Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Cardiac Care Technology Degree Examination – 03-Jan-2022

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. Discuss in detail about echocardiographic features of pericardial disease.
2. Discuss in detail about cardiac catheterization equipment. Add a note on radiation hazards.
3. Role of echocardiography in acute myocardial infarction and its complication

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

4. ECG findings in mitral stenosis and aortic stenosis
5. Constrictive versus restrictive cardiomyopathy
6. Pre and post evaluation of AVR
7. Morphological difference between left ventricle and right ventricle
8. Oximetry at various levels of cardiac chambers
9. Name the contrast materials used and its complications
10. Echocardiographic evaluation of infective endocarditis
11. Diastolic function assessment
12. Echo features of coarctation of aorta
13. Discuss right heart catheterization.
14. Discuss materials used in PTMC.
15. Temporary pacemakers
16. Rule-disk method (Simpson's method)
17. Peripheral angiogram – procedure

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

18. Guide wires
19. ECG in lateral wall MI
20. Echo features of Dextrocardia
21. Echo features of LA clot
22. Caudal view in angiogram
23. Echo features of PDA
24. Echo in pulmonary hypertension
25. Hibernation and stunning of myocardium
26. M-Mode echo and its application
27. Discuss various parts of aorta.
28. Angioplasty balloons
29. Components of TOF

Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (Allied Health sciences) Examination – 05-Jan-2022

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 Myocardial infarction. Discuss ECG criteria for diagnosis of MI. Mention ECG findings in IW and RVMI. How do you take Rt sided leads?
2. Discuss pharmacological stress Echo-indications and procedure.
3. Define Hypertension. Discuss the ECG findings in Hypertension and criteria to diagnose LVH.

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

4. Hardware used for PTCA
5. ECG findings in LAD blocks
6. Trifascicular blocks
7. ECG in complete heart block
8. Ventricular tachycardia and ventricular fibrillation
9. Fetal echo-basic interpretation
10. TEE-indications and contraindications
11. WPW syndrome
12. ECG in Non ST elevation MI
13. ECG in myxedeme
14. Usefulness of Peripheral Doppler
15. Complications of TEE and their management
16. Causes of ST elevation in ECG
17. Pathological Q wave-definition and causes

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

18. Commonly involved valves in Rheumatic fever
19. Complications of coronary Angioplasty
20. Branches of LAD
21. ECG in RVMI
22. ECG in ASD
23. ECG in Dilated cardiomyopathy
24. ECG in pericardial effusion
25. Angiographic views in coronary angiography
26. Different types of guiding catheters in PTCA
27. Conduction system of heart
28. ECG in True PWMI

29 Bifascicular block

Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Cardiac Care Technology Degree Examination – 07-Jan-2022

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. Discuss in detail about TMT – indications, contraindications and complications.
2. Mitral valvuloplasty – indications, contraindications and procedure in detail
3. Classify VSD and describe about interventional and non-interventional techniques used in the settings of VSD.

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

4. Permanent pacing
5. Electro physiology studies
6. Myocardial perfusion scan
7. Electrophysiological studies in detail
8. Name the drugs used in cardiac arrest.
9. How to setup ICCU?
10. Cardiac catheterization during pregnancy
11. Defibrillator
12. Indications and usefulness of Holter monitoring
13. Oximetry at various levels
14. ECG in STEMI
15. ECG in electrolytic disturbances

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

16. Types of pacemakers
17. 'C' arm
18. LV pressure tracing
19. Ablation therapy
20. Different types of balloons in pel
21. Usefulness of radiofrequency ablation
22. Complications during Pel
23. Diltiazem
24. Accessory pathways
25. Digoxin
26. CD recording
27. Classify CHD.

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Cardiac Care Technology Degree Examination – 05-Jul-2022

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 in detail the M-mode, two-dimensional and Doppler echocardiographic features of Mitral regurgitation.
2. Describe the echocardiographic features of ASD, VSD and Coarctation of Aorta.
3. Describe in detail the ECG features of hyper-acute, fully evolved and chronic stabilized phases of inferior wall MI.

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

4. Echocardiographic features of Aortic stenosis
5. Echocardiographic features of Pericardial Tamponade
6. ECG findings in Right ventricular infarction
7. Echocardiographic features of left atrial myxoma
8. Cardiac catheterization in pulmonary stenosis
9. ECG findings in PAH
10. Echocardiography in hypertrophic obstructive cardiomyopathy
11. Draw neat diagrams of 17 echocardiographic LV segments
12. Echocardiographic features of Aortic regurgitation
13. Draw labelled diagrams of pigtail catheter, Multi-purpose catheter, Swan Ganz catheter NIH catheter, Manifold.
14. Standard sterilization method for cath-lab hardware
15. Methods to minimize radiation exposure
16. Draw neat labelled diagrams of M-mode of normal and stenosed mitral valve.
17. Draw labelled diagrams of apical echocardiographic views.

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

18. Enumerate complications of coronary angiogram.
19. Air embolism during coronary angiogram
20. Enumerate hazards of radiation.
21. Types of radiographic contrast used in cath-lab
22. Enumerate hard-ware used in coronary angiogram.
23. Draw diagram of left coronary artery in LAO-caudal view.
24. Q-T interval
25. P-R interval
26. Echocardiographic features of LV apical aneurysm
27. Draw diagrams of infundibular and valvular PS.
28. Write Gorlin’s formula.
29. ECG in Dextrocardia

Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (Allied Health sciences) Examination – 07-Jul-2022

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 hypertension, different methods to evaluate hypertension and explain Electrocardiographic changes in detail
2. Brief discussion about the classification of congenital heart diseases. Discuss Acyanotic congenital heart diseases
3. Coronary angioplasty – procedure, materials and its complications

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

4. Contrast echo
5. ECG in Dextrocardia
6. ECG features of acute pericarditis
7. Complications of Transoesophageal echocardiography
8. Peripheral angioplasty
9. ECG in Atrial septal defects
10. Materials used in coronary angioplasty
11. ECG in TOF
12. Myocardial contrast echo
13. ECG in RVMI
14. Fetal echocardiography
15. ECG in aortic stenosis
16. Bundle branch blocks
17. Dobutamine stress echo

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

18. WPW syndrome
19. ECG in inferior wall MI
20. R wave
21. ECG in pericardial effusion
22. Myocardial infarction – complications in brief
23. Materials used in coarctoplasty
24. ECG in mitral stenosis
25. ECG features of pulmonary stenosis
26. Peripheral Doppler
27. Echo in PDA
28. ECG in atrial fibrillation
29. Indication of fetal echo

Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Cardiac Care Technology Degree Examination – 11-Jul-2022

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. Material and steps of ballon mitral valvotomy. Add a note on Wilkin's score.
2. Treadmill testing: indications, stages, arrhythmias, signs and ischemia, contraindications.
3. Permanent pacemakers: Indications, types, procedural steps, role of magnet during follow up.

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

4. Ventricular tachycardia and fibrillation: identification and management.
5. Mason – Likar modification.
6. Electrocardiographic manifestations of hyperkalemia and hypocalcemia.
7. Role of medications used during cardiac arrest.
8. Supraventricular tachycardia: classification and treatment.
9. ASD device closure of Indications and contraindications.
10. Normal waveform of an arterial pulse.
11. Device closure of patient ductus arteriosus.
12. Positron emission tomography (PET).
13. Managing technical errors during pressure recording in the cardiac catheterization lab.
14. Steps of placing a temporary pacemaker.
15. Myocardial perfusion scan.

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

16. Wenckebach phenomenon.
17. Non-shockable rhythms.
18. His bundle.
19. Indications for oximetry.
20. Devices used for monitoring patients in an intensive coronary care unit (ICCU).
21. Indications for cardiopulmonary resuscitation (CPR).
22. Chronotropic incompetence.
23. Atrial flutter.
24. Rate-reducing drugs.
25. Types of VSD's
26. Deca-polar catheter.
27. R on T phenomenon.

Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Cardiac Care Technology Degree Examination – 12-Dec-2022

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 in detail the M-mode, two dimensional and Doppler echocardiographic features of Aortic stenosis.
2. Describe in detail the echocardiographic features of TOF.
3. Describe in detail the ECG features of hyper-acute, fully evolved and chronic stabilized phases of anterior wall MI.

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

4. Echocardiographic features of Mitral stenosis
5. Echocardiographic features of constrictive Pericarditis
6. ECG findings in Posterior wall infarction
7. Draw labelled diagrams of echocardiography in different types of VSD.
8. Echocardiographic features of sub-aortic and valvular Aortic stenosis
9. ECG findings in different types of ASD
10. Echocardiography in restrictive cardiomyopathy
11. Mitral valve prolapse
12. Echocardiographic features of Mitral regurgitation
13. Draw labelled diagrams of right and left Judkin's catheters, right and left Amplatz catheters, Swan-Ganz catheter.
14. Echocardiographic features of diastolic dysfunction
15. Safety measures for cardiac catheterization in pregnancy
16. Draw neat labelled diagrams of Doppler findings in infundibular and valvular PS.
17. Complications of Cardiac catherization

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

18. Pressure artefacts during cardiac catheterization
19. Measurements of normal LV and LA
20. Enumerate causes of oximetry step-up at RA level.
21. Spontaneous echo contrast
22. Reverberation artifact
23. Draw diagram of right coronary artery in LAO-cranial view.
24. Draw diagrams of different types of ST depression.
25. Indications of peripheral angiogram
26. Draw labelled diagram of normal LV pressure during cardiac catheterization.
27. ECG in left and right arm lead reversal
28. ECG in Aortic stenosis
29. Draw labelled diagrams of parasternal long and short axis.

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. (Allied Health sciences) Examination – 14-Dec-2022

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. Explain ECG changes in acyanotic CHD's.
2. Describe the 18 segment model of LV.
3. Write a note on TMT.

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

4. Holter monitoring.
5. CAG views.
6. 2D Echo Views.
7. Heart rate calculation methods on ECG.
8. Describe a few knobs on the console of Echo machine.
9. Indications contra indications of TEE.
10. Procedure and uses of peripheral Doppler.
11. ECG changes in WPW syndrome.
12. Uses of contrast Echo.
13. Left bundle branch block.
14. Indications, contra-indications of Dobutamine stress Echo.
15. SAECG.
16. Posterior wall MI.
17. ECG artifacts.

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

18. LGL syndrome.
19. Wellen's sign.
20. Describe hypertension treatment.
21. Describe angina.
22. Mention the components of TOF.
23. Mention the types of ASD.
24. LABH on ECG.
25. Mention any two causes for RBBB.
26. Mention any two ECG criteria for RVH.
27. Mention any two causes of AS.
28. What are the common 2D Echo features of mitral valve in RHD?
29. Describe ECG changes in Pericardial Effusion.

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Cardiac Care Technology Degree Examination – 16-Dec-2022

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 in detail about the ECG features of various Tachy arrhythmias.
2. Advanced cardiac life support in detail and brief note on the setup of ICCU regarding advanced cardiac life support.
3. Classify Ventricular Septal Defect (VSD) and describe about interventional and non-interventional techniques used in the settings of VSD.

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

4. Permanent pacing
5. Electrophysiology studies
6. Myocardial perfusion scan
7. Cardiac monitoring
8. Brief note on oximetry
9. Ablation therapy
10. Complications during Tread Mill Test (TMT)
11. Indications for ASD device closure
12. Holter monitoring in detail
13. How do you manage cardiac arrest?
14. Various types of balloons used in valvuloplastics
15. ECG in hyperkalemia

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

16. Types of pacemakers
17. ‘C’ arm
18. LV pressure tracing
19. Inoue balloon
20. Cardiac asystole
21. Use of defibrillator
22. Adrenaline
23. ECG in ventricular tachycardia
24. Accessory pathways
25. Digoxin
26. CD recording
27. Classify Congenital Heart Disease (CHD).

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Rajiv Gandhi University of Health Sciences, Karnataka

Third Year B.Sc. Cardiac Care Technology Degree Examination – 12-Dec-2022

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 LV systolic function assessment by different methods in Echocardiography
2. Describe use of echocardiography and pre and post operative ventricular septal defects in detail
   OR
   Explain management of Rheumatic Mitral Valve Disease in detail in RHD condition

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

3. Use of echo in pulmonary stenosis
4. Write a note on types of aortic stenosis
5. Describe pulmonary hypertension and its management
   OR
   Describe PDA in detail
6. Classify coronary anomalies briefly
7. Components of tetrollogy of fallot
8. How do you assess and manage pericardial effusion
9. Describe Ischemic MR in detail
10. Write a note on right heart catheters
    OR
    Discuss protection from X-ray in cathlab
11. Explain clinical findings of Coarctation of aorta
12. Describe different types of stents used for PTCA

SHORT ANSWER 10 x 3 = 30 Marks

13. Cranial views used in PTCA
14. Mention any three emergency drugs and its uses in cathlab
15. Mention any three hazards of x-ray
16. Mention steps in Seldinger Technique
17. Mention any three methods of diagnosing acute MI
18. Define any three major criterias of Jones criteria
19. What are the symptoms of Infective Endocarditis
20. Radiation Hazards
21. Mention any three ways of assessing severe MR by Echocardiography
22. Describe the pathophysiology of aortic stenosis

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Cardiac Care Technology Degree Examination – 14-Dec-2022

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 the indications and contraindications for Treadmill test. Discuss criteria for positive TMT.
2. Classify various types of Cardiomyopathy. Describe in detail about Hypertrophic cardiomyopathy and interventional treatment.
   OR
   Mention the indication and contraindication of Transesophageal echocardiography. Describe the procedure.

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

3. Echocardiography assessment of device closure of Atrial Septal Defect (ASD).
4. What are the LV segments introduced in occlusion of Left Circumferential Artery (LCX).
5. Echocardiography in Atrial Fibrillation (AF).
   OR
   Echocardiography in various types of ASD.
6. ECG criteria for RVH and LVH.
7. ECG and Echocardiography in acute pulmonary embolism.
8. Echocardiographic severity of MR.
9. Write a note on Bundle Branch Block.
10. How will you recognize ventricular aneurysm?
    OR
    Write a note on Ballon pulmonary valvuloplasty (BPV).
11. Write a note on Ambulatory BP monitoring.
12. ECG changes in LAHB and LPHB.

SHORT ANSWER 10 x 3 = 30 Marks

13. ECG in Bradyarrhythmia and tachyarrhythmia.
14. Write a note on CD recording and storage.
15. Write a note on Defibrillation.
16. What is Holter monitoring?
17. How do you recognize SVT in ECG?
18. Echocardiography of pulmonary stenosis.
19. Explain junctional Rhythm.
20. ECG in left Atrial Enlargement.
21. Write a note on sinus pause.
22. Measure heart rate in ECG of Atrial fibrillation methodology.

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Cardiac Care Technology Degree Examination – 16-Dec-2022

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. What are the types of Bradyarrhythmia? Mention the ECG changes and their management.
2. Mention the indications, procedure steps, hardware used, complications of ballon mitral valvuloplasty.
   OR
   Note on pressure recording in various chambers with examples.

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

3. What are the various steps and hardware for device closure of VSD?
4. Briefly describe the management of cardiac arrest.
5. What are the Tachyarrhythmias? Mention any five and their management.
   OR
   Nuclear cardiology in detail.
6. What are the parameters to be checked during pacemaker implantation?
7. What are the hardware used for alcohol septal ablation? Mention the indications.
8. What are the precautions to be followed for doing intervention on pregnant patient?
9. Mention the indications and complications of ICD implantation?
10. What are the types of coronary stents? Add a short note on instant restenosis and its management.
    OR
    CD recording and storage in Cathlab.
11. What are the indications for nuclear cardiac scan and mention the radioactive materials used?
12. Septal ablation therapy - procedure complications.

SHORT ANSWER 10 x 3 = 30 Marks

13. Mention the various drugs in myocardial infarction for thrombolysis.
14. Which are the types of devices used for PDA device closure?
15. What are the indications? What is significant value for FFR?
16. What are the situations in which you advise Rotablation?
17. How do confirm diagnosis of pulmonary embolism?
18. What are the advantages of storing all the procedures over CD? How do you ensure safety of the data?
19. How do you manage pericardial effusion and tamponade?
20. What are the ECG changes in Hypo and Hyperkalemia?
21. What is purpose of admitting a patient in ICCU? Mention what types of patient need to be admitted there?
22. What are the types of defibrillator? When do you use the defibrillator indications?