SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Third Year (Semester-V)
March 2021 Examination

B.Sc. Radiotherapy Technology

Time: 3 Hrs. **[Max. Marks: 100]**

Paper-I

Radiation Physics

Q.P Code: J5610

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

LONG ESSAY **2 X 10 = 20 Marks**

1 Write about cobalt 60 source and what are the components of the telecobalt machine.
2 Write about personnel monitoring device TLD – principle, advantages, uses and types.

SHORT ESSAY (Answer any Ten) **10 X 5 = 50 Marks**

3 Explain about the measurement of beam quality.
4 Describe in detail of artificial radioactivity.
5 Write a brief note on HDR units
6 The properties of two sources used in high dose rate remote after loading system and its advantages and disadvantages
7 Treatment planning system for external beam therapy
8 The various factors influencing percentage depth dose
9 What is meant Wedges and types of wedges used in linear accelerators?
10 Distinguish between klystron and magnetron
11 Front and back pointer
12 What are methods used for applying tissue heterogeneity correction.
13 Explain the importance of Multi leaf collimators in radiotherapy
14 What is depth of dose maximum? Describe the methods to increase the surface dose.

SHORT ANSWERS (Answer any Ten) **10 X 3 = 30 Marks**

15 Define specific activity and give its unit.
16 Half-life and tenth-life.
17 What is back scatter factor?
18 Disadvantages of kilovoltage units
19 Dose limits to radiation worker and public.
20 Define percentage depth dose.
21 Calculate the equivalent square field of 8x 12 $cm^2$and 5x15 cm^2
22 HVT and TVT
23 Write a note on bolus materials
24 Define Penumbra. What are the types of penumbra.
25 Concept of irregular field
26 What is skin sparing effect?

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B.Sc. Allied Health Sciences Third Year (Semester-V)
March 2021 Examination

B.Sc. Radiotherapy Technology (RTT)

Time : 3 Hrs. **[Max. Marks : 100]**

Paper-II

Principle and Practice of Radiotherapy

Q.P Code : J5620

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

LONG ESSAY **2 X 10 = 20 Marks**

1 Management of lung cancer and the role of respiratory gating
2 Blood irradiation - Uses, Purpose, Equipment required, Procedure & Dose.

SHORT ESSAY (Answer any Ten) **10 X 5 = 50 Marks**

3 Radiotherapy in Ca Esophagus
4 Radiotherapy in Ca Nasopharynx
5 MUO neck node
6 Management of Brain metastasis
7 Direct and Indirect effects of Radiation
8 Write briefly about NS, DNS & RL. Mention one use for each.
9 VMAT
10 Explain the Indications, procedure, planning and dose of ICBT
11 Seminoma testis
12 What is water protocol.? Where is it used and its advantages?
13 Gamma zone monitor. Principle of functioning and use
14 Write a neat labeled diagram of Telecobalt machine and label its parts

SHORT ANSWERS (Answer any Ten) **10 X 3 = 30 Marks**

15 Use of Room lasers in Radiotherapy
16 ALARA
17 Last man out switch
18 Expand TDF
19 Hormone therapy
20 Retinoblastoma
21 Name 3 OARs during Pelvic Radiotherapy
22 What is PORV.?
23 Name 3 techniques to reduce bowel dose during pelvic RT
24 Name 3 situations when patient in prone position is advantageous dosimetrically
25 What is Claustrophobia?
26 What is Breast board and its use..?

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