

B. Sc. MEDICAL TECHNOLOGY (RADIOTHERAPY) (BRT)
SEMESTER -IV EXAMINATION, JUNE-2026
(BRT404) EXTERNAL BEAM RADIOTHERAPY TECHNIQUES-II

[Time allotted: Three Hours]**[Max Marks: 100]****Note:** Read all the instructions carefully

Answer all questions in serial order. Draw suitable diagrams wherever necessary

Q. 1. Objective type questions: (Attempt All)**(10 x 02 = 20)**

(Very short/ short answer/ MCQ/ One liners/ Fill in the blanks/ True/False)

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| <p>a. Lateral edge effect is more in</p> <p style="margin-left: 20px;">i. 4 MV
ii. 6 MV
iii. 10 MV
iv. 15 MV</p> <p>b. Depth of dose maximum of 4 MV beam is: (CO 5)</p> <p style="margin-left: 20px;">i. 1 cm
ii. 0.5 cm
iii. 1.3 cm
iv. 2.4 cm</p> <p>c. TSD in LINAC is: (CO 3)</p> <p style="margin-left: 20px;">i. 80 cm
ii. 90 cm
iii. 100 cm
iv. 110 cm</p> <p>d. Most penetrating radiation beam is: (CO 3)</p> <p style="margin-left: 20px;">i. 4MV
ii. 6MV
iii. 10MV
iv. 15 MV</p> <p>e. Number of linear motions of treatment couch:(CO 6)</p> <p style="margin-left: 20px;">i. 6
ii. 3
iii. 4
iv. 2</p> | <p>f. Number of fractions is less in (CO 1)</p> <p style="margin-left: 20px;">i. Hyper fractionation
ii. Hypo fractionation
iii. Both i & ii
iv. None of these</p> <p>g. Number of setup field required for pretreatment verification: (CO 6)</p> <p style="margin-left: 20px;">i. 1
ii. 2
iii. 3
iv. 4</p> <p>h. Vacuum bag is: (CO 4)</p> <p style="margin-left: 20px;">i. Beam modifying device
ii. Immobilization device
iii. Both i & ii
iv. None of these</p> <p>i. Radiation tolerance dose of lens is: (CO 2)</p> <p style="margin-left: 20px;">i. 20Gy
ii. 7Gy
iii. 15 Gy
iv. None of these</p> <p>j. Potential side effect of EBRT is: (CO 7)</p> <p style="margin-left: 20px;">i. Hair loss
ii. Increase appetite
iii. Decreased blood clotting
iv. None of these</p> |
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Q. 2. Short notes/ Short answer type questions (Attempt any Five)**(05 x 04 = 20)**

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| <p>a. Rotational motions of treatment couch?</p> <p>b. User origin in treatment planning?</p> <p>c. Online treatment verification?</p> <p>d. Buildup region?</p> <p>e. Custom shielding block</p> <p>f. Single field technique?</p> <p>g. GTV and CTV?</p> | <p>(CO6 PO1)</p> <p>(CO3 PO3)</p> <p>(CO6 PO4)</p> <p>(CO3 PO1)</p> <p>(CO4 PO5)</p> <p>(CO1 PO2)</p> <p>(CO2 PO5)</p> |
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Q. 3. Structured questions (Attempt any Three)**(03 x 10 = 30)**

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| <p>a. Explain grades of oral mucositis?</p> <p>b. What is SAD treatment setup?</p> <p>c. Box field technique?</p> <p>d. Explain lateral edge effect?</p> | <p>(CO7 PO3)</p> <p>(CO6 PO2)</p> <p>(CO1 PO1)</p> <p>(CO3 PO5)</p> |
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Q. 4. Long Answer/ Essay type questions (Attempt any Two)**(02 x 15 = 30)**

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| <p>a. Explain acute and late side effects of radiation?</p> <p>b. Explain classification of wedge filters?</p> <p>c. What is TMR and how it is used in monitor unit calculation?</p> | <p>(CO7 PO3)</p> <p>(CO4 PO1)</p> <p>(CO5 PO5)</p> |
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