



SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Second Year (Semester-III)

March 2025 Examination

B.Sc. Cardiac care Technology (CCT)

Time : 3 Hrs.

Paper – II

[Max. Marks : 100]

Introduction to Cardiac care Technology

Q.P Code : J3760

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

Long Essay

2 X 10= 20 Marks

1. Exercise stress testing protocols, observations and contraindications
2. Discuss the different types of waves and intervals in normal electrocardiogram

Short Essay (any ten)

10 X 5= 50 Marks

3. Name the ECG leads and write how to place it
4. Write a note on limb leads
5. T wave and ST segment
6. Electrical axis deviation
7. Mechanism and ECG changes noted in complete RBBB
8. Indications for stopping Exercise testing
9. Mechanism and ECG changes noted in complete LBBB
10. P wave genesis in detail
11. Hexaxial reference system in detail
12. Mechanism of incomplete RBBB
13. ECG in Left Ventricular Hypertrophy
14. ECG changes noted in Fascicular blocks

Short Answers (any ten)

10 X 3= 30 Marks

15. Draw and label Einthoven's triangle
16. Tall T wave and T wave inversions
17. ECG paper
18. U wave
19. Genesis of QRS complex
20. Preparation of patient for TMT
21. Various ST patterns described in Treadmill Test
22. Left atrial enlargement criteria in electrocardiogram
23. Heart Rate calculation in normal electrocardiogram
24. ECG in RA enlargement
25. ECG criteria of RVH
26. SA node



SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH
(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Second Year (Semester-III)
March 2025 Examination

B.Sc. Cardiac care Technology (CCT)

Time: 2.30 Hrs.

[Max. Marks: 80]

PAPER-IV

Medicine Relevant to Cardiac care Technology

Q.P Code: J3780

Your answers should be specific to the questions asked.
Draw neat labelled diagrams wherever necessary

Long Essay

2X10=20 Marks

1. Mention few rheumatic heart diseases. Discuss clinical features, investigations and management of mitral stenosis
2. Explain cause, clinical manifestation diagnosis and treatment of Patent ductus arteriosus

Short Essay (Answer any Six)

6X5=30 Marks

3. Discuss risk factors, pathophysiology and complications of atherosclerosis
4. Obstructive versus restrictive pulmonary disease
5. Mitral regurgitation- definition, aetiology and diagnosis
6. Anemia- presentation, causes, investigations and diagnosis
7. COPD
8. Clinical manifestations in RHD
9. Etiology and pathophysiology of DCM
10. Classification and pathophysiology of HCM

Short Answers (Answer any ten)

10X3=30 Marks

11. Bleeding time
12. Signs and symptoms of pulmonary edema
13. Describe LVH in HTN patients
14. Describe cyanotic and acyanotic CHD with example
15. Clinical presentation of anemia
16. What are stages of normal coagulation?
17. Diagnosis of RHD
18. Pulmonary function test
19. Write a short note on truncus arteriosus
20. Write a short note on PDA
21. Define HTN and classify it
22. Pathophysiology of pulmonary edema



SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Second Year Semester-III

March 2025 Examination

B.Sc. Cardiac Care Technology

Time: 2.30 Hrs.

Paper – I

[Max. Marks: 80]

Applied Pathology & Microbiology

(Use separate answer booklet for Section A & B)

Section – A

Applied Pathology (40 Marks)

Q.P Code : K3615

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

LONG ESSAY

1 X 10 = 10 Marks

1. Define atherosclerosis, write briefly its risk factors, pathogenesis, morphology, clinical significance and prevention

SHORT ESSAY

3X 5 = 15 Marks

2. Classify leucocytes. Describe microscopic morphology of leucocytes with a diagram
3. Pathophysiology of left heart failure
4. Classify hemolytic anemia and write a note on its characteristic features

SHORT ANSWERS

5 X 3 = 15 Marks

5. Sudden cardiac death
6. Causes for aortic stenosis
7. Causes for restrictive cardiomyopathy
8. What is Leukemoid reaction and 3 causes
9. Name the clotting factors

Section – B

Applied Microbiology (40 Marks)

Q.P Code : K3616

(Use separate answer booklet for Section-B)

LONG ESSAY

1 X 10 = 10 Marks

1. Enumerate the types of health care associated infection. Discuss in detail the risk factors and infection control practices to prevent catheter associated blood stream infection (3+3+4)

SHORT ESSAY

3 X 5 = 15 Marks

2. Define surgical site infection, its risk factors and infection control practices
3. Enumerate the types of Personal protective equipment's and its uses
4. Describe the Biomedical waste management

SHORT ANSWERS

5 X 3 = 15 Marks

5. List three modes of transmission of HIV infection
6. Mention three important elements of Standard precautions
7. List the Sources and modes of transmission of infection acquired by health care worker
8. Mention three diseases that spread by respiratory route
9. Mention the steps of hand hygiene



SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Second Year (Semester-III)

March 2025 Examination

B.Sc. Cardiac care Technology (CCT)

Time : 2.30 Hrs.

Paper – II

[Max. Marks : 80]

Introduction to Cardiac care Technology

Q.P Code : K3620

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

Long Essay

2 X 10= 20 Marks

1. Explain the indications, contra-indications and uses of Treadmill Exercise testing.
When do you terminate the test? Add a note on different protocols used to do TMT
2. ECG features of RBBB, LBBB, Hemi blocks (Fascicular blocks).

Short Essay

6 X 5= 30 Marks

3. Principles of Electrocardiogram
4. Normal ECG
5. Precordial leads
6. ST segment response in Treadmill testing
7. ECG Criteria for left ventricular hypertrophy
8. Discuss normal and abnormal “P” wave

Short Answers

10 X 3= 30 Marks

9. Discuss unipolar limb leads
10. R-R interval
11. Rhythms in ECG
12. ECG in right ventricular hypertrophy
13. SA Node
14. P Pulmonale
15. U wave
16. Write about Genesis of QRS Complex.
17. ECG paper speed and standardization
18. Criteria for a positive Treadmill test

(2021 -22 BATCH ONLY)



SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH
(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Second Year (Semester-III)

March 2025 Examination

B.Sc. Cardiac Care Technology

Time: 2 Hrs.

[Max. Marks: 40]

Applied Pharmacology

Q.P Code: K3630

Your answers should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

Long essay

1x10=10 Marks

1. Classify cholinergic blocking drugs. Explain mechanism of action, uses and adverse effects of Atropine.

Short essay

3 x 5 = 15 Marks

2. Explain the mechanism, uses and adverse effects of thiazides
3. List the advantages and disadvantages of intravenous route.
4. Explain the mechanism, uses and adverse effects of Ergot alkaloids

Short answer

5 x 3 = 15 Marks

5. Explain mechanism of action, and uses of streptokinase.
6. Write the treatment of anaphylactic shock
7. List three antiplatelet agents and write three uses
8. Mention three uses of pancuronium.
9. Mention three factors affecting bioavailability



SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH
(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Second Year (Semester-III)

March 2025 Examination

B.Sc. Cardiac care Technology (CCT)

Time : 2.30 Hrs.

[Max. Marks: 80]

PAPER-IV

Medicine Relevant to Cardiac care Technology

Q.P Code: K3640

Long Essay

2 X 10= 20 Marks

1. Discuss signs, symptoms, diagnosis and treatment of ischemic heart disease
2. Classification of congenital heart disease. Discuss about ventricular septal defect

Short Essay

6 X 5= 30 Marks

3. Diagnosis and management of ASD
4. Mitral stenosis- definition, etiology and diagnosis
5. Write a short note on PDA
6. Pulmonary function test
7. Obstructive versus restrictive pulmonary disease
8. Management of hypertension

Short Answers

10 X 3= 30 Marks

9. Define coarctation of Aorta
10. Types of cardiomyopathy
11. TOF- clinical and diagnostic features
12. Write a note on Bleeding time
13. Eisenmenger's syndrome
14. Aortic aneurysm
15. Pulmonary edema
16. Risk factors of coronary artery disease
17. Sinus bradycardia
18. Define TAPVC



SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Second Year Semester-III

March 2025 Examination

B.Sc. Cardiac Care Technology

Time: 2.30 Hrs.

Paper – I

[Max. Marks: 80]

Applied Pathology & Microbiology

(Use separate answer booklet for Section A & B)

Section – A

Applied Pathology (40 Marks)

Q.P Code : KA3015

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

LONG ESSAY

1 X 10 = 10 Marks

1. Define atherosclerosis, write briefly its risk factors, pathogenesis, morphology, clinical significance and prevention

SHORT ESSAY

3X 5 = 15 Marks

2. Classify leucocytes. Describe microscopic morphology of leucocytes with a diagram
3. Pathophysiology of left heart failure
4. Classify hemolytic anemia and write a note on its characteristic features

SHORT ANSWERS

5 X 3 = 15 Marks

5. Sudden cardiac death
6. Causes for aortic stenosis
7. Causes for restrictive cardiomyopathy
8. What is Leukemoid reaction and 3 causes
9. Name the clotting factors

Section – B

Applied Microbiology (40 Marks)

Q.P Code : KA3016

(Use separate answer booklet for Section-B)

LONG ESSAY

1 X 10 = 10 Marks

1. Enumerate the types of health care associated infection. Discuss in detail the risk factors and infection control practices to prevent catheter associated blood stream infection (3+3+4)

SHORT ESSAY

3 X 5 = 15 Marks

2. Define surgical site infection, its risk factors and infection control practices
3. Enumerate the types of Personal protective equipment's and its uses
4. Describe the Biomedical waste management

SHORT ANSWERS

5 X 3 = 15 Marks

5. List three modes of transmission of HIV infection
6. Mention three important elements of Standard precautions
7. List the Sources and modes of transmission of infection acquired by health care worker
8. Mention three diseases that spread by respiratory route
9. Mention the steps of hand hygiene

Introduction to Cardiac Care Technology

Q.P Code: KA3020

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

LONG ESSAY

2 X 10 = 20 Marks

1. Define Cardiac cycle. Different phases of cardiac cycle. Wigger's diagram. Events taking place in Cardiac cycle (2+4+2+2)
2. Define LVH. Causes of LVH. Explain ECG manifestation of LVH due to Systolic overload and Diastolic overload? (2+2+3+3)

SHORT ESSAY

6 X 5 = 30 Marks

3. Explain the formation of IVS in detail.
4. Write the causes and ECG Manifestations of Complete and Incomplete RBBB.
5. ECG changes seen in Hyper acute phase and Evolved Phase of STEMI.
6. Explain about vena cava and its branches.
7. ECG changes seen in NSTEMI.
8. Explain the Internal and External Features of RV in detail.

SHORT ANSWERS

10 X 3 = 30 Marks

9. Write about Wellen's syndrome.
10. Write about the Fate of Foramen ovale .Abnormality in the development of IAS.
11. ECG changes seen in LAE.
12. Write about Soklow-Lyon criteria.
13. Write a note on QT Interval.
14. Formation of Heart tube.
15. Write a note on SA Node.
16. ECG Changes seen in complete LBBB.
17. Write about Atrioventricular valves.
18. Explain about stages, action potential of Cardiac muscle.

*** * ***

**SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH
(A DEEMED TO BE UNIVERSITY)**

B.Sc. Allied Health Sciences Second Year (Semester-III)

March 2025 Examination

B.Sc. Cardiac Care Technology

Time: 2.00 Hrs.

[Max. Marks: 40]

Applied Pharmacology

Q.P Code: KA3030

LONG ESSAY

1 X 10 = 10 Marks

1. Define and classify Anti-hypertensive drugs with examples. Explain Mechanism of action, uses and adverse effects of ACE Inhibitors

SHORT ESSAY

3 X 5 = 15 Marks

2. Explain the Phases involved in Biotransformation with examples
3. Define the Classify Anti Arrhythmic drugs with examples
4. Explain the Mechanism of action uses and adverse effects of Hydrocortisone

SHORT ANSWERS

5 X 3 = 15 Marks

5. List 3 examples of Skeletal muscle relaxants with its Adverse effects
6. Give 3 Example of Antiemetic
7. Define Plasma Half Life and Bioavailability
8. Give 3 examples of drugs used in the treatment of angina
9. Give Uses and adverse effects of Heparin

*** * ***



SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Second Year (Semester-III)

March 2025 Examination

B.Sc. Cardiac Care Technology

Time: 2.30 Hrs.

[Max. Marks: 80]

Clinical Cardiology

Q.P Code: KA3040

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

LONG ESSAY

2 X 10 = 20 Marks

1. Define palpitation, etiology of palpitation, pathophysiology in detail (2+4+4).
2. Explain about the Tilt table test in detail.

SHORT ESSAY

6 X 5 = 30 Marks

3. Define Hypertension and explain about classification and clinical features of it.
4. Explain about the types of Angina Pectoris in detail.
5. Explain about paroxysmal Nocturnal dyspnea and orthopnea in detail.
6. Define Pulmonary venous hypertension, causes and its chest X-ray findings.
7. NYHA functional classification of Heart failure.
8. Explain about the central and peripheral cyanosis.

SHORT ANSWERS

10 X 3 = 30 Marks

9. Write a note on jugular venous pulse.
10. List out arterial pulse in specific cardiac disorder.
11. Explain about the characteristics of Angina pectoris.
12. Write a note on Blood pressure monitoring.
13. List out the chest x-ray findings in the congestive cardiac failure.
14. Define Pulmonary hypertension and diagnostic tests for it .
15. Write a note on Cardiac syncope and clinical features of it.
16. Write a note on volume of pulse.
17. Write a note on continuous murmurs.
18. List out the causes and Risk factors of Angina.

*** * ***