BLDE (DEEMED TO BE UNIVERSITY)

B.Sc. in Cardiac Care Technology

[Time: 3 Hours] [Max. Marks: 80]

IV SEMESTER

PAPER - I (Development of Cardiovascular System, Cardiovascular Pathology)

QP CODE: 8435

Your answer should be specific to the questions asked.
Write Question No. in left side of margin.

Long Questions 10X1 = 10 Marks

1. Explain in detail the formation, position, and mechanism of the heart loop with suitable diagrams.

Short Essays: (Any – 8) 5 X 8 = 40 Marks

2. Describe the changes in circulation at birth (fetal to neonatal transition).
3. Explain the pathophysiology of patent Ductus Arteriosus (PDA).
4. Write short notes on double outlet right ventricle (DORV).
5. Explain the causes and effects of pulmonary atresia.
6. Write about transposition of great arteries (TGA) – diagnosis and management.
7. Discuss total anomalous pulmonary venous connection (TAPVC).
8. Explain rheumatic heart disease – causes, pathology, and prevention.
9. Describe stable and unstable angina – differences, causes, and symptoms.
10. Explain the types and features of myocardial infarction.

Short Answers: (Any – 10) 3 X 10 = 30 Marks

11. Define cyanotic heart disease.
12. Name any three fetal shunts.
13. Write the function of foramen ovale.
14. Mention the normal blood flow pattern through the heart.
15. Define coronary artery disease (CAD).
16. List two major risk factors for hypertension.
17. Mention two common symptoms of aortic stenosis.
18. Write two diagnostic tests for infective endocarditis.
19. Define pericarditis.
20. Name any two types of cardiomyopathy.
21. Write any three signs of right heart failure

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IV SEMESTER

PAPER - II (Advanced Electrocardiography)

QP CODE: 8436

Your answer should be specific to the questions asked.
Write Question No. in left side of margin.

Long Questions **10X1 = 10 Marks**

1. Write the ECG changes in Rheumatic Stenosis & Regurgitation of Mitral and Aortic valves.

Short Essays: (Any – 8) **5 X 8 = 40 Marks**

2. Write the ECG changes in anterior wall myocardial infarction.
3. Explain the differences between supraventricular tachycardia (SVT) and ventricular tachycardia (VT).
4. Describe ECG features of atrial fibrillation and atrial flutter.
5. Write short notes on pacemaker coding (NBG codes).
6. Explain the ECG changes seen in hypocalcemia and hypercalcemia.
7. Describe the pathophysiology and ECG features of pulmonary hypertension.
8. Write short notes on AV block – first, second, and third degree.
9. Describe pre-excitation reentry and Wolff–Parkinson–White (WPW) syndrome.
10. Explain Tachyarrhythmia's

Short Answers: (Any – 10) **3 X 10 = 30 Marks**

11. Define QRS complex and give its normal duration.
12. Mention two ECG findings in left ventricular hypertrophy (LVH).
13. Write two causes of right axis deviation.
14. Define atrioventricular dissociation.
15. Mention any two causes of prolonged QT interval.
16. Write any two differences between atrial and ventricular premature beats.
17. Define flutter waves.
18. Write two indications for temporary pacing.
19. Mention two complications of radiofrequency ablation.
20. Define bundle branch block.
21. Write two ECG features of pericarditis.

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[Time: 3 Hours] [Max. Marks: 80]

IV SEMESTER

PAPER - III (Advanced Echocardiography)

QP CODE: 8437

Your answer should be specific to the questions asked.
Write Question No. in left side of margin.

Long Questions **10X1 = 10 Marks**

1. Discuss the role of echocardiography in valvular heart diseases, explaining 2D, M-mode, and Doppler findings with suitable diagrams.

Short Essays: (Any – 8) **5 X 8 = 40 Marks**

2. Describe the echocardiographic features of hypertrophic cardiomyopathy (HCM).
3. Explain assessment of LV systolic and diastolic function by Doppler method.
4. Write short notes on Stress Echocardiography – indications, procedure, and interpretation.
5. Describe echocardiographic features of pericarditis.
6. Write short notes on echocardiographic findings in Ebstein's anomaly.
7. Explain the role of echocardiography in detection of myocardial infarction and its complications.
8. Write about echocardiographic assessment in acute mitral and aortic regurgitation.
9. Describe types and echo evaluation of prosthetic valves.
10. Explain the use of echocardiography in chest trauma.

Short Answers: (Any – 10) **3 X 10 = 30 Marks**

11. Define Cardiomyopathy and name its types.
12. Mention two echo findings in Dilated Cardiomyopathy (DCM).
13. Write two advantages of TOE over TTE.
14. What is Speckle Tracking?
15. Write two uses of Stress Echocardiography.
16. Mention two types of congenital aortic valve abnormalities.
17. Write two echo findings in pericardial constriction.
18. Define Strain and Strain Rate.
19. Write two echo signs of pulmonary hypertension.
20. Mention two complications of prosthetic valves.
21. Define LV mass and give its clinical importance.

9/11/26
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BLDE (DEEMED TO BE UNIVERSITY)

B.Sc. in Cardiac Care Technology

[Time: 3 Hours] [Max. Marks: 80]

IV SEMESTER

PAPER - IV (CCT Directed Clinical Education - II)

QP CODE: 8438

Your answer should be specific to the questions asked.
Write Question No. in left side of margin.

Long Questions **10X1 = 10 Marks**

1. Explain the steps of Cardiopulmonary Resuscitation (CPR) and the management of primary cardiac arrest.

Short Essays: (Any – 8) **5 X 8 = 40 Marks**

2. Describe the normal vital signs and explain how to assess temperature, pulse, and respiration rate.
3. Explain the different methods of sterilization used in hospitals.
4. Write about the physics and working mechanism of an echocardiography transducer.
5. Describe types of ventilators and their uses in cardiac care.
6. Write short notes on emergency drugs – adrenaline and digoxin (uses, dose, and precautions).
7. Explain the procedure and importance of IV cannulation.
8. Write short notes on fluid therapy – types, indications, and contraindications.
9. Discuss radiation safety measures in the operation theatre and cath lab.
10. Explain the importance of biomedical waste segregation and color coding.

Short Answers: (Any – 10) **3 X 10 = 30 Marks**

11. Write two functions of a defibrillator.
12. Mention two contraindications of IV cannulation.
13. Define vasopressors and give two examples.
14. Write two uses of noradrenaline.
15. What are the types of ECG paper speed used in ECG machines?
16. Mention two signs of cardiac arrest.
17. Write two methods of sterilization by chemicals.
18. Name two types of radiation hazards.
19. Mention two important parameters monitored in ICU.
20. Write two differences between crystalloids and colloids.
21. Write about the different positioning of patients given during echocardiography procedure.