

Question Paper

Exam Date & Time: 10-Dec-2018 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. CARDIOVASCULAR TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2018
SUBJECT: BCVT 201 - CARDIAC EMBRYOLOGY
(2016 SCHEME)
Monday, December 10, 2018 (14.00 - 16.00)

Answer ALL questions.

Marks: 50

Duration: 120 mins.

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| 1) | Explain germ layers in detail. | (10) |
| 2) | Explain the development of right atrium in detail. | (10) |
| 3A) | Explain the stages of mitosis. | (5) |
| 3B) | Describe the conotruncal development. Mention two conotruncal anomalies. | (5) |
| 3C) | Write a short note on the functions of placenta. | (5) |
| 3D) | Explain the fate of cardinal veins briefly. | (5) |
| 4A) | What is cardiac looping? | (2) |
| 4B) | List four differences between mitosis and meiosis. | (2) |
| 4C) | What is Morulla? | (2) |
| 4D) | Define spermiogenesis. | (2) |
| 4E) | List the components of heart tube. | (2) |

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Question Paper

Exam Date & Time: 12-Dec-2018 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. CARDIOVASCULAR TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2018
SUBJECT: BCVT 203 - ULTRASOUND PHYSICS AND DOPPLER PRINCIPLES
(2016 SCHEME)

Wednesday, December 12, 2018 (14.00 - 16.00)

Answer all the questions.

Draw the diagram wherever necessary.

Marks: 50

Duration: 120 mins.

- 1) Draw a labelled diagram of ultrasound transducer and also mention its clinical application (10) in detail.
- 2) Explain feasibility, technical steps and evaluation of hemodynamics by proximal isovelocity surface area (PISA) method of echocardiography. (10)
- 3A) Explain echocardiographic approach in identifying anatomical atria and ventricles. (5)
- 3B) Describe continuous wave Doppler in brief. (5)
- 3C) Explain Bernoulli's principle. (5)
- 3D) Explain tissue harmonic imaging in detail. (5)
- 4A) Define far field and near field. (2)
- 4B) What is aliasing in Doppler echocardiography? (2)
- 4C) Define Billiard ball effect. (2)
- 4D) What is Doppler flow masking? (2)
- 4E) Define spatial resolution. (2)

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Question Paper

Exam Date & Time: 14-Dec-2018 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. CARDIOVASCULAR TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2018
SUBJECT: BCVT 205 - CARDIAC STRESS TESTS
(2016 SCHEME)

Friday, December 14, 2018 (14.00 - 16.00)

Answer all the questions.

Draw the diagram wherever necessary.

Marks: 50

Duration: 120 mins.

- 1) Write a note on Bruce protocol of treadmill test and coronary indications in detail. (10)
- 2) Briefly describe Procedural detail and indications to termination of Dobutamine stress echo. (10)
- 3A) Describe the ST-T changes in TMT. (5)
- 3B) Write a note on Dipyridamole test. (5)
- 3C) Write any four absolute and relative contraindications of TMT. (5)
- 3D) How to interpret SPECT scan. (5)
- 4A) Define Metabolic Equivalent (MET). (2)
- 4B) Define myocardial oxygen consumption. (2)
- 4C) Define ST/HR slope in TMT. (2)
- 4D) What are the indications of Atropine test? (2)
- 4E) Write any four indications of Dobutamine stress test. (2)

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Question Paper

Exam Date & Time: 06-Dec-2018 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

**THIRD SEMESTER B.O.T./ B.Sc. P.F.T./ BPT/ B.Sc. C.V.T./B.Sc. R.T./ B.Sc. M.I.T./ B.Sc. RRT&DT
DEGREE EXAMINATION - DECEMBER 2018**

**SUBJECT : MICR 201 - MICROBIOLOGY
(2016 SCHEME)**

Thursday, December 06, 2018 (14.00 - 16.00)

Answer ALL questions:

Marks: 50

Duration: 120 mins.

- 1) With a labelled diagram explain the cell wall of gram positive and gram negative bacteria. (10)
(5+5 = 10 marks)
- 2) Explain the etio-pathogenesis and laboratory diagnosis of cholera. (10)
(1+4+5 = 10 marks)

3) Write short notes on:

- 3A) Laboratory diagnosis of HIV infection (5)
- 3B) Bacterial growth curve (5)
- 3C) Pathogenesis of poliomyelitis (5)
- 3D) Laboratory diagnosis of viral infections (5)

4) Answer the following questions:

- 4A) Indirect immunofluorescence test (2)
- 4B) Clinical features of urinary tract infections (2)
- 4C) Types of vaccines with examples (2)
- 4D) Classification of PUO (2)
- 4E) Morphology of Entamoeba histolytica (2)

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MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.O.T./ B.Sc. P.F.T./ BPT/ B.Sc. M.R.T./B.Sc. C.V.T./B.Sc. R.T./ B.Sc. M.I.T./B.Sc.
RRT&DT DEGREE EXAMINATION - DECEMBER 2018
SUBJECT : PATH 201 - PATHOLOGY
(2016 SCHEME)

Monday, December 03, 2018 (14.00 - 16.00)

Answer ALL questions:

Marks: 50

Duration: 120 mins.

- 1A) Define necrosis. List any three types of necrosis with examples. (5)
(2+3 = 5 marks)
- 1B) Define granuloma and illustrate it with a suitable diagram. Enumerate the causes of granulomatous inflammation. (5)
(3+2 = 5 marks)
- 2A) Describe the predisposing factors and complications of atherosclerosis. (5)
- 2B) Describe the aetiology and clinical features of rheumatic heart disease. (5)
- 3A) Differentiate between healing by primary and secondary intention with suitable examples. (5)
- 3B) Define embolism. Enlist the types of embolism. Write a note on the clinicopathological consequences of pulmonary thromboembolism. (5)
(1+3+1 = 5 marks)
- 3C) i) Write a short notes on: Emphysema (5)
- 3C) ii) Write a short notes on: Jaundice (5)
- 4A) Mention the confirmatory tests for iron deficiency anaemia and thalassaemia. (2)
- 4B) List four features of a malignant tumour. (2)
- 4C) List four complications of diabetes mellitus. (2)
- 4D) List four features of nephrotic syndrome. (2)
- 4E) List four causes of thrombocytopenia. (2)

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