

ISLAMIAH COLLEGE (AUTONOMOUS)
VANIYAMBADI.
CIA TEST II- MARCH - 2020

TIME : 3 Hrs.

MAX. MARKS: 75

III B.Sc., Biochemistry

VI Semester

U5BI6004

NUTRITIONAL BIOCHEMISTRY & DIETETICS
PART - A (10 X 2 = 20 MARKS)

Answer ALL Questions

Define the following:

1. Energy giving foods.
2. RDA.
3. SDA.
4. Essential amino acids.
5. BMI.
6. Kwashiorkor.
7. Diet sheet for obesity.
8. Diet sheet for anemia.
9. Lake.
10. Food adulteration.

PART - B (5 X 5 = 25 MARKS)

Answer ALL Questions

11. (a). Explain the nutritional importance of carbohydrate and fat.
(Or)
(b) Explain the RDA of an average Indian.
12. (a) Determine the energy measurement by Bomb calorimeter.
(Or)
(b) How would you assess the nutritive value of proteins.

13. (a) Give a table for Dietary requirement of old age.
(Or)

(b) Explain the nutritional requirement for pregnant women.

14. (a). Explain the nutritional therapy of jaundice.
(Or)

(b) Write an account of diet management for Hypertension.

15. (a) Write a note on Food additives.

(Or)

(b) Explain the preservation of foods.

PART - C (3 X 10 = 30 MARKS)

Answer any THREE Questions

16. Explain the basic food groups.
17. Explain BMR, and give the factors affecting BMR in detail.
18. Explain the cause, symptoms, prevention of protein malnutrition
19. Write about disease management of Diabetes mellitus with diet
20. Explain the spoilage of foods and its types.

(Dr. AGK & Mr. PMK)

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ISLAMIAH COLLEGE [AUTONOMOUS], VANIYAMBADI
CIA TEST II- MARCH - 2020

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Max. Marks: 75

Intermediary Metabolism

VI Semester

U5BI6001

PART - A (10 X 2 = 20)

Answer ALL the Questions

1. Define substrate level phosphorylation.
2. Give the inhibitors of respiratory chain.
3. Define gluconeogenesis.
4. Write a note on the regulation of glycogenolysis.
5. Write a note on β -hydroxy- γ -trimethylammonium butyrate.
6. What are ketone bodies?
7. What are transaminases?
8. What is decarboxylation?
9. What are ureotelic organisms?
10. What are uricotelic organisms?

PART - B (5 X 5 = 25)

Answer ALL the Questions

11. (a) Give the structure and functions of ATP.
(Or)
(b) Give the structure and functions of GTP.
12. (a) Given below are some of the enzymes and substrates involved in carbohydrate metabolism. Match the items in **Column A** with the appropriate items in **Column B**.

Column A	Column B
(i) Aldolase	(a) Glucose
(ii) Enolase	(b) Glucose 6-Phosphate
(iii) 6-Phosphogluconate Dehydrogenase	(c) Oxaloacetate
(iv) Phosphoenolpyruvate carboxykinase	(d) 6-Phosphogluconate
(v) Glucose-6-Phosphate Dehydrogenase	(e) 2-Phosphoglycerate
	(f) Fructose 1,6-bisphosphate
	(g) 6-Phosphogluconolactone

(Or)

(b) Describe TCA cycle.

13. (a) Describe β -oxidation of fatty acids.

(Or)

(b) Explain the biosynthesis of long chain fatty acids.

14. (a) Describe transamination.

(Or)

(b) Explain urea cycle.

15. (a) Explain the salvage of purine nucleotides.

(Or)

(b) Describe the salvage of pyrimidine nucleotides.

PART - C (3 X 10 = 30)

Answer any THREE Questions

16. (a) Define and describe high energy compounds. (5 marks)
(b) Describe oxidative phosphorylation and its site of occurrence. (2 marks)
(c) Describe metabolism and its types. Add an account on overview of metabolism. (3 marks)
17. Explain the fate of the product of aerobic glycolysis in detail. Write all the reactions involved with name, structure, enzymes and inhibitors.
18. Describe the biosynthesis of cholesterol.
19. (a) Describe the biosynthesis of creatinine. (5 marks)
(b) Describe oxidative deamination. (5 marks)
20. Explain how folic acid derivatives, some amino acids, CO_2 are involved in the biosynthesis of parent purine nucleotide and how it is converted to other purine nucleotide.

(PMK)

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III B.Sc., BIOCHEMISTRY VI SEMESTER U5BI6002

IMMUNOLOGY

PART-A (10 X 2 = 20 MARKS)

Answer ALL Questions

Explain the following

1. T helper cell.
2. Interferons.
3. Fab
4. IgM
5. Paratope.
6. Complements.
7. Hypersensitivity.
8. Allograft.
9. Agglutination.
10. ELISA.

PART-B (5X 5 = 25 MARKS)

Answer ALL Questions

11. (a) Discuss about Primary lymphoid organs.

Or

- (b) Discuss about Secondary lymphoid organs.

12. (a) List out the criteria for antigenicity.

Or

- (b) Describe the classification of antigens.

13. (a) Discuss the deficiency of complement system.

Or

- (b) Explain classical pathway of complement activation.

14. (a) Explain the mechanism of allograft rejection.

Or

- (b) Describe cell mediated hypersensitivity.

15. (a) illustrate the principle and technique of ELISA.

Or

- (b) Discuss the significance of antigen-antibody reactions.

PART-C (3X 10 = 30 MARKS)

Answer any THREE Question

16. Discuss the mechanical, chemical and biological factors involved in innate immunity.
17. Describe the structure and functions of immunoglobulins.
18. Explain Alternate pathway of complement activation.
19. Explain Type I and Type II hypersensitivity.
20. Illustrate RIA.

(Dr.MPAW & AAH)

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III B.Sc., BIOCHEMISTRY VI SEMESTER U5BI6002

CLINICAL BIOCHEMISTRY

PART-A (10 X 2 = 20 MARKS)

Answer ALL Questions

1. Define Normal saline.
2. Explain the terms hypo and hyperglycemia.
3. Give the significance of HbA_{1c}.
4. Why HDL cholesterol is called as good cholesterol.
5. What is Fanconi's syndrome?
6. What is fatty liver?
7. What is gastric residuum?
8. What is icteric index?
9. What are non-functional plasma enzymes?
10. Explain the significance of LDH.

PART-B (5X 5 = 25 MARKS)

Answer ALL Questions

1. (a) What are anticoagulants? Explain their mechanism of action.
(Or)
(b) Explain the process of transportation of biological specimens in clinical laboratory.
2. (a) Explain in detail about glycosuria.
(Or)

- (b) What are lipoproteins? Explain their functions.
3. (a) Write a note on phenylketonuria.
(Or)
(b) Write a note on haemophilia.
4. (a) Explain Vandenberg test.
(Or)
(b) Describe inulin clearance test.
5. (a) Explain the aetiology and diagnosis of myocardial infarction.
(Or)
(b) Discuss about the enzymes patterns in muscle wasting.

6. PART-C (3X 10 = 30 MARKS)

Answer any THREE Question

16. Describe the collection and processing of blood.
17. Describe (i) GTT for normal and diabetic conditions.
(ii) What is Atherosclerosis? List the factors affecting blood cholesterol level.
18. Explain the inborn errors of metabolism (i) albinism (ii) cystinuria.
19. Discuss the aetiology and diagnosis of jaundice.
20. Discuss about the enzymes patterns in acute pancreatitis and bone disorder.

(Dr. ALA & Dr. MPAW)

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VI Semester

U5BISB61

BIOTECHNOLOGY

PART - A (10 X 2 = 20 MARKS)

Answer ALL Questions

Write short note on the following

1. Inverted Microscope.
2. Fermentors.
3. Totipotency.
4. Somatic embryogenesis.
5. BSS.
6. Sandwich method.
7. Stress resistance plant.
8. Ti Plasmid.
9. Transfection.
10. Transgenic cattle.

PART - B (5 X 5 = 25 MARKS)

Answer ALL Questions

11. (a) Explain the methods of sterilization.

(Or)

- (b) Give an account on safety regulation in Tissue culture laboratory.

12. (a) Explain the composition of plant tissue culture media

(Or)

- (b). Explain protoplast culture.

13. (a) Explain Chemically define media.

(Or)

- (b). Explain somoclonal variation.

- 14 (a) Describe about herbicide resistant transgenic plant.

(Or)

- (b). Write in detail about virus resistant transgenic plant.

- 15 (a) Write in detail about dolly.

(Or)

- (b). Explain the transfection method of gene transfer.

PART - C (3 X 10 = 30 MARKS)

Answer any THREE Questions

16. Write in detailed account of various equipment used in tissue culture laboratory.
17. Explain plant tissue culture technique and give its application.
18. Explain the mammalian cell culture.
19. Explain the production of BT- cotton.
20. Explain the production and application of transgenic sheep and transgenic fish.

(Dr. AGK)

(50Copies)