



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

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

September 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 etiopathogenesis, clinical features, stages and morphology of lung in lobar pneumonia
2. Classify renal diseases. Describe the etiopathogenesis, clinical features and morphology of minimal change disease

SHORT ESSAY (Answer any three)

3 X 5 = 15 Marks

3. Describe the etiopathogenesis, clinical features and morphology of emphysema
4. Describe the etiopathogenesis, clinical features, laboratory findings and morphology of post streptococcal glomerulonephritis
5. Describe the etiopathogenesis, clinical features and morphology of pneumoconiosis
6. Describe the etiopathogenesis, clinical features and morphology of chronic pyelonephritis
7. Describe the etiopathogenesis, clinical features and morphology of hydronephrosis

SHORT ANSWERS (Answer any five)

5 X 3 = 15 Marks

8. List 03 causes of obstructive lung disease
9. Define pulmonary edema and list 02 causes
10. Draw a labelled diagram of histology of kidney
11. List the renal function tests with the normal reference ranges
12. List 06 causes of obstructive uropathy
13. List 06 causes of acute renal failure
14. Describe the findings in nephritic syndrome

Section – B

Applied Microbiology (50 Marks)

Q.P Code : J4756

(Use separate answer booklet for Section-B)

LONG ESSAY

2x10= 20marks

1. Define Central Sterile Supply Department. Enumerate four zones and describe the various flow of activities in Central Sterile Supply Department (2+2+6)
2. Define the terms Sterilization and Disinfection. Classify Disinfectants and Describe the working principle, uses, advantages, disadvantages of Ethylene Oxide Sterilization and add a note on its sterilization control (1+1+6+2)

SHORT ESSAYS (Answer any three).

3X5=15 marks

3. Describe the working principle, uses of hot air oven and add a note on sterilization control
4. Define disinfectant and mention the types, uses, advantages and disadvantages of aldehydes used in hospitals
5. Describe different methods of cold sterilization with examples
6. Describe the care bundle approach to prevent Central line associated blood stream infection in ICU
7. Describe the transmission-based precautions in ICU

SHORT ANSWERS (Answer any five).

5X3=15 marks

8. Name three chemical sterilant
9. Mention the disinfectants used to disinfect bed railing, floor and trolley
10. Mention three articles sterilized by Autoclave
11. List three method of sampling for Microbiological surveillance of OT
12. List three source of infection in ICU
13. List three Alcohol disinfectants used in hospital and their uses
14. Mention the factors affecting the effectiveness of chemical disinfectants



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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.

I. Long Essay (no choice)

2×10=20Marks

1. Draw neat labelled diagram of different views of trans thoracic echocardiography
2. Briefly explain the applications of m-mode at mitral valve level with neat labelled diagram

II. Short Essay (Answer any 10)

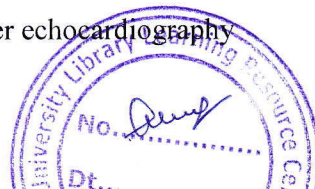
10×5=50Marks

3. Interaction of ultrasound with tissue
4. Application of m-mode at Aorta- LA level with neat labelled diagram
5. Difference between pulse wave Doppler and continuous wave Doppler
6. Doppler artifacts
7. Calculation of regurgitation volume by volumetric assessment in Doppler
8. LV function assessment
9. Abnormal findings at AV m mode
10. Explain adult circulation
11. Assessment of intracardiac shunt by contrast echocardiography
12. Pulse wave TDI at mitral annulus
13. Write formula
 - a. Stroke volume
 - b. Cardiac output
 - c. Cardiac index
 - d. $Q_p : Q_s$
 - e. Regurgitation fraction
14. Explain PISA method in detail

III. Short Answer (Answer any 10)

10×3=30Marks

15. Properties of sound wave
16. List Indication of 2D Echocardiography
17. Myocardial performance index
18. Write a short note on left heart contrast
19. Write contra indications for Left contrast echocardiography
20. Explain Billiard ball and Coanda effect
21. M mode at PV level
22. Assessment of RAP by the help of dimension and collapse of IVC
23. What are the uses of M mode color TDI?
24. What are the artifacts of contrast echocardiography?
25. What are the components of transducer?
26. Difference between 2D Echocardiography and Doppler echocardiography





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B.Sc. Cardiac Care Technology

Paper - III

[Max. Marks : 40]

Time : 2 Hrs.

Subject : 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 corticosteroids. List the uses and adverse effects of corticosteroids (3+4+3)

SHORT ESSAY (Answer any Three)

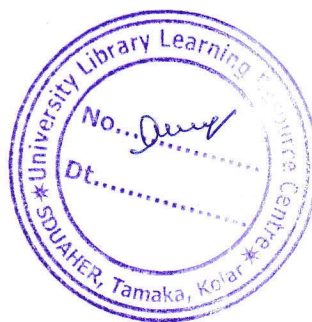
3X 5 = 15 Marks

2. Explain the mechanism of action, uses and adverse effects of succinylcholine (1.5+2+1.5)
3. Explain uses and adverse effects of diclofenac (2.5+2.5)
4. Enumerate the instructions to be given for the use of metered dose inhaler (MDI) (5)
5. Explain mechanism of action, uses and adverse effects of third generation ceftriaxone (1.5+2+1.5)

SHORT ANSWERS (Answer any five)

5 X 3 = 15 Marks

6. List three uses and three adverse effects of metronidazole
7. Mention three drugs different groups of used in cough and write the mechanism of action for each
8. Write three uses and adverse effects of cyclophosphamide
9. List the advantages of second generation antihistaminics over first generation antihistaminics
10. Mention three uses of naloxone
11. Mention three techniques of lignocaine administration with type of surgery done





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B.Sc. Cardiac Care Technology (CCT)

Time : 2.30 Hrs.

[Max. Marks : 80]

PAPER-IV

Medicine Relevant to Cardiac care Technology

Q.P Code : J4780

Your answers should be specific to the questions asked.

I. Long Essay (no choice)

2×10=20Marks

1. Briefly explain Briefly explain the normal physiological changes that occur during pregnancy and write a note Pregnancy and valvular heart disease
2. Define chronic renal failure. Briefly explain its pathophysiology, clinical history, physical examination, lab investigations

II. Short Essay (Answer any 6)

6×5=30Marks

3. Briefly explain the function of ANS
4. How does obesity effect cardiovascular system
5. Effect of sympathetic and parasympathetic nervous system on heart
6. Explain the causes of acute renal failure in detail
7. Age related changes in the blood vessel
8. Hemodynamic changes in RV and LV after birth
9. Fate of heart tube
10. Patient evaluation before renal transplantation

III. Short Answer (Answer any 10)

10×3=30Marks

11. Causes of obesity
12. Classification of Peripheral nervous system
13. Age related ECG changes
14. Eissemerger syndrome and pregnancy
15. What are the risk factors of DM
16. Complications during hemodialysis
17. Describe ANS dysfunction
18. Define acute renal failure. What are its risk factors
19. Etiology of chronic renal failure
20. Define Obesity and write formula to calculate BMI
21. Age related changes in the cardiac valves
22. Modifiable and non-modifiable risk factors for obesity

