



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 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 :J4805

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 : J4806

(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).

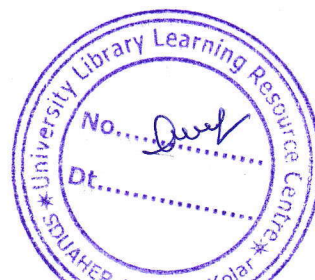
3X5=15 marks

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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September 2022 Examination

B.Sc. Cardiac Perfusion Technology (CPT)

Paper – II

[Max. Marks : 100]

Time : 3 Hrs.

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. Discuss various types of blood pumps and ideal characteristics of blood pumps. Describe the difference between pulsatile versus non-pulsatile blood pumps
2. Explain the various parts of membrane oxygenators and compare bubble oxygenator versus membrane oxygenator

Short essay (Answer any 10)

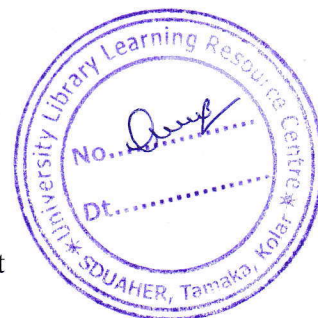
5 Marks x 10 = 50 Marks

3. Draw diagram of aorta showing cannulation site of cardioplegia cannula, aortic cannula, cross clamp with proper labeling & narrate different types of arterial cannulas
4. Principles of Venous drainage
5. Explain the different sites of venous cannulation
6. Explain the uses of arterial filter in Cardiopulmonary bypass
7. Principle of vacuum assisted venous drainage
8. What are different types of Connectors and tubing's used in cardiopulmonary bypass circuit?
9. What are different blood products and its management?
10. What are the uses of level sensors and bubble detectors in extracorporeal circulation?
11. Draw diagram of aorta showing placement of cardioplegia cannula, aortic cannula, cross clamp with proper labeling & briefly mention what is the use of cross clamping
12. Advantages of hypothermia in cardiopulmonary bypass
13. What is anticoagulation and it's monitoring. What is the minimum value of ACT required to go on CPB?
14. Importance of safety devices during CPB

Short answers (Answer any 10)

3 Marks x 10 = 30 Marks

15. Venous cannula
16. Sites of Venting of Heart during CPB
17. What is the function of Defoamer in a bubble oxygenator?
18. What are the Complication faced in femoral cannulation?
19. Complication of arterial cannulation
20. Sites of placement of bubble detector in extracorporeal circulation
21. Heat exchanger
22. Blood components and its uses
23. Difference between packed blood cell and whole blood
24. Methods of delivery of Antegrade cardioplegia
25. Retrograde cardioplegia cannula and its site of insertion and placement
26. Uses of gas blender





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

September 2022 Examination

B.Sc. Cardiac Perfusion Technology

Time : 2 Hrs.

Paper - III

[Max. Marks : 40]

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

SHORT ESSAY (Answer any Three)

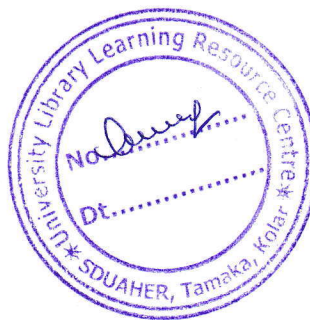
3X 5 = 15 Marks

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 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. Describe the autonomic nervous system. Differentiate between sympathetic and parasympathetic system.
2. Explain acute renal failure with its pathophysiology

Short essay (Answer any 6)

5 Marks x 6 = 30 Marks

3. Briefly mention about pre and post ganglionic neurons in parasympathetic nervous system
4. Epilepsy
5. Effect of parasympathetic nervous system on various organs of the body
6. Patient selection and evaluation for renal transplantation
7. Write note on obesity
8. What are the effects of diabetes on cardiovascular system
9. Effect of sympathetic nervous system on various organs
10. Classify diabetes mellitus in detail

Short answers (Answer any 10)

3 Marks x 10= 30 Marks

11. Risk factors of diabetes mellitus
12. Advantage of live donor transplantation
13. Disadvantage of diseased donor transplantation
14. Complication during haemodialysis
15. Parkinson's disease
16. Alzheimer's disease
17. Complications of diabetes mellitus
18. Characteristics of Autonomic nervous system
19. Neurotransmitters and receptors in autonomic nervous system
20. Indications for Haemodialysis
21. List any 3 drugs leading to Nephropathy
22. Write Normal blood values of Sodium, Potassium and Phosphorous

