

Question Paper

Exam Date & Time: 06-Dec-2018 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. MEDICAL RADIOTHERAPY TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2018

**SUBJECT: BRTT 201 - RADIOTHERAPY EQUIPMENTS
(2016 SCHEME)**

Thursday, December 06, 2018 (14.00 - 17.00)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Draw a neat labelled diagram of rotatory anode X-ray tube and discuss in detail about the parts. (20)
- 2) What is brachytherapy? Mention the various techniques and classification in brachytherapy also mention the advantages and limitation of brachytherapy. (20)
- 3A) **Briefly explain about:** (10)
 - i) Various types of beam ON mechanism in cobalt 60 units.
 - ii) Compensator.
- 3B) **Write a short note on:** (10)
 - i) Penumbra
 - ii) Beam collimation
- 4A) Briefly explain the principle and function of CT simulator. (5)
- 4B) Write a short note on RFA. (5)
- 4C) Write a short note on wedge. (5)
- 4D) Mention the different beam modifying devices and explain any TWO. (5)
- 4E) Define penumbra. Explain different types of penumbra. (5)
- 4F) What is angular distribution? (5)
- 5A) Name the various patient verification system. (2)
- 5B) List the requirements of ideal brachytherapy source. (2)
- 5C) Mention at what voltage contact therapy and orthovoltage therapy work. (2)
- 5D) What is attenuation and define half value layer. (2)
- 5E) Define point A in gynaecological brachytherapy and explain its significance. (2)

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Question Paper

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



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. MEDICAL RADIOTHERAPY TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2018

**SUBJECT: BRTT 203 - PRINCIPLES AND PRACTICE OF RADIOLOGY: PART I
(2016 SCHEME)**

Monday, December 10, 2018 (14.00 - 16.00)

Answer ALL questions.

Marks: 50

Duration: 120 mins.

- 1) Explain the construction of cassettes and its types. Add a note on the care of cassettes. (10)
- 2) Explain Automatic film processing in detail. (10)
- 3A) List out the components of PACS and explain the advantages of PACS. (5)
- 3B) Gas filled X ray tube (5)
- 3C) Types of X ray films (5)
- 3D) Define filtration. Explain K-edge filter. (5)
- 4A) Define tube current. (2)
- 4B) Why tungsten is used as a target material? (2)
- 4C) Draw the characteristic curve and label the parts. (2)
- 4D) Use of intensifying screens. (2)
- 4E) Define focal spot. (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. MEDICAL RADIOTHERAPY TECHNOLOGY DEGREE EXAMINATION - DECEMBER 2018

SUBJECT: BRTT 205 - PATIENT POSITIONING AND IMMOBILIZATION/MOULD ROOM TECHNIQUES (2016 SCHEME)

Wednesday, December 12, 2018 (14.00 - 16.00)

Answer ALL questions.

Marks: 50

Duration: 120 mins.

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| 1) | Briefly explain the concept of Immobilization of the Diaphragm. | (10) |
| 2) | Explain different types of simulators. | (10) |
| 3A) | Write a short note on Thermoplastic masks. | (5) |
| 3B) | Write short note on X-ray Simulator. | (5) |
| 3C) | Briefly explain the preparation of brachytherapy mould. | (5) |
| 3D) | Write a note on electronic portal imaging system. | (5) |
| 4A) | Name the different immobilization devices. | (2) |
| 4B) | What is wedge angle? | (2) |
| 4C) | Name the different lasers used in patient positioning in Radiotherapy. | (2) |
| 4D) | What are types of block? | (2) |
| 4E) | Define immobilization devices. | (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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