

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

[AHS 0423]

APRIL 2023

Sub. Code: 1508

B.Sc. CARDIAC TECHNOLOGY

FIRST YEAR (Regulations 2014-2015, 2018-2019 & 2021-2022 onwards)

PAPER I – APPLIED ANATOMY, PHYSIOLOGY AND BIO-CHEMISTRY

RELATED TO CARDIAC TECHNOLOGY

Q. P. Code: 801508

Time: Three hours

Maximum : 100 Marks

Answer ALL Questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe in detail about the blood supply of the heart. Add a note on its Applied Anatomy.
2. Define Cardiac Output. Describe in detail about the factors regulating the cardiac output.
3. What are the biochemical functions of Calcium in our body? Elaborate on how plasma calcium level is maintained.

II. Write notes on:

(8 x 5 = 40)

1. Bronchopulmonary segments.
2. Coverings of the Heart.
3. Structure and functions of Nephron.
4. Pleura.
5. Role of kidneys in acid base regulation.
6. Biochemical functions of Vitamin A.
7. Immunoglobulins.
8. Describe the intrinsic pathway of Clotting.

III. Short answers on:

(10 x 3 = 30)

1. Draw the diagram of Scapula and name its parts.
2. Atrioventricular node.
3. Colloidal Osmotic Pressure.
4. Cartilages of the larynx.
5. Essential Hypertension.
6. Valsalva manoeuvre.
7. Name the physiological buffers in our body. Also mention the predominant buffer system in plasma.
8. Landsteiner's law.
9. Competitive inhibition with an example.
10. Write the normal reference values of
 - i) Thyroid Stimulating Hormone
 - ii) Blood pH
 - iii) Fasting blood glucose.

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[AHS 1123]

NOVEMBER 2023

Sub. Code: 1508

B.Sc. CARDIAC TECHNOLOGY

FIRST YEAR (Regulations 2014-2015, 2018-2019, 2020-2021 & 2021-2022 onwards)

PAPER I – APPLIED ANATOMY, PHYSIOLOGY AND BIO-CHEMISTRY

RELATED TO CARDIAC TECHNOLOGY

Q. P. Code: 801508

Time: Three hours

Maximum : 100 Marks

Answer ALL Questions

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

1. Explain the two main mechanisms that Control Blood Pressure.
2. Describe the circulation of the blood through the Lungs. Name the main vessels involved.
3. Write a detailed note on Lipoprotein in Atherosclerosis.

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

1. Blood supply of Heart.
2. Systolic and diastolic Blood Pressure.
3. Structure of Nephrons.
4. Cartilages.
5. Oxygen transport in the blood.
6. Muscle of Respiration.
7. Classification of Aminoacids.
8. Describe regulation, characteristics and general functions of WBCs.

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

1. Structure associated with the Pharynx.
2. Thyroid cartilage.
3. Types of Blood vessels.
4. Erythrocytes.
5. Diffusion.
6. Plasma protein.
7. Functions of Glucocorticoids.
8. Lobes of right and left lung.
9. Functions of Fatty acids.
10. Functions of Veins.

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

[AHS 0424]

APRIL 2024

Sub. Code: 1508

B.Sc. CARDIAC TECHNOLOGY

FIRST YEAR (Regulations 2014-2015, 2018-2019, 2020-2021 & 2021-2022 onwards)

PAPER I – APPLIED ANATOMY, PHYSIOLOGY AND BIOCHEMISTRY

RELATED TO CARDIAC TECHNOLOGY

Q. P. Code: 801508

Time: Three Hours

Answer All questions

Maximum: 100 Marks

I. Elaborate on :

(3 X 10 = 30)

1. Describe the types of Tissues with suitable diagrams.
2. Define Cardiac output. Describe in detail about the factors regulating the Cardiac output.
3. Explain the factors affecting the velocity of Enzyme action.

II. Write Notes on :

(8 X 5 = 40)

1. External features of Heart.
2. Vertebral column.
3. Functions of the Sino-atrial node.
4. Cardiovascular reflexes.
5. Valves of the Heart.
6. Cardio-Respiratory changes during severe exercises.
7. Hypothalamic hormones.
8. Functions and deficiency of Vitamin A.

III. Short Answers on :

(10 X 3 = 30)

1. Pleural recesses.
2. Muscles of Thorax.
3. Flexor muscles of Arm.
4. Baro-receptor reflex mechanism.
5. Fat Soluble Vitamins.
6. Essential Hypertension.
7. Respiratory quotient.
8. Classification of the Lipids.
9. Purines and Pyrimidines.
10. Mechanism of actions of Hormones.

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

[AHS 1125]

NOVEMBER 2025

Sub. Code: 1508

B.Sc. CARDIAC TECHNOLOGY

FIRST YEAR (Regulations 2014-2015, 2018-2019 & 2021-2022 onwards)

**PAPER I – APPLIED ANATOMY, PHYSIOLOGY AND BIOCHEMISTRY
RELATED TO CARDIAC TECHNOLOGY**

Q. P. Code: 801508

Time: Three hours

Maximum : 100 Marks

Answer ALL Questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe the Beta-Oxidation of Fatty Acids and mention the energetic of Palmitic Acid oxidation.
2. Anatomy of Coronary circulation.
3. Define Cardiac cycle and explain about its events.

II. Write notes on:

(8 x 5 = 40)

1. Electrical potential in SA node.
2. Pacemaker.
3. Cardiac cycle.
4. Functions of Blood.
5. Anticoagulants.
6. Transfusion reactions due to Rh incompatibility.
7. Beriberi.
8. Properties of Cardiac muscles.

III. Short answers on:

(10 x 3 = 30)

1. Cardiac output.
2. Frank Starling Law.
3. Chambers of Heart.
4. Stroke volume.
5. Muscles of Breathing.
6. Tidal volume.
7. Osmosis.
8. Types of Tissue.
9. What is Table sugar?
10. Functions of Sodium in the body.
