# Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Cardiac Care Technology Degree Examination – 30-May-2024

Time: Three Hours | Max. Marks: 100 Marks

Clinical Cardiac Care Technology – I
Paper – I (RS2)
Q.P. CODE: 2920

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

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. Classify congenital heart disease. Discuss hemodynamic and echo evaluation of VSD.
2. Echocardiographic features of a a) Normal aortic valve b) Aortic regurgitation
3. Wall motion score analysis and correlation with coronary anatomy

SHORT ESSAYS (Answer any Ten) 10 x 5 = 50 Marks

4. Classify cardiac tumors. Discuss LA myxoma.
5. Echo evaluation of pulmonary hypertension
6. Tei index
7. Echocardiographic evaluation of diastolic dysfunction
8. Indication and contraindication of coronary angiogram
9. Write a note on Brady arrhythmia.
10. Echo evaluation of prosthetic heart valve
11. Acute complications of MI
12. Echo evaluation of Dextrocardia
13. Pre and post op evaluation of MVR
14. Pacemakers
15. Caudal view in angiogram
16. Echo features of constrictive Pericarditis
17. Eisenmenger syndrome

SHORT ANSWERS (Answer any Ten) 10 x 3 = 30 Marks

18. Discuss normal ECG.
19. Difference between 2D and 3D echocardiogram
20. TAPSE and MAPSE
21. Echo features of PDA
22. ECG findings in anterior wall MI
23. Angioplasty balloons
24. Draw neat labelled diagram of coronary anatomy.
25. Mitral valve apparatus
26. Diagnostic catheters
27. Tissue Doppler imaging
28. Ventricular fibrillations (VF)
29. Complications of Atrial fibrillation (AF)

# Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (Allied Health sciences) Examination – 03-Jun-2024

Time: Three Hours | Max. Marks: 100 Marks

## CARDIAC CARE TECHNOLOGY
## APPLIED TECHNOLOGY PAPER – II (RS2)
## Q.P. CODE: 2921

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

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. Define Rheumatic fever. Discuss ECG features in Mitral stenosis and Mitral regurgitation.
2. Define congenital heart disease. Discuss ECG features in a) Congenital pulmonary stenosis b) congenital aortic stenosis c) Coarctation of aorta
3. Define acute Pericarditis. Discuss in detail the ECG changes seen in acute Pericarditis and chronic constrictive Pericarditis.

SHORT ESSAYS (Answer any Ten) 10 x 5 = 50 Marks

4. TEE in assessment of aortic diseases
5. Dobutamine stress echocardiography
6. RWMA in Anterior wall MI
7. Discuss role of TEE in Mitral stenosis.
8. Assessment of ASD for device closure by TEE
9. ECG in incomplete and complete RBBB.
10. Different types of PTCA balloons
11. ECG criteria of Atrial Fibrillation
12. Fascicular blocks-ECG changes
13. Quantification of coronary artery stenosis in CAG
14. Different views to profile RCA during coronary angiography
15. Feta echo-procedure
16. Procedure of peripheral Doppler
17. LV clot

SHORT ANSWERS (Answer any Ten) 10 x 3 = 30 Marks

18. Branches of RCA
19. Indications of coronary angioplasty
20. ECG criteria for RA Enlargement
21. ECG in a case of Large Pericardial Effusion
22. ECG criteria of LV volume overload (diastolic)
23. ECG changes in HOCM
24. Myocardial contrast Echocardiography
25. Haemodynamic monitoring during PTCA in cathlab
26. Interpretation of Dobutamine stress echo
27. Contraindications of Dobutamine stress echo
28. LA Myxoma
29 ECG in Acute Rheumatic fever

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# Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Cardiac Care Technology Degree Examination – 05-Jun-2024

Time: Three Hours | Max. Marks: 100 Marks

## ADVANCED CARDIAC CARE TECHNOLOGY – III (RS2)

Q.P. CODE: 2922

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. Intracardiac pressure recording normal and abnormal values in atria, ventricles, great vessels
2. Treadmill testing- indications, contraindications, complications, criteria for a positive test
3. Myocardial perfusion scan- indications, isotopes used, patterns of abnormal perfusion

SHORT ESSAYS (Answer any Ten) 10 x 5 = 50 Marks

4. Atrioventricular blocks on electrocardiogram (ECG)
5. Abnormal Pr and QT intervals
6. Components of an Intensive Coronary Care Unit (ICCU) and types of patients cared for
7. Cardiopulmonary resuscitation (CPR)
8. Abnormal oximetry values and conditions they are seen in
9. Device closure of atrial septal defect
10. ECG changes of hypocalcemia and Hyperkalemia
11. Holter monitoring – indications, abnormal rhythms
12. Synchronized cardioversion
13. Precautions / contraindications in the catheterization laboratory for a pregnant lady
14. Permanent pacemaker
15. Radiopharmaceuticals and instruments in Nuclear Cardiology

SHORT ANSWERS (Answer any Ten) 10 x 3 = 30 Marks

16. Shockable rhythms
17. Enumerate tachyarrhythmia’s
18. Complications of mitral valvuloplasty
19. Difference between atrial flutter and atrial fibrillation
20. Placement of catheters for electrophysiological studies
21. Complications of temporary pacing
22. Pressure waveform of a normal pulse
23. Bruce protocol
24. Emergencies during treadmill testing
25. Ventricular tachycardia
26. Anatomical types of Ventricular Septal Defect (VSD)
27. Storage and recording of cath-lab data

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# Rajiv Gandhi University of Health Sciences, Karnataka

Third Year B.Sc. Cardiac Care Technology Degree Examination – 30-May-2024

Time: Three Hours | Max. Marks: 100 Marks

## CARDIAC CARE TECHNOLOGY - CLINICAL - PAPER – I (RS-3)

## Q.P. CODE: 3276

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Explain in detail right ventricle function assessment by Echocardiography
2. Describe use of echocardiography in post operative assessment of atrial septal defects in detail
   OR
   Explain management of severe aortic valve disease in detail

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Use of echo in tricuspid stenosis and regurgitation
4. Write a note on types of congenital mitral stenosis
5. Describe hypertrophic cardiomyopathy and its variants in detail
   OR
   Describe types of prosthetic heart valves in detail
6. Classify aortic valve diseases briefly
7. **Explain complications of myocardial infarction.**
8. How do you investigate and manage Pericarditis?
9. Describe dilated cardiomyopathy echo (DCM) features in detail
10. Write a note on left heart catheterization
    OR
    Discuss on LV non compaction
11. Explain clinical findings of Dextrocardia
12. Describe different types of balloons used in PTCA

SHORT ANSWER 10 x 3 = 30 Marks

13. Angio views used in ASD device closure
14. Mention any three antiarrhythmic drugs
15. Mention use of Echo in cardiac arrest
16. Mention steps of coronary angioplasty
17. Mention echo findings of LA clot
18. **Define any three major criterias under Dukes criteria.**
19. What are the specific echo features of infective endocarditis
20. What are the echo features for restrictive cardiomyopathy
21. Mention any three ways of assessing severe AR by echocardiography
22. Describe the pathophysiology of MS

# Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Cardiac Care Technology Degree Examination – 03-Jun-2024

Time: Three Hours | Max. Marks: 100 Marks

## CARDIAC CARE TECHNOLOGY – APPLIED- PAPER-II (RS-3)

## Q.P. CODE: 3277

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Describe contrast Echocardiography and its types in detail.
2. Describe any two advance Cathlab procedures in detail.
   OR
   Explain indications, contraindications, procedure and complication's of IABP

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. CRT.
4. Fetal Echo study.
5. TEE views for aortic valve.
   OR
   CoA management.
6. Discuss a few coronary anomalies.
7. Describe TEE procedure.
8. Dobutamine stress echo.
9. LBBB with MI.
10. Pulmonary sling anomaly.
    OR
    Shones complex.
11. Wilkins scoring system.
12. Pericarditis.

SHORT ANSWER 10 x 3 = 30 Marks

13. ECG features in cardiac tamponade.
14. What is an Epsilon wave?
15. Define hypertension.
16. Define Ischemia and infarction.
17. RVH-ECG features.
18. How to calculate Heart rate in sinus Rhythm?
19. Sinus rhythm – Definition.
20. TOF – components.
21. ASD – types.
22. PDA – Definition and echocardiography features.

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# Rajiv Gandhi University of Health Sciences, Karnataka

Third Year B.Sc. Cardiac Care Technology Degree Examination – 05-Jun-2024

Time: Three Hours | Max. Marks: 100 Marks

## CARDIAC CARE TECHNOLOGY – ADVANCED- PAPER-III (RS-3)

## Q.P. CODE: 3278

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Explain mechanisms of cardiac arrhythmias in detail with examples
2. Discuss about pressure tracings and saturation in various cardiac chambers
   OR
   Explain advanced Echo in detail

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Write a note on temporary pacing systems
4. Write a note on nuclear cardiology
5. Describe VSD device closure in detail
   OR
   Describe CRT
6. Cardiac arrest
7. Alcohol septal ablation
8. Write a note on ASD device closure procedure
9. Describe precautions to be followed for procedures during pregnancy
10. Write a note on coil closure techniques in PDA
    OR
    Describe ECG features of VT in detail
11. Explain uses of cardiovascular drugs briefly
12. Write a note on BMV procedure steps

SHORT ANSWER 10 x 3 = 30 Marks

13. Indications for PTMC
14. Explain indications for permanent pacing
15. Mention uses of statins with two examples
16. Mention three causes for step up of saturations at RA
17. Mention three causes for LA pressure overload
18. Mention any three indications for BAV
19. What are the ECG features of Atrial Flutter?
20. What are the ECG features of complete heart block?
21. Describe any three ECG features of WPW syndrome
22. Describe any three contra indications in TMT

# Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Cardiac Care Technology Degree Examination – 22-Nov-2024

Time: Three Hours | Max. Marks: 100 Marks

## Clinical Cardiac Care Technology – I

Paper – I (RS2)

**Q.P. CODE: 2920**

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

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. Describe your duty in the Cathlab during a coronary angioplasty.
2. Discuss about the materials used for a coronary angioplasty.
3. Explain DCM features on Echocardiography.

SHORT ESSAYS (Answer any Ten) 10 x 5 = 50 Marks

4. Etiology and Echo features of RCM (Restrictive Cardiomyopathy).
5. LA function assessment by Echo.
6. Describe pacemaker types and its components.
7. Pericardial effusion.
8. Cathlab equipment.
9. Coronary Angio views.
10. Subcostal views of 2D Echocardiography.
11. Pressure tracings of all four cardiac chambers.
12. Indications for peripheral Angiogram.
13. Pericarditis ECG features.
14. Pulmonary stenosis.
15. Left heart Catheters.
16. Infective endocarditis.
17. Radiation hazards.

SHORT ANSWERS (Answer any Ten) 10 x 3 = 30 Marks

18. Non ionic contrast in Cath procedure.
19. Draw a neat labelled diagram of Cathlab machine.
20. Mention any two sterilization methods for the hardwares in Cathlab.
21. How to avoid over exposure to radiation?
22. Mention any two methods to evaluate LV function.
23. How do you assess LA appendage function?
24. Classify LA thrombus.
25. What are the complications during Angioplasty?
26. What are the complications of prosthetic heart valves?
27. Types of PDA.
28. Incidences of ASD and VSD?
29. Normal O2 levels in the cardiac chambers.

# Rajiv Gandhi University of Health Sciences, Karnataka

Third Year B.Sc. Cardiac Care Technology Degree Examination – 22-Nov-2

Time: Three Hours Max. Marks: 100 Marks

## CARDIAC CARE TECHNOLOGY - CLINICAL - PAPER – I (RS-3)

## Q.P. CODE: 3276

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Explain in detail right and left atrial function assessment by different methods in echocardiography
2. Describe use of echocardiography and pre, peri and post operative patent ductus arterious in detail
   OR
   Explain Aortic valve replacement in detail

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Use of echo in assessment of rheumatic heart disease
4. Write a note on severity assessment of AS and AR
5. Describe Amyloidosis in detail
   OR
   Describe assessment of prosthetic heart valve dysfunction by echo in detail
6. Classify types of valvular heart disease and their causes briefly
7. Explain current ASE guidelines for LV function by echo briefly
8. Steps of Balloon Mitral Valvotomy (BMV) procedure
9. Describe Ischemic Heart Disease echo features in detail
10. Write a note on left heart pressure tracings
    OR
    Discuss on Arrhythmogenic Right Ventricular Disease (ARVD)
11. Explain clinical findings of cardiac malpositions
12. Describe different types of guidewires and guide catheters used in PTCA

SHORT ANSWER 10 x 3 = 30 Marks

13. Angio views used in PDA device closure
14. Mention hardwares used in PTCA
15. Mention use of echo in acute MI
16. Mention symptoms and signs of TOF
17. Mention echo findings of ASD
18. Define any three features of HOCM
19. What are the specific echo features of cardiac tamponade
20. What are the echo features of true and pseudo aneurysm
21. Describe severe PS by echocardiography
22. Describe the pathophysiology of AS

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# Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (Allied Health sciences) Examination – 25-Nov-2024

Time: Three Hours Max. Marks: 100

CARDIAC CARE TECHNOLOGY - APPLIED TECHNOLOGY PAPER – II (RS2)

## Q.P. CODE: 2921

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

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. Discuss ECG findings in anterior wall myocardial infarction and management of acute myocardial infarction
2. Define Congenital Heart Disease. Explain ECGs in ASD, VSD, PDA and Pulmonary Stenosis
3. Describe Transesophageal Echocardiography – Indication, Contraindication, procedure and interpretation in detail

SHORT ESSAYS (Answer any Ten) 10 x 5 = 50 Marks

4. Explain Fetal Echocardiogram. Write the views
5. Coronary Angioplasty – Indication and procedure
6. ECG in various types of Cardiomyopathies
7. Explain methods to record blood pressure and echo findings in hypertension
8. Echocardiography in dilated cardiomyopathy
9. ECG in Bundle Branch Block
10. WPW syndrome
11. Explain Myocardial Contrast Echo for viability assessment
12. Definition of RHD. Describe valvular involvement in RHD
13. Define Peripheral Angioplasty
14. Echo findings in Pericardial effusion and tamponade
15. Complications of coronary angioplasty
16. Uses of Peripheral doppler
17. Contrast Echocardiogram

SHORT ANSWERS (Answer any Ten) 10 x 3 = 30 Marks

18. Complication in angioplasty of COA
19. ECG in Myxoedema
20. ECG in HOCM
21. Second degree AV block
22. Describe Echo features of Pulmonary Stenosis.
23. ECG in atrial fibrillation
24. Asystole
25. Guide wires used in chronic total occlusion
26. ECG in RVMI
27. STEMI vs NSTEMI
28. Types of stents
29. Describe method to record blood pressure

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## Correction 25.11.2024 Morning

Q.P Code: 2921
Replace the question No.22as
22. Describe Echo features of Pulmonary Stenosis.

# Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Cardiac Care Technology Degree Examination – 27-Nov-2024

Time: Three Hours | Max. Marks: 100 Marks

## ADVANCED CARDIAC CARE TECHNOLOGY – III (RS2)

**Q.P. CODE: 2922**

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) 2 x 10 = 20 Marks

1. Describe the indications, procedure in detail and complications of Aortic Balloon valvuloplasty
2. Describe the causes of ventricular tachycardia, their recognition and management
3. Describe in detail the indications, procedure and materials required for device closure of ASD

SHORT ESSAYS (Answer any Ten) 10 x 5 = 50 Marks

4. Purpose of cardiac monitoring
5. Right heart catheterization (RHC)
6. Criteria for positive TMT
7. Contraindications for TMT
8. HOLTER study
9. Usefulness of oximetry
10. Usefulness of myocardial perfusion scan
11. Pressure recording in CATH LAB
12. Complete heart block
13. Complications of TMT
14. Atrial fibrillation
15. Indications for Defibrillation

SHORT ANSWERS (Answer any Ten) 10 x 3 = 30 Marks

16. 'C' ARM
17. ECG in Hypokalemia
18. mention uses of speckle Tracking
19. Ablation therapy
20. Coils closure of PDA
21. ATROPINE
22. Complications of defibrillation
23. APC's
24. Precautions during pregnancy in Cath Lab
25. Temporary Cardiac Pacing
26. CD Recording
27. Radio pharmaceuticals in Nuclear Cardiology

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# Rajiv Gandhi University of Health Sciences, Karnataka

Third Year B.Sc. Cardiac Care Technology Degree Examination – 25-Nov-2024

Time: Three Hours | Max. Marks: 100 Marks

## CARDIAC CARE TECHNOLOGY – APPLIED- PAPER-II (RS-3)

## Q.P. CODE: 3277

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Explain echo in MI in detail
2. Describe ROTA in detail
   OR
   Explain contrast echo types in detail

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Write a note on RVMI
4. Write a note on HOCM
5. Describe management of COA
   OR
   Tissue Doppler imaging
6. Describe a few view of TEE
7. Explain WPW syndrome in detail
8. Write a note on investigations in TOF
9. Describe fascicular blocks in detail
10. Write a note on peripheral doppler
    OR
    ECG in bundle branch blocks
11. Describe AS in detail
12. Write a note on true vs technical Dextrocardia

SHORT ANSWER 10 x 3 = 30 Marks

13. Palliative shunts for TOF
14. Explain indications for TEE
15. Name some cyanotic heart diseases
16. Angina
17. Mention echo findings of rheumatic AS
18. Classify Cardiomyopathy
19. What are the echo findings of ASD?
20. What are the ECG features of pericardial diseases?
21. Classify Hypertension
22. Describe the embryology of PDA and COA

# Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Cardiac Care Technology Degree Examination – 27-Nov-2024

Time: Three Hours Max. Marks: 100

## CARDIAC CARE TECHNOLOGY – ADVANCED- PAPER-III (RS-3)

## Q.P. CODE: 3278

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

LONG ESSAYS (Second Question Choice) 2 x 10 = 20 Marks

1. Discuss PTMC, indications and contraindications, procedure and complications of PTMC
2. Discuss TMT – indications, contraindications, protocols, stages and complications
   OR
   Discuss Cardiac arrest, definition, causes, describe external cardiac massage, artificial respiration, drugs and defibrillator in cardiac arrest

SHORT ESSAYS (Question No 5 & 10 choice) 10 x 5 = 50 Marks

3. Holter monitoring
4. Electrophysiology studies
5. ECG in hyperkalemia and hypokalemia
   OR
   Oximetry in various chambers of the heart
6. Temporary pacemaker and its uses
7. Cardiac monitoring in ICCU
8. ASD device closure
9. Myocardial perfusion scan
10. Short note on 3D echo
    OR
    Name bradyarrhythemias and tachyarrthymias
11. Types of ASD and VSD
12. Describe the indications and procedure of Balloon Aortic Valve.

SHORT ANSWER 10 x 3 = 30 Marks

13. Speckle tracking
14. NIH catheter
15. Types of permanent pacemakers
16. Cardiac monitoring
17. Defibrillator uses
18. PIG TAIL catheter
19. Draw RV and LV pressure trace
20. Uses of atropine
21. Name the hardware for aortic valvuloplasty
22. PTCA balloons