

Question Paper

Exam Date & Time: 07-Jun-2024 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. CVT DEGREE EXAMINATION - MAY/JUNE 2024
SUBJECT: CVT2201 - CARDIAC PACEMAKERS AND DEFIBRILLATORS
(2020 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Explain various modes in single and dual chamber pacemakers along with the pacing timing cycles and intervals. (20)
- 2) Discuss the steps in the insertion of temporary pacing leads and add a note of programming parameters for the same (20)
- 3) Mention the various causes and solutions for loss of capture and loss of sensing during cardiac pacing (10)
- 4) Explain the indications, complications, and procedure for permanent pacemaker implantation (10)
- 5A) Illustrate pacemaker syndrome (5)
- 5B) Illustrate pacemaker mediated tachycardia (5)
- 5C) Identify the single chamber pacemaker malfunctions (5)
- 5D) Identify the components of ICD system (5)
- 5E) Explain the advantage and disadvantage of Bipolar pacing (5)
- 5F) What is magnet function in cardiac pacing systems? (5)
- 6A) Define cross talk in pacemakers (2)
- 6B) Define impedance and mention normal range of impedance for pacing lead systems (2)
- 6C) Define stimulation threshold. (2)
- 6D) Distinguish between refractory period and blanking period in a dual chamber pacemaker (2)
- 6E) Explain active and passive fixation lead mechanisms (2)

-----End-----

Question Paper

Exam Date & Time: 05-Jun-2024 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. CVT DEGREE EXAMINATION - MAY/JUNE 2024
SUBJECT: CVT2202 - CONGENITAL HEART DISEASES - I
(2020 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- | | | |
|-----|--|------|
| 1) | Explain the embryology, classification, clinical presentation, and management of Ebstein anomaly | (20) |
| 2) | Describe the classification, pathophysiology, clinical presentation, ECG, and echocardiography of AP window. | (20) |
| 3) | Describe the pathophysiology and Echocardiography of sub-valvular aortic stenosis | (10) |
| 4) | Describe the classification, Pathophysiology, and echocardiography of VSD | (10) |
| 5A) | Explain the Krichenko classification in PDA | (5) |
| 5B) | Write a note on Congenital supra-ventricular AS | (5) |
| 5C) | Explain Rastelli classification of complete AV canal defect | (5) |
| 5D) | Describe the classification of Cor- triatriatum | (5) |
| 5E) | Illustrate the Management of TAPVC | (5) |
| 5F) | Enumerate Shones complex | (5) |
| 6A) | Define the terms Dextroposition and Dextroversion | (2) |
| 6B) | Write the GOSE score formula | (2) |
| 6C) | Describe the anatomical differences between Left and right Isomerism | (2) |
| 6D) | Explain the X-ray features of Pericardial Effusion | (2) |
| 6E) | Define Gerbode VSD | (2) |

-----End-----

Question Paper

Exam Date & Time: 17-May-2024 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. CVT DEGREE EXAMINATION - MAY/JUNE 2024
SUBJECT: CVT2241 - CARDIAC INTERVENTIONAL HARDWARES
(2020 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- | | | |
|-----|---|------|
| 1) | Explain quantum theory and write the various radiation doses and exposure rates. | (10) |
| 2) | Illustrate the composition, architecture, and mode of implantation of stents in detail. | (10) |
| 3A) | Discuss the various types cutting balloons | (5) |
| 3B) | Write a note on IVC filter devices | (5) |
| 3C) | Explain the components of introducer set | (5) |
| 3D) | Elaborate the different types of catheters used during EP studies | (5) |
| 4A) | Outline a neat diagram of Judkins left and Judkins right catheter. | (2) |
| 4B) | Define stochastic effect of radiation | (2) |
| 4C) | List the used of subclavian access site | (2) |
| 4D) | Recall two uses of Berman angiographic catheter. | (2) |
| 4E) | Define air kerma | (2) |

-----End-----

Question Paper

Exam Date & Time: 17-May-2024 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. CVT DEGREE EXAMINATION - MAY/JUNE 2024
SUBJECT: CVT2242 - PACEMAKER PROGRAMMING AND ANALYSIS
(2020 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- | | | |
|-----|--|------|
| 1) | Outline the various indications for permanent pacemaker implantation | (10) |
| 2) | Explain the indications and procedural aspects of temporary pacemakers | (10) |
| 3A) | Summarize the timing cycle of VVI and DDD mode | (5) |
| 3B) | Explain the various sensors used in a permanent pacemaker | (5) |
| 3C) | What are the electrical concepts used in pacemakers? | (5) |
| 3D) | Outline the reversible causes of bradycardia | (5) |
| 4A) | What are undersensing and oversensing in pacemakers? | (2) |
| 4B) | List down the common causes of failure to capture | (2) |
| 4C) | What are the parameters to look for during a temporary pacemaker implantation? | (2) |
| 4D) | Define Hysteresis | (2) |
| 4E) | What are the types of pacemaker leads available? | (2) |

-----End-----