



**ISLAMIAH COLLEGE [AUTONOMOUS]
VANIYAMBADI
CIA TEST II – MARCH 2020**

TIME: 3 Hours

MAX. MARKS: 75

II M.Sc., Biochemistry

IV Semester

P8BI4001

GENETICS AND MOLECULAR BIOLOGY

PART - A (5 X 6 = 30 MARKS)

Answer ALL Questions

1. (a). Explain the Monohybrid cross experiment.

Or

- (b). Explain the back cross and test cross.

2. (a). Describe experimental evidence for semiconservative replication

Or

- (b). Explain the role of DNA polymerase, DNA ligase and
Restriction endonuclease

3. (a). Explain the processing of mRNA.

Or

- (b). Explain the steps involved prokaryotic transcription

4. (a). Explain salient features of genetic code

Or

- (b). Explain post translational modification of protein.

5. (a). What is mutagen? Explain the types of mutations

Or

- (b). Write about mismatch repair

PART - B (3 X 15 = 45 MARKS)

Answer any THREE Questions

6. Explain the Mendel's dihybrid cross experiment.
7. Explain the steps involved eukaryotic replication
8. Explain the steps involved eukaryotic transcription.
9. Explain the steps involved eukaryotic translation
10. Explain the SOS repair.

(Dr. AGK & Dr. VMM)

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HUMAN PHYSIOLOGY

PART - A (5 X 6 = 30 MARKS)

Answer ALL the Questions

1. (a). Explain the Mechanism of blood clotting.

Or

- (b). Describe on blood groups and Rh typing.

2. (a). Explain the anatomy and physiology of heart.

Or

- (b). Explain the mechanism of hearing and its defect.

3. (a). Explain the structure and function of lungs.

Or

- (b). Explain the thermoregulation.

4. (a). Explain the structure and function of brain.

Or

- (b). Discuss about spermatogenesis.

5. (a). Explain the mechanism of carbohydrate digestion and absorption.

Or

- (b). Explain the structure and function of nephron.

PART - B (3 X 15 = 45 MARKS)

Answer any THREE Questions

- 6. Explain the mechanism of muscle action.
- 7. Explain the cardiac cycle.
- 8. Explain the mechanism of respiration.
- 9. Explain the mechanism of synaptic transmission.
- 10. Explain the mechanism of urine formation.

(Mr. AAH)

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IMMUNOLOGY AND IMMUNOTECHNOLOGY

PART - A (5 X 6 = 30 MARKS)

Answer ALL the Questions

1. (a). Discuss the various biologic and chemical factors of innate immunity.

Or

- (b). Differentiate between innate and acquired immunity.

2. (a). Describe the Epitope, Paratope, Haptens.

Or

- (b). Explain the Classification of antigen based on Chemical nature, mode of action.

3. (a). Explain the significance of complement components.

Or

- (b). Discuss the alternate complement pathway.

4. (a). Discuss about Type I Hypersensitivity.

Or

- (b). Explain the Type III Hypersensitivity.

5. (a). Write a note on Complement fixation test

Or

- (b). Write a note on agglutination test and its type.

PART - B (3 X 15 = 45 MARKS)

Answer any THREE Questions

11. Describe the organs of immune system.
12. Explain the structure and function of IgG.
13. Discuss classical pathway of complement activation.
14. Explain the mechanism graft rejection.
15. Explain Antigen- Antibody reactions and their applications.

(Dr. ALA, Dr. Dr.MPAW & Mr. KV)

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Research Methodology

PART - A (5 X 6 = 30 MARKS)

Answer ALL the Questions

2. (a). Explain the objectives of Research.

Or

(b). Describe the problems encountered in research.

2. (a). Write a short note on scientific thinking.

Or

(b). How will you identify the research problem.

3. (a). Explain the importance of hypothesis.

Or

(b). Describe the testing of hypothesis.

4. (a). Explain the classification of data.

Or

(b). Discuss about merits and demerits of standard deviation.

5. (a). Explain the review of literature.

Or

(b). Write a short note on effective illustration.

PART - B (3 X 15 = 45 MARKS)

Answer any THREE Questions

11. Discuss briefly types of research.

12. Give an account on research design.

13. Explain the characteristic of a good hypothesis.

14. Explain the methods of data collection.

15. Give an account on thesis writing.

(Mr. KMS & Mr. KV)

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