

[KZ 0811]

AUGUST 2011

Sub. Code: 1402

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY**

**FIRST YEAR**

**PAPER II – BIOCHEMISTRY AND PATHOLOGY**

*Q.P. Code: 801402*

**Time : Three Hours**

**Maximum : 100 marks**

**Answer ALL questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Write in detail about viral infections.
2. Elaborate the classification of proteins.
3. Explain chronic and acute inflammation.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Vitamin D.
2. Glycogenolysis.
3. Enzyme inhibition.
4. Buffers.
5. Functions of lipids.
6. Cellular adaptation of growth and disorder.
7. Parasitic infections.
8. Enzyme inhibition.

**III. Short Answers on:**

**(10 x 3 = 30)**

1. Respiratory Quotient.
2. Cell death.
3. Molality.
4. Kwarshiorkar.
5. Three examples of viral infections.
6. Innate immunity.
7. Three examples of chemical mediators of inflammation.
8. Isoenzymes.
9. T cells.
10. Balanced diet.

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[LB 0212]

AUGUST 2012

Sub. Code: 1402

B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY

FIRST YEAR

PAPER –II-BIO CHEMISTRY & PATHOLOGY

Q.P. Code : 801402

Time: Three hours

Maximum: 100 marks

(180 Mins) Answer ALL questions in the same order.

I. Elaborate on:

Pages Time Marks  
(Max.)(Max.)(Max.)

- |  |   |    |    |
|--|---|----|----|
| 1. What are Immunoglobulins? Explain with the help of a tabular column about the different characteristic properties of all the five types.        | 7 | 20 | 10 |
| 2. a. Draw the structure of HIV.<br>b. Explain about the replication of HIV.<br>c. What are Vaccines. Why is it difficult to produce HIV vaccines. | 7 | 20 | 10 |
| 3. Write about the sources, functions and disorders of Vitamin A and D.  | 7 | 20 | 10 |

II. Write Notes on:

- |  |   |    |   |
|--|---|----|---|
| 1. How will you prepare 100 ml of 1M and 1N Sodium hydroxide. Is there any difference? Explain.      | 4 | 10 | 5 |
| 2. When an insect bites you, the layer of the body gets red, swollen and you feel the pain. Explain. | 4 | 10 | 5 |
| 3. Differentiate between Active and Passive immunity.  | 4 | 10 | 5 |
| 4. Write any five important functions of Structural proteins with examples.                          | 4 | 10 | 5 |
| 5. Write the Significance of Henderson Equation.   | 4 | 10 | 5 |
| 6. Write about the role of Calcium in muscle contraction.  | 4 | 10 | 5 |
| 7. Write a note on cell mediated immunity.   | 4 | 10 | 5 |
| 8. Do Mitochondria play a role in Cell death. If so, how?  | 4 | 10 | 5 |

III. Short Answer on:

- |   |   |   |   |
|---|---|---|---|
| 1. Give an example for Gram positive and Gram Negative bacteria.      | 2 | 4 | 3 |
| 2. What is H1N1.  | 2 | 4 | 3 |
| 3. What is the function of B Cell.                                    | 2 | 4 | 3 |
| 4. Name any three physiological buffers.                              | 2 | 4 | 3 |
| 5. Differentiate between Rickets and Osteomalacia.                    | 2 | 4 | 3 |
| 6. What are ketone bodies. Give example.                              | 2 | 4 | 3 |
| 7. How Ph affects the enzyme activity. Explain graphically.           | 2 | 4 | 3 |
| 8. What is the significance of Lactate Dehydrogenase as an isoenzyme. | 2 | 4 | 3 |
| 9. What is Vitamin B12? What is its significance.                     | 2 | 4 | 3 |
| 10. Define BMI.   | 2 | 4 | 3 |

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[LD 0212]

AUGUST 2013

Sub.Code :1402

**B.SC. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY**

**FIRST YEAR**

**Paper II – BIO- CHEMISTRY AND PATHOLOGY**

**Q.P Code : 801402**

**Time : Three hours**

**Maximum : 100 Marks**

**Answer All Questions**

**I. Elaborate on :**

**(3 X 10 = 30)**

1. What is meant by Proteins ? How are they classified ? Mention its functions.
2. Define Enzymes and Enzyme Inhibition. Explain the factors affecting enzyme activity?
3. Explain Cell injury.

**II. Write Notes on :**

**(8 X 5 = 40)**

1. Write a short notes on Biological importance of lipids ?
2. Write a short notes on Glycogen?
3. Write a short notes on BMR?
4. Explain enzyme pattern in disease.
5. Write down the general features of immune system?
6. Mention any 5 chemical mediators of inflammation.
7. Give a notes on general principles of microbial pathogenesis.
8. Explain Necrosis.

**III. Short Answers on :**

**(10 X 3 = 30)**

1. Write about nomenclature of enzymes ?
2. What is meant by Kwashiorkor disease?
3. Define Normality.
4. What is meant by Respiratory Quotient?
5. Mention any 3 differences between glucose and fructose.
6. Define Hyperplasia.
7. What are the causes of cell death.
8. Give any one immune disorder with its symptoms.
9. Write any 3 fungal infections with its causes?
10. What is meant by irreversible cell injury.

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[LE 0212]

FEBRUARY 2014

Sub. Code: 1402

**B.Sc. CARDIO PULMOARY PERFUSION CARE**

**FIRST YEAR**

**Paper II – BIO- CHEMISTRY AND PATHOLOGY**

**Q.P Code: 801402**

**Time: Three hours**

**Maximum: 100 Marks**

**Answer All Questions**

**I. Elaborate on:**

**(3 X 10 = 30)**

1. Write about Fat Soluble Vitamins? (Structure, Sources, Requirement, Functions and Deficiency)
2. Explain Glycolysis pathway. Mention its net gain of ATPs in anaerobic condition.
3. Explain any 3 viral infections with its causes.

**II. Write Notes on:**

**(8 X 5 = 40)**

1. Write a short note on Trace elements?
2. Mention the factors affecting Enzyme activity.
3. Explain parasitic infections.
4. Write about i) Buffers ii) Indicators?
5. Mention the biological importance of proteins.
6. Explain Atrophy.
7. Give any 5 morphological pattern of acute inflammation.
8. Mention the causes of cell injury.

**III. Short Answers on:**

**(10 X 3 = 30)**

1. What is meant by Zwitter ion?
2. Write any 3 important functions of Sodium and its deficiency?
3. Define i) Isoenzymes ii) Holoenzymes
4. Define Derived lipids with example.
5. Write a short note on Thiamine.
6. What is meant by Inflammation?
7. Define Cell injury and its types.
8. Mention any 3 chemical mediators of inflammation.
9. Define Metaplasia.
10. What is the fate of acute inflammation?

[LF 0212]

AUGUST 2014

Sub.Code :1402

**B.SC. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY**

**FIRST YEAR**

**Paper II – BIO- CHEMISTRY AND PATHOLOGY**

*Q.P Code : 801402*

**Time : Three hours**

**Maximum : 100 Marks**

**Answer All Questions**

**I. Elaborate on:**

**(3 X 10 = 30)**

1. Write about Classification of Enzymes
2. Elaborate on inflammation
3. Give an account on Glycolysis

**II. Write Notes on:**

**(8 X 5 = 40)**

1. Explain Mechanism of cell injury
2. Write about Enzyme inhibition
3. Write about Fungal infections
4. Give an account on Disorders of immune system
5. Explain Enzyme Pattern in diseases
6. Explain about Glycogenesis
7. Caloric value of food stuffs
8. Write notes on Specific Dynamic Action

**III. Short Answers on:**

**(10 X 3 = 30)**

1. What is a Balanced Diet?
2. Define Enzyme
3. Give Example for Bacterial infection
4. Define Molality
5. What is cell differentiation?
6. Explain Necrosis
7. Write notes on Kwashiorkor
8. What is Chronic inflammation?
9. Define edema
10. What is Acidosis?

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[LG 0215]

FEBRUARY 2015

Sub.Code :1402

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY**

**FIRST YEAR**

**Paper II – BIO- CHEMISTRY AND PATHOLOGY**

*Q.P Code : 801402*

**Time : Three Hours**

**Maximum : 100 Marks**

**Answer All Questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. The factors affecting enzyme activity. Define an enzyme. Explain the usefulness of serum enzymes in myocardial infarction.
2. Glycolytic Pathway.
3. The list of various cellular adaptations and briefly explain each adaptation with an example.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Classify proteins.
2. The functions of lipids.
3. How calcium level is maintained in blood?
4. What is an acid and a base? Metabolic acidosis and alkalosis.
5. Aquired immunodeficiency syndrome.
6. TORCH complex.
7. Cysticercosis.
8. Sarcoidosis.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Basal Metabolic Rate.
2. Three different B complex vitamins and their functions.
3. Functions of protein.
4. Glycogenolysis. What is its usefulness?
5. What are co-enzymes? Give two examples.
6. Define hypertrophy.
7. What is bacterial endocarditis?
8. List hypersensitivity reactions.
9. Give two types of cell injury.
10. Three types of cellular adaptations.

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[LH 0815]

AUGUST 2015

Sub.Code :1402

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY**

**FIRST YEAR**

**Paper II – BIOCHEMISTRY AND PATHOLOGY**

*Q.P Code : 801402*

**Time : Three Hours**

**Maximum : 100 Marks**

**Answer All Questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Write in detail about functions and classification of Proteins.
2. Explain complete oxidation of glucose with energetic.
3. Elaborate on disorders of immune system.

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Sarcoidosis.
2. Rheumatic heart disease.
3. Causes of cell injury.
4. Glycogenolysis.
5. Any 2 water soluble vitamins.
6. Phospholipids.
7. General features of immune system.
8. Competitive and Non competitive inhibition.

**III. Short Answers on:**

**(10 x 3 = 30)**

1. Apoptosis.
2. T Cells.
3. Unsaturated fatty acids.
4. Irreversible reactions of Glycolysis.
5. Balanced diet.
6. Innate immunity.
7. Pellagra.
8. Allosteric inhibition.
9. Essential fatty acids.
10. Hypokalemia.

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**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY**

**FIRST YEAR**

**Paper II – BIOCHEMISTRY AND PATHOLOGY**

*Q.P Code : 801402*

**Time : Three Hours**

**Maximum : 100 Marks**

**Answer All Questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Write in detail about classification of lipids.
2. Explain chronic and acute inflammation.
3. Explain in detail metabolism of glycogen.

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Kwashiorkor.
2. HMP shunt.
3. Denaturation of proteins.
4. Mechanism of cell injury.
5. Acute inflammation.
6. Cellular adaptation of growth and disorder.
7. Viral infections.
8. Classification of enzymes.

**III. Short Answers on:**

**(10 x 3 = 30)**

1. Hyponatremia.
2. Necrosis.
3. Basal Metabolic rate.
4. Thymus.
5. SCID.
6. Cell mediated immunity.
7. Gluconeogenesis.
8. Lipoproteins.
9. Bacterial infection.
10. (a) Zwitter ion  
(b) Isoelectric pH.

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[LJ 0816]

AUGUST 2016

Sub.Code :1402

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY**

**FIRST YEAR**

**Paper II – BIOCHEMISTRY AND PATHOLOGY**

*Q.P Code : 801402*

**Time : Three Hours**

**Maximum : 100 Marks**

**Answer All Questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Give an account on Glycolysis.
2. What is a protein? How are proteins classified? Mention its function.
3. Explain the classification, sources and functions of vitamins.

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Sarcoidosis.
2. Gangrene.
3. Calciphylaxis.
4. Acquired immunodeficiency syndrome.
5. Specific dynamic action.
6. Differentiate between active and passive immunity.
7. What is the significance of Henderson equation?
8. Glycogen.

**III. Short Answers on:**

**(10 x 3 = 30)**

1. Give an example for Gram negative and Gram positive bacteria.
2. What is the function of plasma cells?
3. What is the principle of Spectrophotometer?
4. What is Wilson's disease?
5. Write about Diabetes Mellitus.
6. Write about Diabetes Insipidus.
7. What is stereoisomerism?
8. Pellagra.
9. Hypokalemia.
10. Calcification.

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[LK 0217]

FEBRUARY 2017

Sub.Code :1402

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY  
FIRST YEAR**

**Paper II – BIOCHEMISTRY AND PATHOLOGY**

***Q.P Code : 801402***

**Time : Three Hours**

**Maximum : 100 Marks**

**Answer All Questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. What are immunoglobulins? Please explain the different properties of the 5 types.
2. Elaborate on diabetes mellitus.
3. Elaborate on disorders of immune system.

**II. Write Notes on:**

**(8 x 5 = 40)**

1. Functions of proteins.
2. Rheumatic Heart.
3. Write about fungal infections.
4. Caloric value of food stuff.
5. Explain atrophy.
6. Explain parasitic infections.
7. Biologic significance of urea.
8. Buffers.

**III. Short Answers on:**

**(10 x 3 = 30)**

1. What is meant by Zwitterion?
2. Define (a) Isoenzymes (b) Holo – enzyme.
3. Define cell injury and its types.
4. Define Neoplasia.
5. Define Hypertrophy.
6. Define Hyperplasia.
7. Define Metaplasia.
8. Define Metastasis.
9. What are Ketone bodies Give Examples?
10. What is vitamin B12, What is its significance?

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**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY**

**FIRST YEAR**

**PAPER II – BIOCHEMISTRY AND PATHOLOGY**

*Q.P. Code: 801402*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Classification, sources and functions of Vitamins.
2. Detailed note on lipids and its classification.
3. Write a detailed note on general principles of microbial pathogenesis.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Mediators of inflammation.
2. Differentiate between active and passive immunity.
3. Sarcoidosis.
4. HMP shunt.
5. Apoptosis and necrosis.
6. Diabetes mellitus.
7. Enzyme and its classification.
8. Principle behind Benedicts test and heat coagulation test.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Buffers.
2. Marasums.
3. Respiratory quotient.
4. Trace elements
5. Molality and molarity.
6. Functions of plasma cell.
7. Hypokalemia.
8. Necrosis.
9. Basal metabolic rate.
10. What is Hyperplasia? Mention one example.

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**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY  
FIRST YEAR  
PAPER II – BIOCHEMISTRY AND PATHOLOGY**

*Q.P. Code: 801402*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Define inflammation. Write a detailed note on chronic and acute inflammation.
2. List various types of cellular adaptations and explain each adaptation with an example.
3. Elaborate on Glycolytic pathway.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Immunoglobulins and its types.
2. Causes of cell injury.
3. Rheumatic heart disease.
4. General principles of microbial pathogenesis.
5. AIDS.
6. Metabolic acidosis and alkalosis.
7. Water soluble vitamins.
8. Kwashiorkor.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Define Ph.
2. Benedicts test.
3. Thymus.
4. Pellagra.
5. Functions of lipids.
6. B-cell and its functions.
7. What is H1N1?
8. Balance diet.
9. Gangrene.
10. Essential fatty acids.

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**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY  
FIRST YEAR  
PAPER II – BIOCHEMISTRY AND PATHOLOGY**

*Q.P. Code: 801402*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:** **(3 x 10 = 30)**

1. Explain in detail about the sources, requirements, functions and deficiency states of fat soluble Vitamins.
2. Define inflammation. Enumerate the signs of inflammation. Explain the sequential vascular and cellular events of acute inflammation.
3. Define respiratory acidosis. Explain the investigation related to the biochemical changes that take place in this condition.

**II. Write notes on:** **(8 x 5 = 40)**

1. Marasmus.
2. Morphological features of rheumatic heart disease.
3. Dengue fever.
4. Reversible cell injury.
5. Mechanisms of autoimmunity.
6. Coagulation cascade.
7. Glycogenolysis.
8. Factors affecting enzyme activity.

**III. Short answers on:** **(10 x 3 = 30)**

1. Define metaplasia.
2. Write any three fungal infections with causes.
3. Types of necrosis.
4. Deficiency state of Vitamin B<sub>12</sub>.
5. List any four opportunistic infections in Acquired immuno deficiency syndrome.
6. What are ketone bodies? Give examples.
7. Define normality.
8. What is acidosis?
9. What are co-enzymes? Give two examples of co-enzymes.
10. Origin and function of plasma cells.

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY  
FIRST YEAR  
PAPER II – BIOCHEMISTRY AND PATHOLOGY**

*Q.P. Code: 801402*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:** **(3 x 10 = 30)**

1. Describe the pathogenesis, clinical features and morphological features of rheumatic heart disease.
2. Draw structure of human immuno deficiency virus. Explain in detail the routes of transmission, pathogenesis, clinical features and lab diagnosis of acquired immuno deficiency syndrome.
3. Write in detail about classification and functions of proteins.

**II. Write notes on:** **(8 x 5 = 40)**

1. Kwashiorkor.
2. Generation of arachidonic acid metabolites and their role in inflammation.
3. Hepatitis B virus.
4. Metabolism of vitamin D.
5. Innate immunity.
6. Draw a structure of immunoglobulin. Add a note on the types of immunoglobulin.
7. Significance of Henderson equation.
8. Explain any two viral infections with its cause.

**III. Short answers on:** **(10 x 3 = 30)**

1. Define hypertrophy.
2. Give three examples for gram positive bacteria.
3. Types of necrosis.
4. Deficiency state of vitamin D.
5. Scurvy.
6. List any four sexually transmitted diseases.
7. What are ketone bodies? Give examples.
8. Define molality.
9. Write any three fungal infections with its cause.
10. Define (i) Isoenzymes (ii) Holoenzymes

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 0321]

**MARCH 2021**

**Sub. Code: 1402**

**(AUGUST 2020 EXAM SESSION)**

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY**

**FIRST YEAR (Regulations 2010-2011 & 2014-2015 )**

**PAPER II – BIOCHEMISTRY AND PATHOLOGY**

*Q.P. Code : 801402*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Explain in detail the pathogenesis, clinical features, morphological features and lab diagnosis of Tuberculosis.
2. Define inflammation. Enumerate the signs of inflammation. Write a note on chemical mediators of inflammation.
3. What are immunoglobulins? Explain the characteristic properties of the different types of immunoglobulins.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Metabolism of Vitamin D.
2. Protein energy malnutrition.
3. Malaria.
4. Irreversible cell injury.
5. Adaptive immunity.
6. Classification of proteins.
7. Explain any two viral infections with its cause.
8. Glycogenolysis.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Define hyperplasia.
2. Give three examples for gram negative bacteria.
3. Types of necrosis.
4. Deficiency state of Vitamin C.
5. List any four health care associated infections.
6. What are ketone bodies? Give examples.
7. Pellagra.
8. Give examples for physiologic hypertrophy.
9. What is H1N1.
10. Define (i) Isoenzymes (ii) Holoenzymes

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

**[AHS 0422]**

**APRIL 2022**

**Sub. Code: 1402**

**(FEBRUARY 2021 & AUGUST 2021 EXAM SESSIONS)**

**FIRST YEAR(From 2010-2011 & 2014-2015 onwards)**

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY**

**PAPER II-BIO-CHEMISTRY & PATHOLOGY**

***Q.P NO. 801402***

**Time: Three Hours**

**Maximum : 100 Marks**

**Answer All questions**

**I. Elaborate on : (3X10=30)**

1. Define cell injury. Explain various causes and mechanism of cell injury.
2. Define glycolysis. Elaborate the pathway on aerobic phase of glycolysis.
3. Define vitamins. Classify vitamins and elaborate on vitamin D.

**II. Write Notes on : (8X5=40)**

1. Chemical mediators of inflammation.
2. Discuss about active and passive immunity.
3. Rheumatic heart disease.
4. Basal metabolic rate.
5. Explain enzyme inhibition and its types.
6. Explain the principle, procedure and interpretation of heat coagulation test.
7. Phospholipids and their functions.
8. What is normal blood pH? Explain the causes and compensation of metabolic acidosis.

**III. Short Answers on : (10X3=30)**

1. Define necrosis and mentions its types.
2. Define metaplasia.
3. Mention any 3 parasites and an infection caused by them.
4. Mention any 3 major disorders of immune system.
5. Hypokalemia.
6. Dietary fibers and its importance.
7. Dietary sources and functions of calcium.
8. Active site.
9. What are disaccharides? Give example.
10. Define (a) Buffer (b) Normality.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

**[AHS 1122]**

**NOVEMBER 2022**

**Sub. Code: 1402**

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY**

**FIRST YEAR (Regulations 2010-2011 & 2014-2015)**

**PAPER II – BIOCHEMISTRY & PATHOLOGY**

***Q. P. Code: 801402***

**Time: Three hours**

**Maximum : 100 Marks**

**Answer ALL Questions**

**I. Elaborate on:** **(3 x 10 = 30)**

1. Elaborate on different types of immunity and their mechanism.
2. Elaborate on dietary sources, biochemical role and deficiency manifestations of Vitamin A.
3. Define inflammation. What are the types and signs of inflammation? Discuss on chemical mediators of inflammation.

**II. Write notes on:** **(8 x 5 = 40)**

1. Classification of Lipids.
2. Neurons and its types.
3. Balanced diet.
4. Parasitic Infections.
5. Isoenzymes.
6. Human Immunodeficiency Virus.
7. Wound healing.
8. Factors maintaining blood glucose level.

**III. Short answers on:** **(10 x 3 = 30)**

1. What are essential amino acids?
2. Define Hypertrophy.
3. Write the normal values of Serum:  
(i) Sodium (ii) Potassium (iii) Chloride.
4. Define Edema.
5. Define Coenzyme with examples.
6. T- cells.
7. Beriberi.
8. Apoptosis.
9. Define pH and write Hendersen Hesselbach equation.
10. Define Metaplasia.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 0423]

APRIL 2023

Sub. Code: 1402

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY  
FIRST YEAR (Regulations 2010-2011, 2014-2015 & 2018-2019 onwards)  
PAPER II - BIOCHEMISTRY & PATHOLOGY**

*Q.P. Code: 801402*

**Time: Three Hours**

**Maximum : 100 Marks**

**Answer All questions**

**I. Elaborate on :**

**(3 X 10 = 30)**

1. Define Enzyme. Explain in detail about factors affecting Enzyme activity.
2. Define Lipids. Classify Lipids and write the importance of Essential Fatty Acids in diet.
3. Define Inflammation. Mention its signs and explain in detail about vascular and cellular events of Acute Inflammation.

**II. Write Notes on :**

**(8 X 5 = 40)**

1. Pathogenesis of Viral infections.
2. Causes of cell injury.
3. Give an account on disorders of immune system.
4. Classification and functions of proteins.
5. Kwashiorkor and Marasmus.
6. Sources and functions of Calcium.
7. Write the sources, functions and deficiency manifestations of Vitamin A.
8. Enzyme inhibition.

**III. Short Answers on :**

**(10 X 3 = 30)**

1. Define cell injury and its types.
2. What is Gangrene?
3. Mention three fungal infections and its causes.
4. T cell and its function.
5. Define hyperplasia.
6. Define isoenzyme with example.
7. Protein denaturation.
8. Normal value in blood (Reference range)  
i) Sodium                      ii) Potassium                      iii) Chloride.
9. Mention the calorific value of foods.
10. Define (a) pH                      (b) Molarity.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 1123]

**NOVEMBER 2023**

**Sub. Code: 1402**

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY  
FIRST YEAR (Regulations 2010-2011, 2014-2015 & 2018-2019 onwards)**

**PAPER II - BIOCHEMISTRY & PATHOLOGY**

*Q.P. Code: 801402*

**Time: Three Hours**

**Maximum : 100 Marks**

**Answer All questions**

**I. Elaborate on :** **(3 X 10 = 30)**

1. Define Inflammation. Explain acute and chronic inflammation.
2. Define Carbohydrates. Elaborate on classification of carbohydrates in detail with example.
3. Classify Proteins based on function and nutritional importance.

**II. Write Notes on :** **(8 X 5 = 40)**

1. Sarcoidosis.
2. List out cellular adaptations and explain any two.
3. Give an account on disorders of immune system.
4. Mechanism of wound healing.
5. Vitamin K – sources, functions and deficiency manifestations.
6. Enzyme pattern in myocardial infarction.
7. Factors affecting enzyme activity.
8. Plasma lipoproteins and their functions.

**III. Short Answers on :** **(10 X 3 = 30)**

1. Define Edema.
2. Define Neoplasia.
3. Causes of cell death.
4. Innate immunity.
5. What is meant by reversible and irreversible cell injury?
6. Define Vitamins and classify them.
7. Coenzyme.
8. Essential Fatty Acids.
9. Beriberi.
10. Define (a) Isoelectric pH (b) Normality.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

**[AHS 0424]**

**APRIL 2024**

**Sub. Code: 1402**

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY  
FIRST YEAR (Regulations 2010-2011, 2014-2015 & 2018-2019 onwards)**

**PAPER II-BIOCHEMISTRY & PATHOLOGY**

***Q.P. Code: 801402***

**Time: Three Hours**

**Answer All questions**

**Maximum: 100 Marks**

**I. Elaborate on :**

**(3 X 10 = 30)**

1. Explain in detail about dietary sources, biochemical functions and deficiency manifestations of Vitamin D.
2. Write in detail about Protein energy malnutrition.
3. Define Cell injury. Explain in detail about the causes and mechanisms of Cell injury.

**II. Write Notes on :**

**(8 X 5 = 40)**

1. Basal Metabolic Rate.
2. Classification of Amino acids.
3. Polyunsaturated Fatty acids.
4. Define and classify Hypersensitivity reactions. Explain Type I Hypersensitivity.
5. Morphological pattern in acute inflammation.
6. Competitive inhibition.
7. Parasitic infections.
8. Cellular adaptations.

**III. Short Answers on :**

**(10 X 3 = 30)**

1. Granulomatous inflammation.
2. Name three autoimmune disorders.
3. Active site.
4. Name three viral infections.
5. Apoptosis.
6. Rheumatic Heart disease.
7. Anaerobic Glycolysis.
8. Define Metaplasia and give an example.
9. Define pH. What is the normal pH of blood?
10. Functions of Protein.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

[AHS 1125]

**NOVEMBER 2025**

**Sub. Code: 1402**

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY  
FIRST YEAR (Regulations 2010-2011, 2014-2015 & 2018-2019 onwards)  
PAPER II-BIO-CHEMISTRY & PATHOLOGY**

*Q.P. Code: 801402*

**Time: Three Hours**

**Answer All Questions**

**Maximum: 100 Marks**

**I. Elaborate on :** **(3 x 10 = 30)**

1. Explain in detail about Isoenzymes and enzyme pattern in various diseases.
2. Write in detail about Glycogen metabolism.
3. Explain the cellular responses to stress and noxious stimuli. Add a note on cellular adaptations of growth and differentiation.

**II. Write Notes on:** **(8 x 5 = 40)**

1. Balanced diet.
2. Classification of lipids.
3. Discuss about active and passive immunity.
4. Biochemical functions of vitamin B6.
5. Chronic inflammation.
6. Mechanism and types of Shock.
7. Reversible and irreversible cell injury.
8. Write a note on Aerobic glycolysis.

**III. Short Answers on:** **(10 x 3 = 30)**

1. Define Molality and Molarity.
2. Calorific value of food.
3. Coenzymes.
4. Marasmus.
5. Mention three bacterial infections.
6. Hyponatremia.
7. Coronary Artery disease.
8. Chemical mediators of inflammation.
9. Name any three mucopolysaccharides and its function.
10. Allosteric enzymes.

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