1. Machine to be used for TBI: ___________ Photon Energy: ____________ MV

2. Complete either 2a or 2b:
   2a. For standard calibration of this accelerator, 1 MU = ________ cGy
       - to water or  - ICRU muscle,
       - At ________ cm distance from the nominal source (distance = SSD + depth),
       - At ________ cm depth in water,
       - With ________ cm x ________ cm field, defined at ________ cm distance from the nominal source.

   2b. For standard calibration of this Co-60 unit, the dose rate was ________ cGy/ min on ______ (date)
       - to water or  - ICRU muscle,
       - At ________ cm distance from the nominal source (distance = SSD + depth),
       - At ________ cm depth in water,
       - With ________ cm x ________ cm field, defined at ________ cm distance from the nominal source.

3. Patient position for treatment:
   - Supine
   - Decubitus
   - Standing
   - Sitting
   - Other; please describe: _____________________________

4. Field Arrangement for TBI:
   - Opposed Lateral Fields
   - Anterior / Posterior Fields
   - Combination of lateral & AP fields   % dose to prescription point from AP _______
   - Other; please describe: _____________________________

5. TBI treatments are at an extended distance of _______ cm.

6. The dose rate at the prescription point is _______ cGy/min.

7. How do you know the exact dose rate at the extended distance used for TBI?
   - By a special calibration
   - By other means; please describe: ____________________________________________

8. Do you account for dose variations due to body thickness differences?  □ Yes  □ No
   If yes, are these dose differences □ calculated or □ measured
   and is compensation done  by □ addition of material next to patient
   □ attaching compensators to the treatment apparatus

9. Mid-plane doses are calculated using
   - TPRs
   - TMRs
   - PDDs
   - Other; please describe: ____________
10. Adequate skin (surface) dose is obtained by
   ☐ Bolus on patient
     Material: _____________
     Thickness: ________cm
   ☐ Beam spoiler
     Material: _____________
     Thickness: ________cm
   ☐ Other; please describe: ____________________________________

11. Correct positioning of lung blocks is verified by: ________________________________

12. Correct positioning of lung blocks is verified
   ☐ Before each fraction
   ☐ Before first treatment only
   ☐ Other; please describe: ____________________________________

13. Measurement of doses for individual patients is routinely performed: yes   no
    If yes, for which sites:
    ☐ Prescription point
    ☐ Lung
    ☐ Neck
    ☐ Other (list) ______________________________________________
    If yes, the dosimeter used is:
    ☐ Diode
    ☐ TLD
    ☐ Ion chamber
    ☐ Other please describe: ____________________________________

14. Calculate and return the sample treatment case described on page 3. Choose the machine and technique that represents how you will treat protocol patients. Be sure to include all calculation forms, with symbols and quantities clearly described, as well as the summary form.

On separate sheets:

15. Briefly describe the total-body treatment technique used in your department.

16. Give the formula you use to calculate the monitor setting for your accelerator (time for Co-60 unit) to give the prescribed dose per fraction to the prescription point. Explain the symbols and quantities!

17. Describe your method to determine the dose to the lungs. Describe how you design the thickness and shape of lung attenuators and verify their placement.

18. Briefly describe phantom measurements that have been performed to confirm your dosimetry.

Please return: a) Completed questionnaire
               b) Sample case (page 3) with all forms completed and calculations included
               c) Description of your TBI treatment technique (see item 15)
               d) Formula used (with all symbols explained) for calculating the monitor units (see item 16)
               e) Description of dose calculation off-axis (see items 16 & 17)
               f) Description of your method to account for lung density (see item 17)
               g) Description of phantom measurements you have performed (see item 18)

   to: QARC
       Suite 201
       640 George Washington Highway
       Lincoln, RI 02865-4207
       Phone: 401 753-7600    Fax: 401 753-7601
       E-mail: Physics@QARC.org
1. Calculate the monitor units (or irradiation time, for Co-60) needed to deliver 150 cGy to the prescription point (mid-thickness at the umbilicus) for the following case of Total-Body Irradiation, using your department's methods and forms.

2. Calculate the dose per fraction to the mid-mediastinum, the right mid-lung, and the mid-neck.

<table>
<thead>
<tr>
<th>Separations</th>
<th>AP-PA</th>
<th>LATERAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescription point (Umbilicus)</td>
<td>16 cm</td>
<td>25 cm</td>
</tr>
<tr>
<td>Mid-Mediastinum</td>
<td>18 cm</td>
<td>30 cm</td>
</tr>
<tr>
<td>R Mid-Lung (Density=0.25)</td>
<td>18 cm (12 of 18 cm is lung tissue)</td>
<td>30 cm (24 of 30 cm is lung tissue)</td>
</tr>
<tr>
<td>Neck</td>
<td>8 cm</td>
<td>10 cm</td>
</tr>
</tbody>
</table>

Monitor units (time for Co-60): Field 1: ____________  Field 2: ____________

Doses:
A. Umbilicus (mid): ____________ cGy
B. Neck (mid): ____________ cGy
C. Mediastinum (mid): ____________ cGy
   Not corrected for lung density: ____________ cGy
   Corrected for lung density: ____________ cGy
D. Right Lung (mid): ____________ cGy