



SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Third Year Semester-V

March 2026 Examination

B.Sc. Cardiac Care Technology (CCT)

Time: 3 Hrs.

[Max. Marks: 100]

Cardiac Care Technology Clinical

Q.P Code: J5791

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

I. LONG ESSAY

2 X 10= 20 Marks

1. Describe in detail about the M-mode, two-dimensional and Doppler echocardiographic features of Aortic regurgitation
2. Role of Echocardiography in rheumatic mitral stenosis

SHORT ESSAY (ANY TEN)

10 X 5= 50 Marks

3. Echocardiographic features of aortic stenosis
4. How do you calculate Aortic valve area by Continuity Equation method in echocardiography
5. Echo features of hypertrophic cardiomyopathy
6. Echo features of prosthetic valve dysfunction
7. Echo features of mitral regurgitation
8. Wilkin's score
9. Explain the doppler findings in diastolic dysfunction
10. Echo Features of Dilated Cardiomyopathy
11. Explain pathophysiology and causes of mitral regurgitation
12. What are the causes and pathophysiology of Aortic regurgitation?
13. Assessment of LV systolic function by echocardiography
14. Echo Features in Restrictive Cardiomyopathy

SHORT ANSWERS (ANY TEN)

10 X 3= 30 Marks

15. Carpentier's classification of mitral regurgitation
16. Difference between right and left ventricular chambers
17. Components of TOF
18. What is PDA
19. Rheumatic fever
20. Mitral valve prolapse
21. LV aneurysm
22. RVSP calculation by echocardiography
23. Coarctation of aorta
24. Myxoma
25. Write a note on LA Clot
26. Patient-prosthesis mismatch



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Cardiac Care Technology Applied

Q.P Code: J5792

Your answers should be specific to the questions asked.

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I. Long Essay

2 X 10= 20 Marks

1. Write in detail about the ECG changes seen in anterior wall myocardial infarction and inferior wall myocardial infarction
2. ECG changes seen in Right bundle branch block and Left bundle branch block

II. Short Essay (any ten)

10 X 5= 50 Marks

3. ECG changes seen in TOF and Coarctation of aorta
4. ECG changes in various types of ASD
5. Evaluation of blood pressure
6. Define aortic stenosis. ECG changes seen in aortic stenosis
7. Define mitral stenosis. ECG changes seen in mitral stenosis
8. ECG criteria for RVH
9. ECG in posterior wall myocardial infarction
10. ECG criteria for Left ventricular hypertrophy
11. ECG criteria for left anterior hemi block (LAHB) and left posterior hemi block (LPHB)
12. WPW Syndrome
13. ECG criteria for Left atrial abnormality and right atrial abnormality
14. ECG changes seen in mitral regurgitation

III. Short Answers (any ten)

10 X 3= 30 Marks

15. WPW syndrome
16. ECG in Pericardial Effusion
17. Name any three complications of myocardial infarction
18. True and technical dextrocardia
19. ECG in atrial fibrillation
20. Classification of hypertension
21. Components of TOF
22. Types of VSD
23. How do you differentiate left ventricle from right ventricle?
24. ECG in ventricular Tachycardia
25. Indications and Complications of TEE
26. ECG findings in acute pericarditis

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[Max. Marks: 100]

Cardiac Care Technology Advanced

Q.P Code: J5793



I. LONG ESSAY

2 X 10= 20 Marks

1. Discuss in detail about the indications, procedure and complications of Aortic valve Balloon valvuloplasty
2. Tread mill Test - indications, contraindications and complications

II. SHORT ESSAY (any ten)

10 X 5= 50 Marks

3. Wilkin's score
4. Pulmonary balloon valvuloplasty- procedure and complications
5. Mitral valve Balloon valvuloplasty –materials used and procedure
6. Adult basic life support- algorithm
7. Holter monitoring- indications, procedure
8. Criteria for strongly positive TMT
9. Defibrillator – indications, procedure to use and complications
10. Indications, contra indications and complications of PTMC
11. Write a note on myocardial perfusion scan
12. Adult advanced cardiac life support- algorithm
13. How do you interpret a TMT
14. ECG in Hyperkalemia

III. SHORT ANSWERS (any ten)

10 X 3= 30 Marks

15. Conduction system of the heart
16. Atropine
17. Classify congenital heart disease
18. Ventricular fibrillation
19. Cardioversion
20. ECG in atrial fibrillation
21. Complications of PDA device closure
22. Ventricular premature complexes
23. ECG in Hypokalaemia
24. Artificial respiration
25. Sinus tachycardia and sinus bradycardia
26. ECG in Heart blocks

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B.Sc. Allied Health Sciences Third Year Semester-V

March 2026 Examination

B.Sc. Cardiac Care Technology (CCT)

Time: 2.30 Hrs.

[Max. Marks: 80]

Cardiac Care Technology- Clinical

Q.P Code: K5681

I. Long Essay

2 X 10= 20 Marks

1. Discuss in detail about the echocardiographic assessment of aortic stenosis
2. Wall segments in detail and assessment of left ventricular systolic function by Echocardiographic technique

II. Short Essay

6 X 5= 30 Marks

3. Severity assessment of mitral stenosis by echocardiography
4. Wilkins score
5. Severity assessment of aortic regurgitation by echocardiography
6. RV systolic function assessment by Echocardiography
7. Echocardiographic assessment of Patent ductus arteriosus
8. Severity assessment of mitral regurgitation by echocardiography

III. Short Answers

10 X 3= 30 Marks

9. Grades of LV diastolic dysfunction in echocardiography
10. Aortic aneurysm
11. MAPSE
12. Draw diagram of normal M-mode of Mitral Valve
13. Echo in Hypertrophic Cardiomyopathy
14. E point septal separation
15. Echo features of tetralogy of fallot (TOF)
16. Echo in Mitral Valve Prolapse
17. Echo in Dilated Cardiomyopathy
18. ASD and VSD types



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Time: 2.30 Hrs.

[Max. Marks: 80]

Cardiac Care Technology Applied

Q.P Code: K5682

I. LONG ESSAY

2 X 10= 20 Marks

1. Mention indications and contraindications of Transesophageal Echocardiography (TEE). What are the complications you expect while performing TEE?
2. Define Hypertension. Classify hypertension. ECG criteria for LVH

II. SHORT ESSAY

6 X 5= 30 Marks

3. ECG changes in various types of ASD
4. ECG changes seen in mitral stenosis
5. ECG in pericardial effusion
6. ECG changes in anterior wall MI
7. ECG Changes in inferior wall MI
8. Right bundle branch block – ECG criteria

III. SHORT ANSWERS

10 X 3= 30 Marks

9. ECG in atrial fibrillation
10. How do you recognize LBBB in ECG
11. ECG in aortic stenosis
12. Mitral valve apparatus
13. ECG in ventricular Tachycardia
14. WPW syndrome
15. ECG Changes in Mitral Regurgitation
16. Wellen's syndrome
17. Types of cardiomyopathies and its ECG Changes.
18. True and technical dextrocardia

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B.Sc. Cardiac Care Technology (CCT)

Time: 2.30 Hrs.

[Max. Marks: 80]

Cardiac Care Technology Advanced

Q.P Code: K5683



I. LONG ESSAY

2 X 10= 20 Marks

1. Discuss in detail about the indications, procedure and complications of Aortic Valve Balloon valvuloplasty
2. Holter monitoring- patient preparation, procedure and usefulness

II. SHORT ESSAY

6 X 5= 30 Marks

3. Pulmonary balloon valvuloplasty – procedure and complications
4. Adult Advanced Cardiac life support algorithm
5. Defibrillator – indications, procedure to use and complications
6. Write a note on PDA coil closure
7. Wilkin's score
8. TMT- procedure and usefulness

III. SHORT ANSWERS

10 X 3= 30 Marks

9. Sinus rhythm
10. ECG in hyperkalemia
11. Ventricular fibrillation
12. Complications of PTMC
13. Complications of PDA device closure
14. Ventricular premature complexes
15. ECG in hypokalemia
16. Artificial respiration
17. Atropine
18. Shockable and non shockable rhythms



Congenital Heart Disease -I

Q.P Code : KA5081

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

I. LONG ESSAY

2 X 10 = 20 Marks

1. Write an essay on Coarctation of Aorta -Definition, pathophysiology, Clinical Findings ,echo evaluation .
2. Define Ventricular septal defect .Discuss its types, pathophysiology, echo evaluation and its management .

II. SHORT ESSAY

6 X 5 = 30 Marks

3. Rims of ASD, Indication and Contraindications of device Closure.
4. Write about Rastelli Classification of AVSD.
5. Write a short note on Ebstein's Anomaly.
6. Describe the segmental approach to diagnosis of Congenital heart disease.
7. Echocardiographic Evaluation of Atrial septal defect.
8. Classification of Congenital Heart disease with examples.

III. SHORT ANSWERS

10 X 3 = 30 Marks

9. Management of Coarctation of aorta.
10. ECG changes in VSD
11. Lutembacher's syndrome.
12. Scimitar Syndrome.
13. Write a short note on AP window .
14. Classify situs abnormalities.
15. Write a short note on types of AVSD .
16. ECG changes in ASD
17. Eisenmenger Syndrome.
18. Clinical findings in ASD and VSD .

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[Max. Marks: 80]

Valvular Heart Disease

Q.P Code: KA5090

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

I. LONG ESSAY

2 X 10 = 20 Marks

1. Briefly explain ,ECG, Chest X -ray & echocardiographic findings of Tricuspid regurgitation .
2. Explain the Echocardiographic Findings ,management and Complications of Infective Endocarditis .

II. SHORT ESSAY

6 X 5 = 30 Marks

3. Echocardiographic Findings and severity assessment of Mitral Regurgitation .
4. Explain about the echo findings of Mitral stenosis along with grading of severity.
5. Explain types of Prosthetic valves .
6. How do you Calculate the Aortic Stenosis by Continuity equation .
7. Describe 2D and M-mode features of Tricuspid stenosis .
8. Echocardiographic findings and severity assessment of Aortic Regurgitation .

III. SHORT ANSWERS

10 X 3 = 30 Marks

9. ECG Changes in Aortic Stenosis .
10. Normal M-Mode of Mitral Valve .
11. Define Sphericity Index ,Interpapillary distance .
12. Management of Rheumatic Heart Disease .
13. Write a short note on Balloon Mitral Valvuloplasty .
14. Patient -Prosthesis mismatch .
15. Peripheral signs in Aortic Regurgitation .
16. Explain about Supravalvular Aortic Stenosis
17. Lutembacher's syndrome.
18. Explain Mitral Valve apparatus with neat diagram .

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Time: 2.30 Hrs.

[Max. Marks: 80]

Myocardial and Pericardial Diseases

Q.P Code: KA5100

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

I. LONG ESSAY

2 X 10 = 20 Marks

1. Echocardiographic assessment of Left Ventricular Diastolic Function.
2. Briefly explain the assessment of Right Ventricular Function by echocardiography.

II. SHORT ESSAY

6 X 5 = 30 Marks

3. Anatomy and functions of pericardium.
4. Echocardiographic evaluation of Dilated Cardiomyopathy.
5. Write about anatomical types of Hypertrophic cardiomyopathy.
6. Briefly explain the assessment of Left Ventricular Systolic Function by echo.
7. Left Ventricular non compaction and its echocardiographic features.
8. Write about Speckle tracking Echocardiography

III. SHORT ANSWERS

10 X 3 = 30 Marks

9. ECG in HCM.
10. Tissue Doppler imaging.
11. Myocardial Performance Index.
12. Explain factors contributing to the LVOT obstruction.
13. Wall motion Score Index.
14. Differentiate Pericardial and Pleural effusion in echo.
15. What is EPSS?
16. List Causes for Dilated Cardiomyopathy.
17. Define Strain and its Formula.
18. What is Peripartum Cardiomyopathy?

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