

Question Paper

Exam Date & Time: 27-Jan-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST SEMESTER M.Sc. (ECHOCARDIOGRAPHY) DEGREE EXAMINATION - JANUARY 2023
SUBJECT: CVS5101- ULTRASOUND, DOPPLER PRINCIPLES AND EMBRYOLOGY
(2021 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

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| 1) | Explain embryonic development stages including mitosis and meiosis in detail | (20) |
| 2) | Briefly explain myocardial contrast echocardiography | (20) |
| 3A) | Describe the physical instrumentation and uses of trans esophageal echocardiography | (10) |
| 3B) | Explain the embryological development of Germ layers | (10) |
| 3C) | Discuss the pulsed wave and continuous wave Doppler in brief | (10) |
| 3D) | Explain the formation of great systemic veins | (10) |
| 4A) | Describe the formation of AV valves in detail | (5) |
| 4B) | Write a note on Colour flow imaging | (5) |
| 4C) | Describe Pressure half time and PISA method by Doppler echocardiography | (5) |
| 4D) | Explain the formation of ventricles | (5) |

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Question Paper

Exam Date & Time: 30-Jan-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST SEMESTER M.Sc. (ECHOCARDIOGRAPHY) DEGREE EXAMINATION - JANUARY 2023
SUBJECT: CVS5102- DIAGNOSTIC IMAGING MODALITIES
(2021 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Explain the basic concept, techniques and protocols of computed cardiac tomography (20)
- 2) Describe the clinical applications and indications of Cardiovascular MRI in aortic and coronary artery diseases (20)
- 3) Explain the principle, protocol of SPECT in the assessment viable myocardium (10)
- 4) Discuss the metabolic tracers used in PET scan and explain the role of PET scan to diagnose dilated cardiomyopathy (10)
- 5) Describe the indications of intra cardiac echocardiography in mitral valve interventional procedures (10)
- 6) Explain the appropriate contraindications of Cardiovascular MRI (10)
- 7A) Write a note on advantages and limitations of PET scan (5)
- 7B) Explain the technical artifacts of SPECT (5)
- 7C) Write a note on Adenosine and Dipyridamole pharmacological agent (5)
- 7D) Explain coronary calcium scoring (5)

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