

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE  
Sixth Semester B.Sc Degree Examination, March/April 2020

**BZOL6B10 – Biochemistry**

(2017 Admission onwards)

Time: 3 hours

Max. Marks:80

**I. Answer all questions. Each Question carries 1mark.**

1. Write the structure of Maltose.
2. What is redox potential?
3. How Peptide bond is formed?
4. Carbohydrates that are made up of one or two sugar units are called
5. How do enzymes speed up chemical reaction?
6. Name the enzyme responsible for the conversion of glucose-6-phosphate to glucose in gluconeogenesis.
7. Name any two inhibitors of electron transport chain.
8. Name an optically active amino acid.
9. What is the principle of chromatography?
10. Name the reactive metal present in Benedict reagent.

(10 x 1 = 10 Marks)

**II. Short answer questions. Answer any ten questions**

11. What are coenzymes and how they are vital to your health?
12. What is milk sugar? Give its structure.
13. Mention the functions of lecithins?
14. What are zwitter ions?
15. Mention the clinical significance of Benedict's test.
16. Differentiate between simple and compound lipids.
17. Draw the structure of cholesterol.
18. What are ribozymes?
19. Draw the structure of any one pyrimidine base.

### III. Short answer questions. Answer any Five

23. With help of an example describe osmoregulation in terrestrial animals
24. Describe the significance of hormones in female sexual cycle
25. Explain the various steps involved in the process of blood coagulation
26. Explain the structural organization of hemoglobin molecule
27. Describe the major biochemical events during muscle contraction
28. Explain the physiology of Bioluminescence
29. Describe the process of urine formation in kidney
30. Write a note on abnormal constituents of urine

(5x6=30mar)

### IV. Answer any Two

31. Explain the process of transport of carbondioxide between lungs and tissues
32. Describe the mechanism of action of hormones
33. What is nerve impulse? Explain how nerve impulse is transmitted through nerve fibre
34. Explain the various cardiovascular diseases in man. Add a note on ECG.

(2x10=20mar)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE  
 Sixth Semester B.Sc Degree Examination, March/April 2020  
**BZOL6B12 – Molecular Biology & Bioinformatics**  
 (2017 Admission onwards)

Time: 3 hours

Max. Marks:80

**I. Answer all the questions each question carries 1 mark**

1. Name the nucleoprotein used for splicing
2. KEGG belongs to which type of database
3. Who proposed reverse transcription
4. Give an example for ribozyme
5. Modified nucleotide used for Sanger sequencing
6. Give an example for multiple sequence alignment tool
7. Who proposed one gene one polypeptide hypothesis
8. Give the name of bacteria used by Griffith for his transformation experiments
9. How many arms are seen in tRNA
10. Example for protein sequence data base

**(10 x 1=10 Marks)****II. Answer any ten questions. Each question carries 2 mark**

11. Define bioinformatics
12. What is poly A tailing
13. Comment on Meselson and Stahl experiments
14. Briefly explain DDBJ
15. C value and C value paradox
16. What are housekeeping genes
17. What are satellite DNA
18. Write notes on PRINTS
19. What is metabolomics
20. Define cistron and muton
21. Comment on the significance of Hershey and Chase experiment
22. Define pseudogene

**(10 x 2= 20 Marks)**

**III. Answer any five questions. Each question carries 6 mark**

23. Give an account of Proteomics
24. Explain split genes and jumping genes
25. Features of codon
26. Describe post transcriptional modification
27. Explain Lac operon
28. Comment on SiRNA and RNAi
29. Describe ethical issues in bioinformatics
30. Explain Micro-array

(5 x 6= 30 Ma

**IV. Answer any two questions. Each question carries 10 mark**

31. Explain protein synthesis
32. Write an essay on Griffith's experiment and its significance
33. Explain sequence similarity search techniques
34. Describe different types primary databases in bioinformatics

(2 x 10= 20 Ma

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Sixth Semester B.Sc Degree Examination, March/April 2020

**BZOL6B13 – Reproductive Biology, Developmental Biology & Teratology**

(2017 Admission onwards)

Time: 3 hours

Max. Marks:80

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

1. Who proposed Preformation theory?
2. Example for Semelparity.
3. Graafian follicle encloses a cavity called.
4. The first secretion of the breast, following birth is called.
5. Centrolecithal eggs are seen in.
6. Name the main processes involved in gastrulation of Amphioxus.
7. Which is the path corresponds to the radius of the egg after the entry of sperm?
8. How many somites are found in 33hrs chick embryo?
9. Mention two types of parthenogenesis.
10. Name the agents responsible for the disruption of embryo.

**(10 x 1 =10 Marks)**

**II. Answer all ten questions. Each question carries two marks.**

11. What is ejaculation?
12. Comment on Parturition.
13. Mention Estrous phase.
14. Explain mesodermal derivatives.
15. Comment on radial cleavage.
16. Explain the major steps in IVF.
17. Comment on neural crest in frog?
18. Explain telolecithal eggs.
19. Explain blastulation in Amphioxus?
20. What are Hox genes?

**(10 x 2=20 Marks)**

**III. Answer any five questions. (Short essay) Each question carries six marks**

21. Describe gametogenesis in human beings.
22. What is placenta? Explain its functions.
23. Write short essay on assisted reproductive techniques.
24. Write short essay on infertility and its management.
25. Describe the salient features of 48 hours of chick embryo.
26. Write short essay on Parthenogenesis.
27. Explain the Spemann's experiment in embryology.
28. Comment of prenatal diagnosis techniques.

(5 x 6=30 M)

**IV. Answer any two essay questions. Each question carries ten marks.**

29. Explain menstrual cycle and its hormonal control in human.
30. Explain the fertility control measures.
31. Write an essay on environmental disruption and animal development.
32. What is cleavage? Explain cleavage based on the amount of yolk, development and pattern.

(2 x 10=20)

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Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE  
 Sixth Semester B.Sc Degree Examination, March/April 2020  
 BZOL6B14 – Biotechnology, Microbiology & Immunology  
 (2017 Admission onwards)

Time: 3 hours

Max. Marks:80

I. **Answer all questions. Each carries 1 mark:**

1. Antibody that can cross human placenta is.....
2. Antiviral protein is called.....
3. Extra chromosomal circular DNA found in bacteria is called.....
4. The capacity to produce disease is called.....
5. The part of an antigen that can specifically react with an antibody is known as.....
6. Who coined the term Biotechnology?
7. The first artificial vector developed by Bolivar and Rodriguez from E. coli plasmid is.....
8. The fusion between a plasma cell and a tumor cell is known as.....
9. The time between infection and the appearance of signs and symptoms of a disease is.....
10. An infectious protein that causes degenerative disorders of central nervous system is.....

(10x1=10 Marks)

II. **Answer all questions. Each carries 2 marks:**

11. What are molecular probes?
12. What do you mean by biological weapons?
13. Define Bioremediation.
14. Comment on haptens.
15. Explain 'Chromosome walking'.
16. What are Macrophages?
17. Explain RFLPs.
18. Comment on the composition of culture media.;
19. What is Bioleaching?
20. What are Antibiotics?

(10x2=20 Marks)

**III. Answer any five questions. Each carries 6 marks:**

21. Describe the structure of a typical bacterial cell.
22. Explain recombinant DNA technology.
23. Comment on transgenic organisms.
24. What are the major steps involved in gene cloning.
25. Explain different blotting techniques.
26. Give an account on autoimmune diseases.
27. Describe the organs of immune system.
28. Comment on the effect of temperature and PH on bacterial growth.

(5x6=30 M)

**IV. Answer any two essay questions. Each carries 10 marks:**

29. Discuss the role of microbes in biotechnology.
30. Give an account on various microbial diseases in man.
31. Write an account of the following:-
  - a) PCR
  - b) Molecular markers
  - c) Restriction enzymes
  - d) Molecular pharming
32. Describe the structure of a typical immunoglobulin molecule. Add a note on the biological properties of immunoglobulins.

(2x10=20 M)



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(Pages: 2)

Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Sixth Semester B.Sc Degree Examination, March/April 2020

**BZOL6E(1) – Human Genetics**

(2017 Admission onwards)

Time: 3 hours

Max. Marks: 80

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

1. Von willebrand Factor has a role in \_\_\_\_\_
2. GNAS Mutation causes \_\_\_\_\_.
3. An example for meiotic nondisjunction of autosomes.
4. According to Denver system, X-chromosomes in human is included in group. \_\_\_\_\_.
5. An autosomal disorder caused by disorder in Lamin protein production .
6. An example for the case of mitotic nondisjunction.
7. Expand AFP.
8. Excessive calcium deposition in skull bones cause \_\_\_\_\_
9. Marfan's syndrome is caused by \_\_\_\_\_ gene mutation.
10. Ecogenetics means :

(10x1=10Marks)

**II Answer any ten questions. Each question carry TWO marks.**

11. Write notes on Foetoscopy.
12. What is Praderwilli syndrome?
13. Write notes on Test tube baby
14. What is meant by inbreeding coefficient?
15. What is ring chromosome?
16. What is DMD
17. What is the genetic reason for microcephaly?
18. What is 14q+ syndrome?
19. Write notes on genetic cause of Thalssemia?
20. What is meant by phenocopy?
21. How do consanguineous marriages are influential in genetic context ?
22. What is SCID?

(10x2=20 marks)

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

23. Describe the procedure for FISH?
24. Describe Hox genes.
25. Describe causes and symptoms of Cystic fibrosis.
26. How do human sexual development occur?
27. Describe amniocentesis.
28. What is pedigree chart? How is it prepared?
29. Describe apoptosis.
30. Write notes on X-linked dominant inheritance

(6x5=30 marks)

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

31. Write an essay on genetic counselling.
32. Describe various examples of multifactorial inheritance
33. Describe various banding methods for chromosome classification.
34. What is karyotyping? .What are the methods to prepare foetal karyotyping?

(2x10=20 marks)