



B.Sc. Allied Health Sciences Third Year Semester-VI

September-2023 Examination

B.Sc. Radiotherapy Technology

Time : 3 Hrs.

Paper – I

[Max. Marks : 100]

Subject : Radiotherapy-I

Q.P Code: J6631

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

LONG ESSAY

2 X 10 = 20 Marks

- 1 What is a beam modifying device? Explain about wedge and tissue compensators.
- 2 Define Stereotactic Radiation Therapy (SRT) and explain about its treatment applications.

SHORT ESSAY (Answer any Ten)

10 X 5 = 50 Marks

- 3 What is the purpose of using shoulder retractor and breast board during radiotherapy?
- 4 Explain about total body irradiation.
- 5 What is meant by conformal beam radiation therapy? What are its types?
- 6 Write about the properties and uses of radium and cesium isotopes.
- 7 Write step by step about dark room procedures.
- 8 What are the factors affecting the X-ray image quality and explain any three.
- 9 Explain in detail about the Emergency procedure when the radioactive source is stuck inside brachytherapy applicator?
- 10 Define gene therapy. Write its types and benefits.
- 11 Write any three QA checks in brachytherapy.
- 12 Importance of farmer type ionization chamber in quality assurance tests of telecobalt machine.
- 13 Exposure at one foot distance from a source is 456 R/h. At what distance from the source (in feet) will the exposure be 100, 5, and 2 mR/h
- 14 In telecobalt machine, after completion of treatment the source is stuck in ON position. What is the procedure to push the source back onto off position manually?

SHORT ANSWERS (Answer any Ten)

10 X 3 = 30 Marks

- 15 Uses of head rest in head and neck treatment.
- 16 Define PDD, TAR.
- 17 What are the types of brachytherapy? Give an example.
- 18 Stereotactic Radio Surgery
- 19 Define wedge angle and hinge angle.
- 20 What are the materials used for making Tissue compensators.
- 21 Write about bending magnets in brief.
- 22 What factors are to be applied for absolute dose measurement of telecobalt beam in water?
- 23 Types of MLC.
- 24 Bolus material.
- 25 Give expansion of 3DCRT, IMRT, IGRT, VMAT, SRS, SRT, TBI and SBRT.
- 26 Properties and use of Iridium 192



B.Sc. Allied Health Sciences Third Year Semester-VI

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B.Sc. Radiotherapy Technology

Time : 3 Hrs.

Paper – II

[Max. Marks : 100]

Subject : Radiotherapy-II

Q.P Code: J6632

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

LONG ESSAY

2 X 10 = 20 Marks

- 1 Image guided radiotherapy
- 2 Explain 3-DCRT and IMRT in detail

SHORT ESSAY (Answer any Ten)

10 X 5 = 50 Marks

- 3 Adjuvant Radiotherapy
- 4 CT simulation - explain the steps
- 5 Cyber knife
- 6 Cardiopulmonary resuscitation
- 7 Proton beam therapy
- 8 Medical waste management
- 9 Intra operative RT
- 10 Total body irradiation
- 11 Role of NGOs in the management of cancer patients
- 12 Enumerate about the importance of written informed consent in Radiotherapy
- 13 The professional of Radiotherapy technologist
- 14 Radiation sensitizer

SHORT ANSWERS (Answer any Ten)

10 X 3 = 30 Marks

- 15 Non-discriminatory practice
- 16 What are MLC? Mention 2 advantages of MLC
- 17 Mention 3 QA tests for Linear accelerator
- 18 Name three Immobilisation devices used in Head and Neck RT
- 19 Write 3 advantages of Cyber knife over Gamma knife
- 20 Port Film
- 21 Define Isocenter
- 22 Write 3 drawbacks of Tomotherapy over conventional LINAC
- 23 Mention 6 parts of Tomotherapy
- 24 Explain Confidentiality in data handling
- 25 Name 3 funding agencies for research in Radiation oncology
- 26 Steps of X-ray simulation

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