

**B. Sc. MEDICAL TECHNOLOGY (RADIOTHERAPY) (BRT)  
SEMESTER -IV EXAMINATION, JUNE-2026**

**(BRT401) SIMULATION AND MOULD ROOM 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><b>a.</b> Total number of LASERs used for patient positioning (CO3)</p> <p>i. 3</p> <p>ii. 4</p> <p>iii. 5</p> <p>iv. 6</p> <p><b>b.</b> Percentage of cadmium in Cerrobend is: (CO2)</p> <p>i. 26.7%</p> <p>ii. 20%</p> <p>iii. 50%</p> <p>iv. 10%</p> <p><b>c.</b> Oncology information system is: (CO1)</p> <p>i. ARIA</p> <p>ii. Linux</p> <p>iii. macOS</p> <p>iv. None of these</p> <p><b>d.</b> GTV is: (CO3)</p> <p>i. Gross Tumor Volume</p> <p>ii. Gross Target Volume</p> <p>iii. General Tumor Volume</p> <p>iv. Genetic Target Volume</p> <p><b>e.</b> ..... HVL is used in shielding block. (CO2)</p> <p>i. 2</p> <p>ii. 5</p> <p>iii. 4</p> <p>iv. 6</p> | <p><b>f.</b> Thermoplastic cast is used in: (CO2)</p> <p>i. EBRT</p> <p>ii. Brachytherapy</p> <p>iii. Both i &amp; ii</p> <p>iv. None of these</p> <p><b>g.</b> RGSC is used for: (CO3)</p> <p>i. 4DCT</p> <p>ii. 3DCT</p> <p>iii. Both i &amp; ii</p> <p>iv. None of these</p> <p><b>h.</b> The required temperature of water-bath is: (CO2)</p> <p>i. 30 °C</p> <p>ii. 50 °C</p> <p>iii. 70 °C</p> <p>iv. 10 °C</p> <p><b>i.</b> Normal field of view (FOV) in CT simulators is: (CO1)</p> <p>i. 50 cm</p> <p>ii. 60 cm</p> <p>iii. 40 cm</p> <p>iv. 70 cm</p> <p><b>j.</b> Mouth bite is used for..... (CO3)</p> <p>i. Tooth</p> <p>ii. Tongue</p> <p>iii. Cheek</p> <p>iv. Lips</p> |
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**Q. 2. Short notes/ Short answer type questions (Attempt any Five)**

**(05 x 04 = 20)**

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|--------------------------------------------------|-----------|
| <b>a.</b> Use of contrast agent in CT simulation | (CO1 PO1) |
| <b>b.</b> Use of wax bolus in simulation         | (CO1 PO3) |
| <b>c.</b> AIO in Simulation                      | (CO2 PO5) |
| <b>d.</b> Fiducial Markers                       | (CO3 PO1) |
| <b>e.</b> Shielding block                        | (CO2 PO2) |
| <b>f.</b> Breast Board and various angles        | (CO2 PO3) |
| <b>g.</b> Virtual Simulation in radiotherapy     | (CO3 PO4) |

**Q. 3. Structured questions (Attempt any Three)**

**(03 x 10 = 30)**

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|-------------------------------------------------------------------|-----------|
| <b>a.</b> Process of electron cutout molding.                     | (CO3 PO5) |
| <b>b.</b> Role of immobilization in patient treatment.            | (CO2 PO2) |
| <b>c.</b> Write the procedure of mould preparation in Simulation. | (CO3 PO3) |
| <b>d.</b> Record and verification system on oncology.             | (CO2 PO4) |

**Q. 4. Long Answer/ Essay type questions (Attempt any Two)**

**(02 x 15 = 30)**

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|-----------------------------------------------------------------------------------------------|-------------|
| <b>a.</b> Explain different beam modifying devices used in radiotherapy.                      | (CO3 PO1)   |
| <b>b.</b> What is difference between conventional simulator and CT simulator in radiotherapy? | (CO1 PO5)   |
| <b>c.</b> Explain simulation process of carcinoma head and neck patient.                      | (CO2,4 PO4) |