

Question Paper

Exam Date & Time: 06-Dec-2019 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. CARDIOVASCULAR TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2019

SUBJECT: BCVT 205 - CARDIAC STRESS TESTS

(2016 SCHEME)

Friday, December 06, 2019 (14.00 - 16.00)

Answer all the questions.

Draw the diagram wherever necessary.

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Explain procedure and Interpretation of exercise Treadmill test. (10)
- 2) What are the indications, Contraindications of DSE and define Bull's eye interpretation. (10)
- 3A) Explain Types of protocols used in TMT. (5)
- 3B) Explain ECG lead system in treadmill test. (5)
- 3C) How do you interpret PET scan? (5)
- 3D) Explain indication and interpretation of Dipyridamole test. (5)
- 4A) Write any four non coronary indications for TMT. (2)
- 4B) Enumerate any four causes for exertional hypotension. (2)
- 4C) What is the role of Atropine injection and its importance during TMT? (2)
- 4D) Define metabolic equivalent. (2)
- 4E) Define Rate pressure product and also comment on its importance. (2)

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Question Paper

Exam Date & Time: 07-Dec-2019 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. CARDIOVASCULAR TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2019

SUBJECT: BCVT 201 - CARDIAC EMBRYOLOGY

(2016 SCHEME)

Saturday, December 07, 2019 (14.00 - 16.00)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Explain the formation of interatrial septum and its anomalies in brief. (10)
- 2) Explain the formation of pharyngeal arch arteries and their fate. (10)
- 3A) Write a short note on spermatogenesis. (5)
- 3B) Explain the formation of Atrio-ventricular valves. (5)
- 3C) Describe the prophase phases of meiosis I. (5)
- 3D) Explain the development of pericardium. (5)
- 4A) Mention four arch anomalies. (2)
- 4B) What forms the inflow and outflow portion of ventricles? (2)
- 4C) Mention three components that form left atrium. (2)
- 4D) What is the fate of spermatozoa during fertilization? (2)
- 4E) Define fertilization. (2)

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Question Paper

Exam Date & Time: 09-Dec-2019 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. CARDIOVASCULAR TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2019

SUBJECT: BCVT 203 - ULTRASOUND PHYSICS AND DOPPLER PRINCIPLES

(2016 SCHEME)

Monday, December 09, 2019 (14.00 - 16.00)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Draw a neat labelled diagram of an ultrasound transducer and describe its components. Describe different types of Ultrasound Transducers and their clinical applications briefly. (10)
- 2) Give a systematic approach in transthoracic 2D examination of cardiac chambers in detail. (10)
- 3A) Briefly explain Doppler artifacts and 2-Dimensional artifacts. (5)
- 3B) Describe Billiard Ball Effect and Bernoulli's Equation with an example. (5)
- 3C) What is Nyquist Limit? Describe Aliasing in brief. (5)
- 3D) Describe different types of resolution with a labelled diagram. (5)
- 4A) Mention the importance of the following knobs: TGC, 2D, TDI, M-mode. (2)
- 4B) What is Fresnel's zone and Fraunhofer's zone? What are the factors that affect near field? (2)
- 4C) Differentiate between specular and scattered echo's. Give examples for each. (2)
- 4D) Mention the advantages of Tissue Harmonic Imaging. (2)
- 4E) Describe Doppler Shift with an equation. (2)

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