

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 Perfusion 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: J4805

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: J4806

(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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March 2022 Examination

B.Sc. Cardiac Perfusion Technology (CPT)

Time: 3 Hrs.

Paper – II

[Max. Marks: 100]

Introduction to Cardiac Perfusion Technology

Q.P Code: J4810

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

Long essay (No Choice)

10 Marks x 2 = 20 Marks

1. Describe Principles of Extracorporeal circulation
2. What are oxygenators? Describe the different types

Short essay (Answer any 10)

5 Marks x 10 = 50 Marks

- 3 What is Cardioplegia? What are different methods of delivery and the sites of delivery of Cardioplegia
- 4 Explain Principles of Venous drainage and types of venous drainage
- 5 Explain temperature monitoring during CPB.
- 6 Explain the uses of arterial filter in Cardiopulmonary bypass
- 7 Principle of vacuum assisted venous drainage
- 8 Connectors and tubing's
- 9 Difference between bubble and membrane oxygenators
- 10 Advantages and disadvantages of roller and centrifugal pump.
- 11 What is suction used in CPB the methods of applying suction
- 12 Explain the working principle of Centrifugal pump
- 13 What are flow meters and its application
- 14 Different blood products and its management?

Short answers (Answer any 10)

3 Marks x 10 = 30 Marks

- 15 Complication of arterial cannulation
- 16 Sites of placement of bubble detector in extracorporeal circulation
- 17 Uses of Heat exchanger
- 18 What are the Complications of femoral cannulation?
- 19 Level alarm and site of placement of level alarm
- 20 Bubble detectors and its uses
- 21 Priming and its types
- 22 Materials used in tubing's and different common sizes of tubing's
- 23 Draw a diagram of a bicaval venous cannulation
- 24 Two stage venous cannulation
- 25 Indication of femoral cannulation
- 26 What is Activated Clotting Time and what is the desired duration to go on CPB.



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

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B.Sc. Cardiac Perfusion Technology

Time: 2 Hrs.

Paper - III

[Max. Marks: 40]

Applied Pharmacology

Q.P Code: J4820

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)

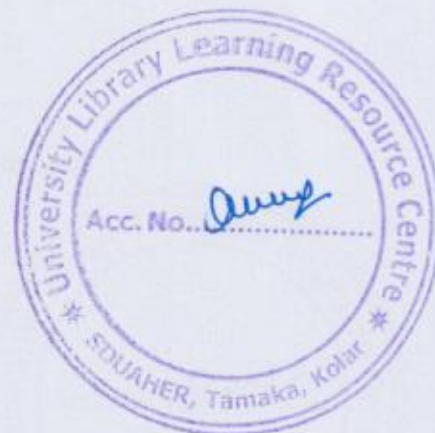
3X 5 = 15 Marks

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



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B.Sc. Allied Health Sciences Second Year (Semester-IV)
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: J4830

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

Long essay (No Choice)

10 Marks x 2=20 Marks

1. Explain chronic renal failure with its pathophysiology
2. Describe Pediatric Perfusion in relation to CPB circuit and Priming

Short essay (Answer any 6)

5 Marks x 6 = 30 Marks

3. Explain the age related structural changes in the blood vessels
4. Explain types of Diabetes Mellitus, its clinical features, risk factors and its management
5. Explain ANS with its branches
6. Explain monitoring in pregnant woman during CPB
7. What is aging and its effects on the different structures of the body
8. Briefly describe the effects of DM on the cardiovascular system
9. Symptoms, causes and treatment of motor neurone disease
10. Renal transplantation and its types

Short answers (Answer any 10)

3 Marks x 10= 30 Marks

11. Complications for renal transplantation
12. Effects of CPB on pregnant woman
13. Myocardial protection of pregnant woman during CPB
14. Advantages of Haemodialysis over Peritoneal dialysis
15. Contraindications for Peritoneal dialysis
16. List out the physiological changes of heart with age
17. Write note on structural changes occurring in blood vessels in aged
18. Priming in paediatric patient
19. Complications of obesity
20. Risk factors for AKD
21. Priming in infant and paediatric patient in CPB
22. Write note on principle of dialysis

