

# Question Paper

Exam Date & Time: 16-Mar-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 - MARCH 2021  
SUBJECT: PATH 201 - PATHOLOGY  
(2016/2016 RV/2019 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Define anaemia. Describe the clinical features and laboratory diagnosis of nutritional anaemias. (10)  
(2+8 = 10 marks)
- 2A) Define and classify fracture. Describe the process of fracture healing. (5)  
(2+3 = 5 marks)
- 2B) Compare rheumatoid arthritis and osteoarthritis. (5)
- 3A) Describe the features of malignancy and routes of tumour spread. (5)
- 3B) List the types of shock and describe the pathogenesis of any one. (5)
- 3C) List the predisposing factors and complications of atherosclerosis. (5)
- 3D) Compare nephrotic syndrome and nephritic syndrome with suitable examples. (5)
- 4A) List the various types of emphysema. (2)
- 4B) Define cirrhosis of liver. List two causes. (2)
- 4C) List the cardinal features of acute inflammation. (2)
- 4D) List four examples of X-linked diseases. (2)
- 4E) List the various types of necrosis with suitable examples. (2)

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# Question Paper

Exam Date & Time: 18-Mar-2021 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. RADIOTHERAPY TECHNOLOGY DEGREE EXAMINATION - MARCH 2021  
SUBJECT: BRTT 201 - RADIOTHERAPY EQUIPMENTS  
(2016 RV SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) With the neat labelled diagram explain the block diagram of medical linear accelerator. (20)
- 2) With the neat labelled diagram explain the construction and working of cyclotron and cobalt 60 tele therapy unit. (20)
- 3) With the neat labelled diagram explain the construction and working of microtron. (10)
- 4) What are the different radioactive sources used in brachytherapy. What are the ideal characteristics of brachytherapy source? (10)
- 5A) Write a short note on DSA application. (5)
- 5B) Briefly explain the principle and function of CT simulator. (5)
- 5C) Mention the different beam modifying devices and explain any two. (5)
- 5D) Define penumbra. Explain the types of penumbra. (5)
- 5E) Write short note on Radiotherapy simulator. (5)
- 5F) Write a short note on portal imaging device. (5)
- 6A) What is tube and filament current? (2)
- 6B) What is cerrobend? Mention the use, density and the components of cerrobend. (2)
- 6C) Define point A and explain its clinical significance. (2)
- 6D) What is flattening filter? Why it is used in LINAC? (2)
- 6E) List advantage of rotating anode x-ray tube. (2)

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# Question Paper

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



## MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. RADIOTHERAPY TECHNOLOGY DEGREE EXAMINATION - MARCH 2021  
SUBJECT: BRTT 203- PRINCIPLES AND PRACTICE OF RADIOLOGY PART I  
(2016 RV SCHEME)

Marks: 50

Duration: 120 mins.

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|-----|---|------|
| 1)  | Discuss the interaction of x ray with matter in detail. | (10) |
| 2)  | Discuss the Construction and types of X-ray film.       | (10) |
| 3A) | Discuss Characteristic curve with labelled diagram.     | (5)  |
| 3B) | Explain PACS in detail.                                 | (5)  |
| 3C) | Explain construction of an intensifying screen.         | (5)  |
| 3D) | Definition and types of grid.                           | (5)  |
| 4A) | Define Anode heel effect.                               | (2)  |
| 4B) | Name the constituents of developer solution.            | (2)  |
| 4C) | Draw a labelled diagram of cassette.                    | (2)  |
| 4D) | Define Space charge effect.                             | (2)  |
| 4E) | List steps involved in manual processing.               | (2)  |

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# Question Paper

Exam Date & Time: 24-Mar-2021 (02:30 PM - 04:30 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. RESPIRATORY THERAPY TECHNOLOGY DEGREE EXAMINATION - MARCH 2021  
SUBJECT: BRTT 205 - PATIENT POSITIONING AND IMMOBILIZATION-MOULD ROOM TECHNIQUES  
(2016 RV SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Briefly explain the concept of immobilization of the diaphragm. (10)
- 2) Define immobilization devices. Mention the objective and characteristics of immobilization devices. (10)
- 3A) Briefly explain the individual malignancies immobilization in oral cavity. (5)
- 3B) Write a short note on shielding block. (5)
- 3C) Explain the function and need of Radiotherapy simulator. (5)
- 3D) Write a short note on preparation of brachytherapy mold. (5)
- 4A) What is wedge angle? (2)
- 4B) Name the different lasers users in patient positioning in radiotherapy. (2)
- 4C) Mention the density of lead and Cerro bend. (2)
- 4D) Name the different patient elevation system. (2)
- 4E) Write a short note on shoulder retractor. (2)

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