

36M20247

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Reg. No:.....

Name:

FAROOK COLLEGE-(AUTONOMOUS), KOZHIKODE
 Sixth Semester B.Sc. Degree Examination, March/April 2020
BBOT6E01 – Genetic Engineering
 (2017 Admission onwards)

Time: 3 hours

Max. Marks: 80

Part-A (Answer ALL questions)

Define/Explain

- What are RNA probes?
- What is Ti plasmid?
- Write a note on S1 nuclease
- Write a note on Golden Rice
- What is alkaline phosphatase?
- What are GFP genes?
- Name a gelling agent used in electrophoresis.
- Name an enzyme used in PCR.
- What is BAC?
- Mention the Role of EDTA in DNA isolation

(10 x 1 = 10 marks)

Part-B
(Answer ALL questions)

- Write a note on DNA isolation solutions.
- Explain Kirby method.
- What are Buffers? Write an example for buffer used for electrophoresis of nucleic acids.
- Give account on Marmur method.
- Write notes on Chromosome walking.
- What are shuttle vectors? Write an example.
- Write a notes on Expression vectors.
- Mention important methods used for breaking the cells.
- Describe Gene Knock Out.
- Write note on the staining of DNA.

(10 x 2 = 20 marks)

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Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Sixth Semester B.Sc. Degree Examination, March/April 2020
BBOT6B12 – Environmental Science
(2017 Admission onwards)

Time: 3 hours

Max. Marks: 80

Part-C
(Answer any SIX of the following)

- 21. What is meant by Antisense technology? Give an example where Antisense technology is used in transgenesis.
- 22. What are cloning vectors? Explain the various types of high capacity vectors.
- 23. What are the precautions and treatments to be taken during the isolation of RNA.
- 24. How can you extract genomic DNA from rice plant?
- 25. Describe the methods of Nucleic acid transfer and hybridization.
- 26. Explain the various methods used for removal of RNA.
- 27. What is meant by RNAi technology? Explain.
- 28. Explain the methods to
 - a) determine concentration and purity of DNA.
 - b) Storage of DNA

(6 x 5 = 30 marks)

Part D
(Answer any TWO of the following)

- 29. Describe in detail the process of gene transfer in plants. Add note on the different techniques used for the purpose.
- 30. Write an essay on Applications of recombinant DNA technology.
- 31. Explain the various methods used for selecting transformants.

(2 x 10 = 20 marks)

Part- A
(Answer all the questions)

- Mention the concept of productivity?
- Who put forth the concept of ecosystem?
- Succession occurs on a water body is known as-----
- The organization involved in the conservation biodiversity is-----
- Name the Tropical Grassland.
- Define pioneer community.
- Write an example for lotic ecosystem.
- What are Ephemerals?
- Name one sampling technique used in plant community studies?
- What is pm 2.5.

(1 x 10 = 10 Marks)

PART B
(Answer all questions)

- Define Ecological niche.
- What is viviparous germination?
- Write notes on UNEP.
- What is key stone species?
- What is flagship species?
- What are trophic levels?
- Define noise pollution?
- Give an account of Forest Biome?
- What is Eutrophication?
- What is ELNINO?

(10 x 2 = 20marks)

PART C

(Answer any six of the following)

21. Describe briefly the morphological and anatomical adaptations of Hydrophytes?
22. Explain the structure and functions of Ecosystem.
23. Describe conventional and phytotechnological methods for pollution control.
24. Describe Bio Geo Chemical Cycles with an example
25. Describe the methods adopted to study plant communities?
26. Explain water pollution.
27. Describe Green House effect.
28. Describe the features of Estuarine ecosystem.

(6 x 5 = 30marks)

Part D

(Answer any two of the following)

29. What are the components of biodiversity? Explain the various threats to biodiversity.
30. What is Plant succession? Describe the various seral stages in Xerosere.
31. Write an essay on causes and effects of air pollution.

(2 x 10 = 20marks)

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Reg. No:

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

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

BBOT6B11 – Cell Biology & Biochemistry

(2017 Admission onwards)

Time: 3 hours

Max. Marks: 80

Part - A

(Answer all the questions)

1. _____ are self-duplicating spherical, granular or filamentary cell organelles.
2. Resting phase of the cell, where it undergoes growth and DNA replication is called _____.
3. The chemical products of the cell are shipped and distributed by _____.
4. Microtubules are made up of _____.
5. What are chromatin fibres?
6. In the formation of a macromolecule, what type of bond would join two amino acid subunits?
7. Name an enzyme which is not proteinaceous in nature?
8. Enzymes that catalyze removal of groups from substrates without addition or removal of water are called _____.
9. Building blocks of nucleic acids are _____.
10. Name the bond seen in between two nucleotides in DNA.

(10 x 1 = 10 marks)

Part - B

(Answer all questions)

11. What are Polysomes?
12. Define isoenzymes?
13. Differentiate between SER and RER.
14. What are chaperons?
15. Differentiate between heterochromatin and euchromatin.
16. Mention any two biological roles of glucose.
17. Write any two major roles of co-enzymes in enzyme catalysis.
18. Enumerate the significance of mitosis.
19. Short notes on Mucopolysaccharides.
20. What are histones?

(10 x 2 = 20 marks)

Part C
(Answer any six of the following)

21. What are monosaccharides? Explain classification with examples.
22. Briefly describe the different types of secondary metabolites seen in plants?
23. Give an account of the structure of polytene chromosome.
24. Describe the structure and functions of Ribosome.
25. Mention the differences between saturated and unsaturated Fatty acids?
26. What are high energy nucleotides? Explain the structure of ATP.
27. Explain the fluid-mosaic model of plasma membrane.
28. Write notes on Golgi bodies? What are its functions?

(6 x 5 = 30 marks)

Part - D
(Answer any two of the following)

29. Explain the structure of proteins with the help of a labelled diagrams.
30. Give an account of structural aberrations and their meiotic consequences.
31. With the help of neat labeled diagrams, explain meiosis?

(2 x 10 = 20 marks)

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Reg. No:

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Sixth Semester B.Sc. Degree Examination, March/April 2020
BBOT6B10 – Plant Physiology & Metabolism
(2017 Admission onwards)

Time: 3 hours

Max. Marks: 80

Part - A
(Answer all the questions)

1. Give an example for synthetic auxin
2. An example for amphibolic pathway is.....
3. What are accessory pigments?
4. Name an anaerobic nitrogen fixing photosynthetic bacteria
5. Which is the principal pigment of green plants?
6. Name a micronutrient required by plants.
7. Which is the product in all type of deamination?
8. In germinating plant seeds, beta oxidation system is located in
9. Who put forward Chemi osmotic coupling hypothesis?
10. Which enzyme complex serves as a "proton pump".

(10x1=10marks)

Part - B
(Answer all the questions)

11. Explain various types of transpiration.
12. Define absorption spectrum and action spectrum
13. What is Photolysis of water?
14. Write any four characteristics of C4 plants
15. What are the external factors influencing photosynthesis
16. Differentiate between active absorption and passive absorption
17. What is beta oxidation?
18. Anaerobic reactions are endergonic. What does it mean?
19. What is meant by anaerobic reaction? Give an example
20. What is lactic acid fermentation?

(10x2=20 marks)

Part C
Answer any six of the following

21. How does biological nitrogen fixation takes place in plants?
22. Write a short note on physiological effect of Auxin
23. Describe SPAC concept. What is its significance?
24. Briefly explain Starch sugar interconversion theory.
25. Differentiate between diffusion and osmosis.
26. Enumerate the steps in EMP pathway
27. Write a short note on Chemiosmotic hypothesis
28. Give an account on organization of respiratory chain

(6x5=30 marks)

Part - D
Answer any two of the following

29. Explain Kreb's cycle and write down its significance
30. Outline Hatch and Slack cycle and point out differences from Calvin cycle
31. Explain cyclic and noncyclic photophosphorylation reactions in Photosynthesis.

(2x10=20 marks)

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(Pages : 2)

Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Sixth Semester B.Sc. Degree Examination, March/April 2020
BBOT6B09 – Genetics & Plant Breeding
(2017 Admission onwards)

Time: 3 hours

Max. Marks: 80

Part - A
(Answer all the questions)

Test Cross

Define genotype.

Write an example for a lethal gene.

Close pairing of homologous chromosome during zygotene is called as

Write an example of an intergeneric cross.

Central Rice Research institute is located at

Dihybrid phenotypic ratio is

Write an example for recessive epistasis

The F_2 ratio of Co dominance is

Name a gene bank in India

(10 x 1=10 marks)

Part - B
(Answer all questions)

What are the advantages of plant introduction?

Differentiate mass selection and pureline selection

Inbreeding Depression

Differentiate Interference and Coincidence.

What are holandric genes? Give example

Differentiate between phenotype and genotype.

Explain the Principle of Purity of gametes.

Write a note on Heterosis

State Hardy - Weinberg Law.

Write a note on Incomplete dominance

(10 x 2=20 marks)

Part - C

(Answer any six of the following)

21. Explain the physical mechanism of meiotic crossing over.
22. What is plant introduction? Explain its types.
23. Write an account on Mutation breeding.
24. Explain the inheritance of human skin colour
25. Write an account on hybridization technique.
26. Write an account on Genic balance theory.
27. Explain the inheritance of fruit colour in summer squash.
28. Describe the inheritance of eye colour in *Drosophila*.

(6 x 5=30 marks)

Part - D

(Answer any two of the following)

29. Describe multiple allelism with the help of example.
30. Describe Extra nuclear inheritance with suitable example.
31. Explain the procedure of mutation breeding. Discuss its merits and demerits and achievements

(2 x 10=20 marks)