.
- 28 Distinguish between RAPD and VNTR.
- 29 Explain chromosome walking.
- 30 Write an account on FISH.

(5 x 6 = 30 Marks)

IV. Long Essay- Answer any *two* questions.

- 31 Write an essay on microbial diseases in man.
- 32 Describe the structure of a typical antibody and add a note on various classes of antibodies and their function.
- 33 What are transgenic animals? Mention its uses.
- 34 Write note on antigen-antibody interactions

(2x10=20 Marks)

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Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Sixth Semester B.Sc Zoology Degree Examination, March /April 2019
ZO6B10 T – Biochemistry
(2016 Admission onwards)

Time: 3 hours

Max. Marks: 80

Part A**Answer all questions. Each question carries 1 Mark.**

1. Name two essential fatty acids.
2. Distinguish isozyme and ribozyme.
3. Name the storage form of carbohydrates in mammals.
4. What is redox potential?
5. Name any two inhibitors of Electron transport chain.
6. What is zwitter ion?
7. Name any two separation technique used for protein.
8. Write a short note on hydrogen bonds.
9. Name an amphibolic pathway.
10. Where does the citric acid cycle takes place in eukaryotes.

(10 × 1= 10 Marks)**Part B****Short answer questions. Answer any ten questions.**

11. Give the structure of cyclic AMP.
12. Give a short account on deamination of amino acids.
13. What is the significance of ATP in biological systems?
14. Mention properties of enzymes?
15. What is a phospholipid?
16. Give an account on denaturation of proteins.

17. Describe the role of cytochromes.
18. Distinguish coenzyme and cofactors?
19. What is meant by amphoteric properties of amino acids.
20. Describe structure of ATP.
21. What are simple and compound lipids?
22. Mention any four biological functions of prostaglandins.

(10 × 2 = 20 Marks)

Part C

III. Short answer questions. Answer *any five* questions.

23. Give a brief account on chromatography.
24. What is glycogenesis? Write down major sequence of reactions involved in it.
25. Describe structure of purines and pyrimidines.
26. Explain nomenclature and properties of enzymes.
27. Give a brief description of structure of proteins.
28. Distinguish Polyacrylamide Gel Electrophoresis and Agarose Gel Electrophoresis
29. How many ATP molecules formed during complete oxidation of glucose?
30. Why sucrose is considered as a reducing sugar and maltose not?

(5 × 6 = 30 Marks)

Part D

IV. Answer *any two* questions.

31. Describe mechanism and theories of enzyme action. Give an idea about enzyme inhibition.
32. Describe structure and classification of amino acids. Add a note on isoelectric point.
33. Briefly explain about HMP pathway. Mention its biological importance.
34. Describe Kreb's cycle. Add a brief note on Electron Transport.

(2 × 10 = 20 Marks)

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Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Sixth Semester B.Sc Zoology Degree Examination, March /April 2019

ZO6B11 T – Physiology & Endocrinology

(2016 Admission onwards)

Time: 3 hours

Max. Marks: 80

Answer all questions. Each question carries 1 Mark.

A prolonged disorder of eating, due to loss of appetite

Colourless and globular basic protein in haemoglobin is.....

Name the open spaces without a membranous lining in an open type blood-vascular system.

Excretion of Nitrogenous wastes in the form of Uric acid is called.....

Name the condition, muscle loses its power for contraction, and becomes relaxed and flabby.

Sustentacular tissue that surrounds and supports neurons in the central nervous system is.....

Enzyme controlled production and emission of light by living organism is.....

Name the hormone group stimulate the activity of other endocrine glands.

Name the deficiency syndrome of thyroid hormones in children

A procedure in which blood is drawn and separated into its components is called -----

(10 × 1 = 10 marks)

Short answer questions. Answer any ten questions

1. Comment on steroids hormonal action.

2. Explain the Hormone related sexual dysfunctions in human Male.

3. What are the functions of vasopressin

4. Describe the structure of Thyroid

5. X and Y endocrine organs in crustaceans

6. Explain the Morphology of electric organ

7. Describe the action of excitatory and inhibitory neurotransmitters.

8. Explain Cori cycle

9. Differentiate between Ammonotelism and urecotelism

10. Comment on conducting system in human heart

11. What are the stages of blood coagulation.

12. Sketch and label the structure of a neuro-muscular junction

(10 x 2= 20 Marks)

III. Short answer questions. Answer any five questions

23. Comment on Ruminant digestion
24. Explain the relevance of special nutrition in pregnancy
25. Explain the molecular organization of Haemoglobin
26. Describe the blood transport of Oxygen in human.
27. Explain the nerve impulse transmission
28. Explain the endocrine function of Hypothalamus
29. Explain the role of hormones released from human placenta?
30. Describe the positive and negative feedback endocrine regulation.

(5 x 6= 30 Marks)

IV. Answer any two questions

31. Explain the structure and their hormones of following Endocrine glands in human
 - i) Adrenal
 - ii) Parathyroid
 - iii) Pancreas
32. Describe Ornithine cycle
33. Explain the ultrastructural changes of muscle contraction with sketches of sarcomere.
34. Describe the composition of Human blood

(2 x 10= 20 Marks)