

Question Paper

Exam Date & Time: 13-Jan-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. CARDIOVASCULAR TECHNOLOGY DEGREE EXAMINATION - JANUARY 2021
SUBJECT: BCVT 201 - CARDIAC EMBRYOLOGY
(2016 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

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|-----|--|------|
| 1) | Explain the formation of pharyngeal arch arteries and their fate | (10) |
| 2) | Explain the stages of development of the heart tube | (10) |
| 3A) | Explain the formation of right atrium | (5) |
| 3B) | Describe the development of atrioventricular valves and semilunar valves | (5) |
| 3C) | Write a short note on the functions of placenta | (5) |
| 3D) | Explain the fate of sinus venosus briefly | (5) |
| 4A) | List FOUR differences between mitosis and meiosis | (2) |
| 4B) | Define Morula. | (2) |
| 4C) | Mention the components that form left atrium | (2) |
| 4D) | Define Oogenesis | (2) |
| 4E) | Mention the components that form superior vena cava. | (2) |

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Question Paper

Exam Date & Time: 15-Jan-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. CARDIOVASCULAR TECHNOLOGY DEGREE EXAMINATION - JANUARY 2021
SUBJECT: BCVT 203 - ULTRASOUND PHYSICS AND DOPPLER PRINCIPLES
(2016 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- | | | |
|-----|---|------|
| 1) | Explain the types of transducers and its clinical applications | (10) |
| 2) | Describe the biological effects of ultrasound in detail | (10) |
| 3A) | Enumerate role of pressure half time in assessment of aortic regurgitation | (5) |
| 3B) | Explain mitral valve m-mode | (5) |
| 3C) | Define resolution and its types | (5) |
| 3D) | Differentiate pulse wave doppler and continuous wave doppler | (5) |
| 4A) | Write various doppler artifacts | (2) |
| 4B) | Define attenuation and specular reflection | (2) |
| 4C) | Draw echocardiographic view for four chamber and parasternal long axis view | (2) |
| 4D) | Write the Bernoulli's | (2) |
| 4E) | Draw the tissue annular velocity pattern | (2) |

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Question Paper

Exam Date & Time: 18-Jan-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.O.T./ B.Sc. P.F.T./ BPT/ B.Sc. M.R.T./B.Sc. RADIOTHERAPY TECHNOLOGY/ B.Sc. C.V.T./B.Sc.
R.T./B.Sc. M.I.T./B.Sc. RRT&DT/B.Sc. EMT/B.Sc. AOTT DEGREE EXAMINATION - JANUARY 2021
SUBJECT: PATH 201 - PATHOLOGY
(2016/2016 RV/2019 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1A) Define leukaemia. Classify acute leukaemia. Describe the clinical features of acute leukaemia. (6)
(2+2+2 = 6 marks)
- 1B) Describe the blood picture and chromosomal abnormality of chronic myeloid leukaemia. (4)
- 2A) Compare the two major types of diabetes mellitus. (5)
- 2B) Define shock. Explain the pathogenesis of septic shock. (5)
(2+3 = 5 marks)
- 3A) Explain the vascular and cellular changes in acute inflammation. (5)
- 3B) Describe the etiology, modes of infection and clinical features of viral hepatitis. (5)
- 3C) Explain the process of fracture healing with factors influencing the healing. (5)
- 3D) Describe the types and morphology of tuberculosis. (5)

4. Write briefly on:

- 4A) Predisposing factors of atherosclerosis. (2)
- 4B) Cerebrovascular diseases. (2)
- 4C) Klinefelter's syndrome. (2)
- 4D) Carcinogenesis with suitable examples. (2)
- 4E) Clinical features of renal failure. (2)

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Question Paper

Exam Date & Time: 20-Jan-2021 (02:30 PM - 04:30 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/B.Sc. EMT/B.Sc. AOTT
DEGREE EXAMINATION -
JANUARY 2021
SUBJECT: MICR 201 - MICROBIOLOGY
(2016/2019 SCHEME)

Answer all the questions.
Draw diagrams wherever necessary.

Marks: 50

Duration: 120 mins.

- 1) Define and classify hypersensitivity reactions. Write in detail about type I hypersensitivity reaction. (10)
(1+2+7 = 10 marks)
- 2) Describe in detail the pathogenesis and prophylaxis of poliomyelitis. (10)
(5+5 = 10 marks)

3. Write short notes on:

- 3A) Bacterial flagella (5)
- 3B) Laboratory diagnosis of enteric fever. (5)
- 3C) Autoclave (5)
- 3D) ELISA (5)

4. Write short notes on:

- 4A) Define plasmids. Mention two properties of plasmids. (2)
- 4B) Two contributions of Robert Koch. (2)
- 4C) Two staining methods for *Mycobacterium tuberculosis*. (2)
- 4D) Draw a neat labelled diagram of trophozoite and cyst forms of *Entamoeba histolytica*. (2)
- 4E) Classify fungi according to morphology with one example each. (2)

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Question Paper

Exam Date & Time: 22-Jan-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. CARDIOVASCULAR TECHNOLOGY DEGREE EXAMINATION - JANUARY 2021
SUBJECT: BCVT 205 - CARDIAC STRESS TESTS
(2016 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

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|-----|--|------|
| 1) | Describe interpretation of Dobutamine stress echo in detail. | (10) |
| 2) | Discuss non-coronary indications of treadmill test | (10) |
| 3A) | Explain the heart rate response during treadmill test | (5) |
| 3B) | Explain the role of atropine test | (5) |
| 3C) | Describe MUGA scanning | (5) |
| 3D) | Explain the procedure for Dypiradamol test | (5) |
| 4A) | Define metabolic equivalents | (2) |
| 4B) | Write the complication of treadmill test | (2) |
| 4C) | Write four level angina scale for exercise stress test | (2) |
| 4D) | Define chronotropic incompetence | (2) |
| 4E) | Write the formula to calculate maximum oxygen uptake | (2) |

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