1. The most conformal proton therapy techniques is:
   a. Double scattering
   b. Wobbled beams
   c. Continuous scanned beams
   d. IMPT
   e. Single scattering

   Answer:

   d. IMPT

ICRU 78, Prescribing, Recording and reporting Proton- Beam Therapy, pg. 96, Journal of the ICRU vol.7 No2 2007, Oxford University Press.

2. In proton therapy the skin dose:

   a. Increases comparative to megavoltage photon therapy
   b. Is about the same like in IMRT
   c. Decreases comparative to megavoltage photon therapy
   d. Is not different from photon therapy
   e. Is negligible

   Answer:

   a. Increases comparative to megavoltage photon therapy

ICRU 78, Prescribing, Recording and reporting Proton- Beam Therapy, pg 12, Journal of the ICRU vol.7 No2 2007, Oxford University Press .

3. The PTV in proton therapy is dependent on beam orientation due to:

a. The lateral penumbra of the beam
b. The patient anatomy
c. The range uncertainty
d. The isocentricity of the proton machine
e. The differences in directional target motion

   b. Range uncertainty

ICRU 78, Prescribing, Recording and reporting Proton- Beam Therapy, pg. 86, Journal of the ICRU vol.7 No2 2007, Oxford University Press.

4. The most straightforward approach to reduce the interplay effects in scanned beam therapy for a target moving in a heterogeneous media is:

a. The use of an adequate PTV
b. Dose repainting
c. The use of PRVs
d. To calculate the uncertainties
e. To use multiple beam orientations

Answer:

b. Dose repainting

ICRU 78, Prescribing, Recording and reporting Proton- Beam Therapy, pg. 9, Journal of the ICRU vol.7 No2 2007, Oxford University Press.

5. Measured lateral penumbra of a 200MeV proton beam compared to a 8 MV photon beam is :

a. narrower independent of depth
b. not always narrower
c. wider at any depth
d. identical
e. negligible

Answer:
b. not always narrower

ICRU 78, Prescribing, Recording and reporting Proton- Beam Therapy, pg. 15, Journal of the ICRU vol.7 No2 2007, Oxford University Press.