

Question Paper

Exam Date & Time: 07-Dec-2019 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. MEDICAL RADIOTHERAPY TECHNOLOGY /B.Sc. RADIOTHERAPY TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2019

SUBJECT: BMRT 201/BRTT 201 - RADIOTHERAPY EQUIPMENTS

(2016/2016 RV SCHEME)

Saturday, December 07, 2019 (14.00 - 17.00)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) With the neat labelled diagram explain the linac electron and X-ray head. (20)
- 2) What is brachytherapy? Mention the various techniques and classification in brachytherapy also mention the advantages and limitation of brachytherapy. (20)
- 3) With the neat labelled diagram explain the construction and working of cyclotron. (10)
- 4) **Write a short note on:** (10)
 - a) Penumbra
 - b) Beam collimation
- 5A) Briefly explain the working of magnetron. (5)
- 5B) Discuss about various types of beam ON mechanism in cobalt 60 units. (5)
- 5C) Write a short note on compensators. (5)
- 5D) Mention the different beam modifying devices and explain any two. (5)
- 5E) Write short note on Radiotherapy simulator. (5)
- 5F) Briefly explain the concept of beam collimation system. (5)
- 6A) Name the various patient verification system. (2)
- 6B) Mention at what voltage superficial and orthovoltage therapy work. (2)
- 6C) List disadvantage of rotating anode x-ray tube. (2)
- 6D) Mention two types of penumbra. (2)
- 6E) What is angular distribution? (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. RADIOTHERAPY TECHNOLOGY/B.Sc. MEDICAL RADIOTHERAPY TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2019

SUBJECT: BRTT 203/BMRT 203 - PRINCIPLES AND PRACTICE OF RADIOLOGY: PART I

(2016 RV /2016 SCHEME)

Monday, December 09, 2019 (14.00 - 16.00)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Construction and types of cassettes (10)
- 2) Explain the steps involved in manual processing. (10)
- 3) **Write short essays on:**
 - 3A) Characteristic radiation (5)
 - 3B) Transport mechanism in automatic processor (5)
 - 3C) Write a note on tube rating Grid controlled X-ray tube (5)
 - 3D) (5)
- 4) **Write short notes on:**
 - 4A) Define the types of Luminescence. (2)
 - 4B) Define irradiation and halation. (2)
 - 4C) Give the reason for using molybdenum disc in rotating anode X-ray tube. (2)
 - 4D) Function of rollers in automatic processor (2)
 - 4E) Define off-focus radiation. (2)

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Question Paper

Exam Date & Time: 10-Dec-2019 (02:00 PM - 04:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. RADIOTHERAPY TECHNOLOGY/B.Sc. MEDICAL RADIOTHERAPY TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2019
SUBJECT: BRTT 205/BMRT 205 - PATIENT POSITIONING AND IMMOBILIZATION/MOULD ROOM TECHNIQUES (2016 RV /2016 SCHEME)
Tuesday, December 10, 2019 (14.00 - 16.00)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Mention the different patient elevation system and explain any three. (10)
- 2) Briefly explain the Respiratory Motion Management Techniques for Chest and Abdominal Radiation Therapy. (10)
- 3A) Write short note on Styrofoam cutter. (5)
- 3B) Write short note on 4DCT simulator. (5)
- 3C) Write a short note on preparation of brachytherapy mould. (5)
- 3D) Write a note on video based portal imaging device. (5)
- 4A) Explain the function of radiotherapy simulator. (2)
- 4B) Write a short note on shoulder retractor. (2)
- 4C) Mention the composition of Cerro bend. (2)
- 4D) Define divergent block. (2)
- 4E) What are the objective of immobilization devices? (2)

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