

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

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

March 2022 Examination

**B.Sc. Cardiac Care Technology**

Paper – I

[Max. Marks: 100]

Time: 3 Hrs.

**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: J4755**

**LONG ESSAY**

**2 X 10 = 20 Marks**

1. Describe the findings in nephritic syndrome. Describe the etiopathogenesis, clinical features and morphology of post streptococcal glomerulonephritis
2. Enumerate the differences between obstructive and restrictive pulmonary diseases. Describe the etiopathogenesis, clinical features and morphology of lung in bronchial asthma

**SHORT ESSAY (Answer any three)**

**3 X 5 = 15 Marks**

3. Describe the etiopathogenesis, clinical features and morphology of chronic kidney disease
4. Describe the etiopathogenesis, clinical features and morphology of pneumoconiosis
5. Describe the etiopathogenesis, clinical features and morphology of pulmonary edema
6. Describe the etiopathogenesis, clinical features and morphology of acute pyelonephritis
7. Describe the etiopathogenesis, clinical features and morphology of lobar pneumonia

**SHORT ANSWERS (Answer any five)**

**5 X 3 = 15 Marks**

8. List 06 causes of obstructive uropathy
9. List the renal function tests with their normal reference ranges
10. Describe the urinary findings in urinary tract infection
11. List 06 causes of pleural effusion
12. Define azotemia and uremia
13. Describe the anatomy of kidney
14. Draw the histology of lung

**Section – B**

**Applied Microbiology (50 Marks)**

**Q.P Code: J4756**

*(Use separate answer booklet for Section-B)*

**LONG ESSAY**

**2x10= 20marks**

1. Describe the factors contributing to infection and measures to control infection in ICU (4+6)
2. Classify sterilization. Describe in detail the working principle of autoclave with a diagram. Name the sterilization controls used (3+7)

**SHORT ESSAYS (Answer any three).**

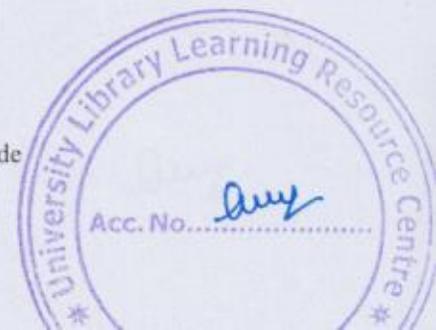
**3X5=15 marks**

3. Enumerate Alcohols used in disinfection. Describe the mechanism of action and uses of Alcohols
4. Describe the significance of Central Sterile Supply Department in Hospital
5. Describe the working principle and uses of Plasma sterilization
6. Describe different methods of cold sterilization with examples
7. Classification of patient care units based on the risk involved and the appropriate methods of disinfection

**SHORT ANSWERS (Answer any five).**

**5X3=15 marks**

8. Mention three levels of disinfectants with examples
9. List the factors affecting the effectiveness of chemical disinfectants
10. List three uses of Glutaraldehyde
11. Mention three methods of microbiological surveillance of OT
12. Define and name two antiseptics
13. Mention the methods of sterilization of endoscope, surgical instruments and laryngeal blade
14. Name three types of patient care items in Spaulding's classification with examples



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**B.Sc. Cardiac care Technology (CCT)**

Time: 3 Hrs.

**Paper – II**

[Max. Marks: 100]

**Introduction to Cardiac care Technology**

**Q.P Code: J4760**

*Your answers should be specific to the questions asked.*

*Draw neat labelled diagrams wherever necessary.*

**INTRODUCTION TO CARDIAC CARE TECHNOLOGY**

**SET 4**

**I. Long Essay (no choice)**

**2×10=20Marks**

1. Briefly explain the clinical applications of contrast echocardiography
2. Explain the transducer in detail with neat labelled diagram and write its applications

**II. Short Essay (Answer any 10)**

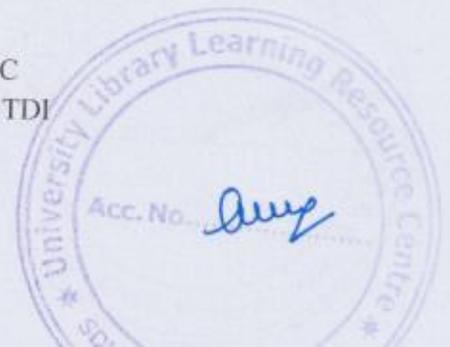
**10×5=50Marks**

3. Explain the continuity equation in detail
4. Explain Pressure Half time and  $dp/dt$
5. Explain myocardial perfusion in contrast echocardiography
6. Assessment of LV size in 2D Echocardiography
7. Explain the detection of intracardiac shunts in contrast echocardiography
8. Draw neat labelled diagram of different levels of PSAX view
9. Draw neat labelled diagram of m mode at MV
10. Assessment of PLAX view
11. Abnormal findings at AV m mode
12. Pulse wave and continuous wave TDI at mitral annulus
13. Structural and functional Indications for TTE
14. Write formula
  - a. Stroke volume
  - b. Cardiac output
  - c. Cardiac index
  - d.  $Q_p : Q_s$
  - e. Regurgitation fraction

**III. Short Answer (Answer any 10)**

**10×3=30Marks**

15. TAPSE and MAPSE by m-mode echocardiography
16. Difference between Doppler and 2D Echocardiography
17. Assessment of LV volume in 2D Echocardiography
18. RV function assessment
19. Write a note on pulse wave Doppler
20. Write a note on Doppler spectral analysis
21. Draw neat labelled diagram of subcostal view
22. Assessment of RAP by the help of dimension and collapse of IVC
23. What is the advantage of continuous wave TDI over Pulse wave TDI
24. Artifacts of contrast echocardiography
25. Adult systemic circulation
26. Assessment of suprasternal view



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**B.Sc. Cardiac Care Technology**

Time: 2 Hrs.

**Paper - III**

[Max. Marks: 40]

**Applied Pharmacology**

**Q.P Code: J4770**

*Your answers should be specific to the questions asked.*

*Draw neat labeled diagrams wherever necessary.*

**LONG ESSAY**

**1 X 10 = 10 Marks**

1. Classify insulin preparations. Explain the mechanism of action, uses and adverse effect of insulin  
(3+2+3+2)

**SHORT ESSAY (Answer any Three)**

**3X 5 = 15 Marks**

2. List the preanaesthetic medication and write the basis for the use of each group of drugs (1+4)
3. Explain the mechanism of action, uses and adverse effects of sodium cromoglycate (2+1.5+1.5)
4. List three steroids. Explain steroid card (1.5+3.5)
5. Explain mechanism of action, uses and adverse effects of diclofenac (1.5+2+1.5)

**SHORT ANSWERS (Answer any five)**

**5 X 3 = 15 Marks**

6. List the advantages of second generation antihistaminics over first generation
7. Mention three antipseudomonal penicillins and write three uses
8. List three pharyngeal demulcents and write their mechanism of action
9. Explain succinylcholine apnea and write the treatment
10. Mention three immunosuppressants and write three uses
11. List opioid antagonist and write their uses

