

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH
(A DEEMED TO BE UNIVERSITY)

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

March 2022 Examination

B.Sc. Cardiac Perfusion Technology

Time: 3 Hrs.

Paper – I

[Max. Marks: 100]

Applied Pathology & Microbiology

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

(Use separate answer booklet for Section A & B)

Section – A

Applied Pathology (50 Marks)

Q.P Code :J3805

LONG ESSAY

2 X 10 = 20 Marks

1. Describe the etiopathogenesis, morphology of heart and laboratory findings in acute myocardial infarction?
2. Classify leukemia? Describe FAB Classification of Acute myeloid leukemia with its peripheral smear findings?

SHORT ESSAY (Answer any three)

3 X 5 = 15 Marks

3. Define cardiac hypertrophy and list the etiology for right and left ventricular hypertrophy
4. Classify cardiomyopathies and describe the etiology and morphological features of primary cardiomyopathy?
5. Define and classify anemia
6. Classify aneurysms describe the etiopathogenesis and morphology of dissecting aneurysm
7. Describe the etiology and laboratory findings of megaloblastic anemia

SHORT ANSWERS (Answer any five)

5 X 3 = 15 Marks

8. List the types of pericardial effusions with their etiology?
9. List 06 causes of neutrophilic leucocytosis
10. Describe the morphological features of heart in hypertensive heart disease?
11. Define hemopericardium and list 02 causes of hemopericardium?
12. Classify hemolytic anemia
13. List the complications of atherosclerosis
14. List 03 causes for delayed clotting time

Section – B

Applied Microbiology (50 Marks)

Q.P Code : J3806

(Use separate answer booklet for Section-B)

LONG ESSAY

2 X 10 = 20 Marks

1. Types of HCAI, sources of infection and role of a health care worker in preventing Health care associated infections. (3+3+4)
2. Classify the types of waste generated in the hospital and write in detail about the Disposal of waste (3+7)

SHORT ESSAY (Answer any three)

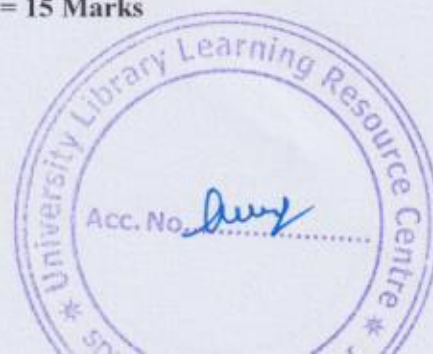
3 X 5 = 15 Marks

3. How will you prevent the spread of drug resistant E coli in the hospital?
4. Risk factors and preventive measures of catheter associated blood stream infection
5. MRSA, risk factors and its preventive measures
6. Clostridium difficile: Disease caused by, Risk factors and its preventive measures
7. Surveillance of infectious diseases

SHORT ANSWERS (Answer any five)

5 X 3 = 15 Marks

8. Five moments of hand hygiene
9. Name three blood borne viruses
10. Routes of transmission of infection in the hospital
11. Dos and don'ts in needle stick injury
12. Mention three diseases that spread by respiratory route
13. Name three PPE
14. Define health care associated infection



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

March 2022 Examination

B.Sc. Cardiac Perfusion Technology (CPT)

Paper – II

[Max. Marks: 100]

Time: 3 Hrs.

Introduction to Cardiac Perfusion Technology

Q.P Code : J3810

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

LONG ESSAY

2 X 10 = 20 Marks

1. Explain in detail Hemodynamic monitoring during CPB
2. Explain evolution of CPB

Short essay (Any ten)

10 X 5 = 50 Marks

3. Draw a diagram of extracorporeal circuit and explain it
4. What is a normal sinus rhythm? Draw a labelled diagram of ECG and significance of each wave with its intervals
5. Describe the various components of Cardiopulmonary bypass
6. What are the various sites of arterial, venous and cardioplegia cannulation
7. Explain briefly the various phases of cardiac cycle
8. Explain the different chambers of the heart
9. Describe the circulatory system of the body
10. What is hypothermia and its uses
11. Explain the blood supply of the heart
12. Explain the branches of the Aorta with a neat diagram
13. Aseptic Technique and its importance in cardiac surgery
14. A 50-year-old male patient with height 165 cms and weight 70 kgs was posted for cardiac surgery. His hemoglobin was 13gm/dl and hematocrit of 40%. The blood volume of the patient is 70ml/kg. The priming volume used for the CPB circuit is 1250ml. Calculate the following
a) BSA b) patient blood volume c) Flow rate for 2.2 and 2.4 Cardiac Index d) Predicted hematocrit

Short Answers (Any ten)

10 X 3 = 30 Marks

15. What is Arterial Blood gas? What are the normal values of various parameters in an ABG
16. Defibrillator and its uses
17. What are the different pumps used in CPB
18. What are the different layers of the heart?
19. Gross Well Technique
20. Perfusionist and his role in cardiac surgery
21. Bubble detector in Heart Lung machine and its importance
22. Use of Electroencephalogram in cardiac surgery
23. What are the uses of Echocardiography in cardiac surgery?
24. What is heparin sodium and protamine sulphate
25. Draw a labelled diagram of Coronary artery and its branches
26. common causes of LAD



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

March 2022 Examination

B.Sc. Cardiac Perfusion Technology

Time: 2 Hrs.

[Max. Marks: 40]

Applied Pharmacology

Q.P Code: J3820

Your answers should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

LONG ESSAY

1 X 10 = 10 Marks

1. List drugs used in hypertension. Explain the mechanism of action, uses and adverse effects beta blockers (3+2+3+2)

SHORT ESSAY (Answer any three)

3 X 5 = 15 Marks

2. Mention low molecular weight heparins. Explain the mechanism of action and uses (1+2+2)

3. Explain the mechanism of action, uses and adverse effects of frusemide (1.5+2+1.5)

4. Explain enzyme induction and inhibition with examples (2.5+ 2.5)

5. Mention four routes of drug administration with examples and write the advantages of sublingual route (4+1)

SHORT ANSWERS (Answer any five)

5 X 3 = 15 Marks

6. Write the treatment of myocardial infarction

7. Explain idiosyncratic reactions with three examples

8. Mention three crystalloids and write three uses

9. List three uses and three adverse effects of calcium channel blockers

10. Explain tolerance and dependence with examples

11. Mention the targets of drug action with examples



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B.Sc. Allied Health Sciences Second Year (Semester-III)
March 2022 Examination

B.Sc. Cardiac Perfusion Technology (CPT)

Time: 2.30 Hrs.

[Max. Marks: 80]

PAPER-IV

Medicine Relevant to Cardiac Perfusion Technology

Q.P Code : J3830

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

Long Essay

2X10=20 Marks

1. Explain the classification, pathophysiology, and treatment of choice for ASD, VSD and PDA
2. Briefly explain classification of HTN and effect of HTN on cardiovascular system and renal system

Short Essay (Answer any Six)

6X5=30 Marks

3. Pathophysiology of TAPVC in detail
4. Pathophysiology of heart failure
5. Management of patients with STEMI
6. Explain the clinical presentation of RHD in detail
7. Describe the etiology and pathophysiology of aortic aneurysm
8. Explain the classification and pathophysiology of hypertensive cardiomyopathy in detail
9. Explain cardiogenic pulmonary edema in detail
10. How chronic severe anemia worsens heart failure?

Short Answers (Answer any ten)

10X3=30 Marks

11. Risk factors of IHD
12. Pulmonary function test
13. Hemophilia
14. Raynaud's phenomenon
15. Etiology of non-cardiogenic pulmonary edema
16. Management of PVD
17. Classification of truncus arteriosus
18. Classification of anemia based on morphology
19. Pathophysiology of RHD
20. Cardiac amyloidosis
21. Clinical presentation of abdominal aortic aneurysm
22. Etiology of dilated cardiomyopathy

