

Question Paper

Exam Date & Time: 24-May-2022 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. CARDIOVASCULAR TECHNOLOGY/B.Sc. EMERGENCY MEDICAL TECHNOLOGY/B.Sc. CLINICAL NUTRITION & DIETETICS/B.Sc. PSYCHOLOGY/B.Sc. NUCLEAR MEDICINE TECHNOLOGY/B.Sc. HEALTH INFORMATION MANAGEMENT/B.Sc. MEDICAL LABORATORY TECHNOLOGY/B.Sc. ANAESTHESIA & OPERATION THEATRE TECHNOLOGY/B.Sc. PERFUSION TECHNOLOGY/B.Sc. RESPIRATORY THERAPY/BACHELOR OF OPTOMETRY DEGREE EXAMINATION - MAY 2022

SUBJECT: BST 3201/BST 3202 - BIOSTATISTICS AND RESEARCH METHODOLOGY
(2020 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Compute the median, inter-quartile range, range and mode for the following data. (10)
(2+4+2+2 = 10 marks)

Systolic Blood Pressure
141
119
122
127
125
122
105
113
106
131

- 2A) State the assumptions of simple linear regression (5)
- 2B) Define skewness and kurtosis. (2)
- 2C) Define the three components of descriptive epidemiology. (3)
- 3A) Write a short note on commonly used methods to summarize qualitative and quantitative variables. (5)
- 3B) If the underlying characteristic of interest is continuous and the underlying probability distribution is Gaussian, then, _____ % of the observations will lie within one standard deviation from the mean, _____ % of the observations will lie within two standard deviations from the mean, and _____ % of the observations will lie within three standard deviations from the mean. Define sampling and a sampling frame (5)
(3+2 = 5 marks)
- 3C) Define dependent and independent variables with an example. Define the three types of tabulation. (5)
(2+3 = 5 marks)

- 3D) Write a short note on systematic and snowball sampling. (5)
- 4A) Give two examples of a continuous variable. (2)
- 4B) Define demography and epidemiology. (2)
- 4C) Probability values range between the values ____ and ____ whereas Pearson's Correlation coefficient values range between ____ and _____. (2)
- 4D) List any two examples of non-sampling error. (2)
- 4E) List a point of difference between morbidity rate and mortality rate with an example. (2)

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Question Paper

Exam Date & Time: 26-May-2022 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. EMT/B.Sc. RRT & DT/B.Sc. CVT/B.Sc. MIT/BOT/B.Sc. PFT/B.Sc.AOTT DEGREE
EXAMINATION - MAY 2022
SUBJECT: PHC2203 - PHARMACOLOGY
(2020 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Describe the terms "Iatrogenic disease", "Generic name" and "Synergism" with suitable examples. (10)
List two sources of drugs with an example for each. List two advantages and two disadvantages of the intravenous route of drug administration.
(6+2+2 = 10 marks)
- 2A) List two anticholinesterases and describe their mechanism of action. Mention two adverse effects of atropine. List two examples and two therapeutic uses of adrenergic drugs. (6)
- 2B) List two examples each for skeletal muscle relaxants and general anaesthetics. Mention four pharmacological actions of morphine. (4)
- 3A) List two drugs used for peptic ulcer and explain the mechanism of action of any one of them. (5)
Mention two classes of antiemetics with an example for each.
- 3B) Explain the mechanism of action of warfarin and list its two adverse effects. Enumerate two oral iron preparations and mention their two therapeutic uses. (5)
- 3C) List three classes of drugs with an example for each used in hypertension. Explain the mechanism of action of any one class. (5)
- 3D) Define suprainfection with an example. List two common features of aminoglycosides. List two drugs each used in tuberculosis and viral infection. (5)
- 4A) List two uses and two adverse effects of glucocorticoids. (2)
- 4B) Explain the mechanism of anti-asthmatic action of salbutamol. (2)
- 4C) List two second generation antihistaminics and mention their two advantages over first generation antihistaminics. (2)
- 4D) Explain the anti-inflammatory action of aspirin. (2)
- 4E) List two each anti-thyroid and oral antidiabetic drugs. (2)

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Question Paper

Exam Date & Time: 28-May-2022 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. CVT/BPT/BOT DEGREE EXAMINATION - MAY 2022
SUBJECT : CPY2201/CPY2202 - CLINICAL PSYCHOLOGY
(2020 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

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|-----|--|------|
| 1) | Define learning and explain Pavlov's classical conditioning. | (10) |
| 2) | Compare DSM V & ICD 10 classificatory systems. | (10) |
| 3A) | Enumerate the steps in creative thinking. | (5) |
| 3B) | Explain Maslow's hierarchy theory. | (5) |
| 3C) | Depression | (5) |
| 3D) | Outline the various types of counselling. | (5) |
| 4A) | Projective tests | (2) |
| 4B) | Define emotion | (2) |
| 4C) | Autism | (2) |
| 4D) | Define crisis | (2) |
| 4E) | Time-out | (2) |

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Question Paper

Exam Date & Time: 30-May-2022 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. CARDIOVASCULAR TECHNOLOGY DEGREE EXAMINATION - MAY 2022
SUBJECT: CVT 2241 - PROGRAM ELECTIVE-1 - CARDIAC INTERVENTIONAL HARDWARES
(2020 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

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|-----|--|------|
| 1) | Explain the uses of left heart catheters in detail. | (10) |
| 2) | Discuss the various types of stents used in interventional cardiology. | (10) |
| 3A) | Discuss the advantages of radial approach over femoral approach. | (5) |
| 3B) | Mention the uses of pacing catheters. | (5) |
| 3C) | Discuss the various types of guide wires used in cathlab. | (5) |
| 3D) | Write a note on IVC filter. | (5) |
| 4A) | Name few drug eluting stents. | (2) |
| 4B) | Define compliant balloons. | (2) |
| 4C) | Give two uses of Pig tail catheter. | (2) |
| 4D) | Draw a labelled diagram of X ray tube. | (2) |
| 4E) | Define absorbed dose. | (2) |

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Question Paper

Exam Date & Time: 30-May-2022 (10:00 AM - 12:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. CARDIOVASCULAR TECHNOLOGY DEGREE EXAMINATION - MAY/JUNE 2022
SUBJECT: CVT2242 - PROGRAM ELECTIVE-I - PACEMAKER PROGRAMMING AND ANALYSIS
(2020 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

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|-----|---|------|
| 1) | Discuss the preliminary settings required in Cath lab for device insertion. | (10) |
| 2) | How do the pacemaker malfunctions are identified and rectified? | (10) |
| 3A) | Discuss Single chamber timing intervals. | (5) |
| 3B) | What are the acute complications of pacing device insertion? | (5) |
| 3C) | What is the sequential approach for pacemaker analysis? | (5) |
| 3D) | How a pacing threshold test is performed? | (5) |
| 4A) | Mention the various pacing device companies. | (2) |
| 4B) | Define sensitivity. | (2) |
| 4C) | Define end of life. | (2) |
| 4D) | Name the tools used in extraction. | (2) |
| 4E) | Define cross talk. | (2) |

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Question Paper

Exam Date & Time: 01-Jun-2022 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. CARDIOVASCULAR TECHNOLOGY DEGREE EXAMINATION - MAY/JUNE 2022
SUBJECT: CVT 2202 - CONGENITAL HEART DISEASES-I
(2020 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Describe the classification, pathophysiology, ECG, X-ray, management of Aorto pulmonary Window. (20)
- 2) Explain embryology, classification, clinical features and Echocardiography of complete AV canal defect. (20)
- 3) Explain pathophysiology & clinical findings in Obstructive & non obstructive form of TAPVC. (10)
- 4) Explain the echo findings and management of Coarctation of aorta. (10)
- 5A) Explain the echocardiographic finding of Ebstein's anomaly. (5)
- 5B) Enumerate various types of Atrial septal defects. (5)
- 5C) How do you visualize pulmonary vascularity in chest Xray? (5)
- 5D) Explain echocardiographic findings of Ventricular septal defect. (5)
- 5E) Describe hemodynamics in ALCAPA (5)
- 5F) With a neat labelled diagram, list the anatomical classification of Patent ductus arteriosus. (5)
- 6A) Draw a neat labelled diagram of parachute mitral valve. (2)
- 6B) Define Visceral situs (2)
- 6C) List the components of Shone's complex. (2)
- 6D) Define pulmonary plethora & Pulmonary oligemia. (2)
- 6E) Mention the components of Scimitar syndrome. (2)

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Question Paper

Exam Date & Time: 03-Jun-2022 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER B.Sc. CARDIOVASCULAR TECHNOLOGY DEGREE EXAMINATION - MAY/JUNE 2022
SUBJECT: CVT2201 - CARDIAC PACEMAKERS AND DEFBRILLATORS
(2020 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Explain the physiology behind cardiac pacing and add a note on cardiac pacing hemodynamics. (20)
- 2) Discuss the ACC/AHA guidelines for implantable cardiac defibrillator device insertion and explain the steps of implantation. (20)
- 3) Explain the pacing timing cycles and intervals. (10)
- 4) What are rate adaptive pacemakers? Explain the different types of sensors. (10)
- 5A) Illustrate EMI related pacemaker problems in the hospital setting. (5)
- 5B) Discuss the acute complications of cardiac device implants. (5)
- 5C) Write a note on unipolar pacing leads. (5)
- 5D) Define ohms law and explain its role in cardiac pacing devices. (5)
- 5E) Write a note on magnet function. (5)
- 5F) Write the Pro's and Con's of Bipolar leads. (5)
- 6A) Define NBG coding. (2)
- 6B) What is Maximum Track rate? (2)
- 6C) Give two indications for Biventricular pacing. (2)
- 6D) Define DDIR pacing mode. (2)
- 6E) Define AV synchrony. (2)

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