



SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

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

March 2024 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- Principle, indications and contraindications
2. Describe the normal P wave, its genesis and its common abnormalities

Short Essay (any ten)

10 X 5= 50 Marks

3. Explain Hexaxial reference system
4. Changes in ECG during atrial chamber enlargement
5. Exercise Protocols
6. Electrocardiographic Leads
7. Write ECG criteria for complete RBBB with its mechanism
8. ECG criteria for left ventricular hypertrophy
9. Waves and intervals in normal electrocardiogram
10. Indications to stop Treadmill test
11. Mechanism of incomplete RBBB
12. ECG criteria for right ventricular hypertrophy
13. Mechanism of complete LBBB
14. Electrical field of the heart

Short Answers (any ten)

10 X 3= 30 Marks

15. ECG in complete RBBB
16. Purkinje fibres
17. 12 lead Electrocardiogram
18. Genesis of QRS complex
19. SA node
20. Heart rate in ECG
21. "U" wave
22. Atrial fibrillation
23. ECG paper
24. Various ST patterns described in Treadmill Test
25. Preparation of patient for TMT
26. ECG in left anterior hemiblock



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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 labeled diagrams wherever necessary.

Long Essay

2 X 10= 20 Marks

1. Define atherosclerosis. Risk factors, clinical significance and prevention
2. Discuss signs, symptoms, diagnosis and treatment of ischemic heart disease

Short Essay (any six)

6 X 5= 30 Marks

3. Management of hypertension
4. Hypertrophic cardiomyopathy
5. Rheumatic mitral valve disease
6. Aortic regurgitation- definition, aetiology and diagnosis
7. Obstructive versus restrictive pulmonary disease
8. Diagnosis and management of atrial septal defect
9. Anaemia- presentation, causes, investigations and diagnosis
10. COPD

Short Answers(any ten)

10 X 3= 30 Marks

11. Classification of VSD
12. Causes of pulmonary edema
13. Components of TOF
14. What is PDA
15. Rheumatic fever
16. Prothrombin time (PT)
17. Dissection of aorta
18. Bleeding time
19. Mitral stenosis
20. Clinical features of COPD
21. Drugs used in management of hypertension
22. Aortic dissection



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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 anemia. Classify anemia based on morphology and etiological factors and add a note on laboratory investigations in anemia

SHORT ESSAY

3X 5 = 15 Marks

2. Define leukemia. Write the classification of leukemia
3. Hypertension – Definition types, pathogenesis and its effects.
4. Describe the pathogenesis of Hemophilia and discuss the laboratory diagnosis

SHORT ANSWERS

5 X 3 = 15 Marks

5. Describe the causes for right sided heart failure
6. Causes for pericardial effusion
7. What is Leukemoid reaction and 3 causes
8. Causes of obstructive congenital heart diseases
9. Causes for neutrophilia

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. Define needle stick injury in health care setting, discuss in detail source of infection, mode of transmission, risk factors associated with needle stick injury in health care workers (2+2+2+4).

SHORT ESSAY

3 X 5 = 15 Marks

2. Define health care associated infection discuss the role of health care worker in preventing the transmission of infections
3. Describe the risk factors and preventive measures to prevent Clostridium difficile infection
4. Discuss the types of biomedical waste generated in hospitals

SHORT ANSWERS

5 X 3 = 15 Marks

5. Mention the Source of infection and modes of transmission of Ventilator Associated Pneumonia
6. Name three PPE
7. Name three multidrug resistant organisms prevalent in health care setting
8. Define the term CLABSI and its risk factors
9. List three infections transmitted through faeco oral route



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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. Discuss Normal Electrocardiogram
2. Exercise test – protocols and its clinical importance in the assessment of ischemic heart disease

Short Essay

6 X 5= 30 Marks

3. Indications and contraindications of treadmill test
4. Types of heart block
5. ECG criteria of hemiblocks (Fascicular blocks)
6. Indications for stopping Exercise testing
7. Electrical field of Heart
8. ST segment response in treadmill test

Short Answers

10 X 3= 30 Marks

9. Importance of ST segment
10. "P" wave
11. Calculation of heart rate by ECG
12. ECG in Sinus arrhythmia
13. Signs of atrial enlargement on ECG
14. QRS complex
15. PR interval
16. Q-T interval
17. Pathological Q waves
18. Unipolar limb leads



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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 drugs used in hypertension, Explain mechanism of action, uses and adverse effects ACE inhibitors.

Short essay

3 x 5 = 15 Marks

2. Explain mechanism of action, uses and adverse effects of nitrates .
3. Explain mechanism of action, uses and adverse effects of amlodipine
4. Explain mechanism of action, uses and adverse effects of morphine.

Short answer

5 x 3 = 15 Marks

5. Rationale of combining Lignocaine and Adrenaline.
6. Mention three anti-cholinesterase drugs and its uses
7. Mention three uses and adverse effects of Morphine.
8. Mention three antiplatelet agents and three uses
9. Classify antihistamines with examples



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[Max. Marks: 80]

PAPER-IV

Medicine Relevant to Cardiac care Technology

Q.P Code : K3640

Your answers should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

Long Essay

2 X 10= 20 Marks

1. Define atherosclerosis. Risk factors, clinical significance and prevention
2. Discuss signs, symptoms, diagnosis and treatment of ischemic heart disease

Short Essay

6 X 5= 30 Marks

3. Uses of pulmonary function tests
4. Management of hypertension
5. Hypertrophic cardiomyopathy
6. Rheumatic mitral valve disease
7. Aortic regurgitation- definition, aetiology and diagnosis
8. Obstructive versus restrictive pulmonary disease

Short Answers

10 X 3= 30 Marks

9. Classification of VSD
10. Causes of pulmonary edema
11. Components of TOF
12. What is PDA
13. Rheumatic fever
14. Prothrombin time (PT)
15. Dissection of aorta
16. Bleeding time
17. Mitral stenosis
18. Clinical features of COPD