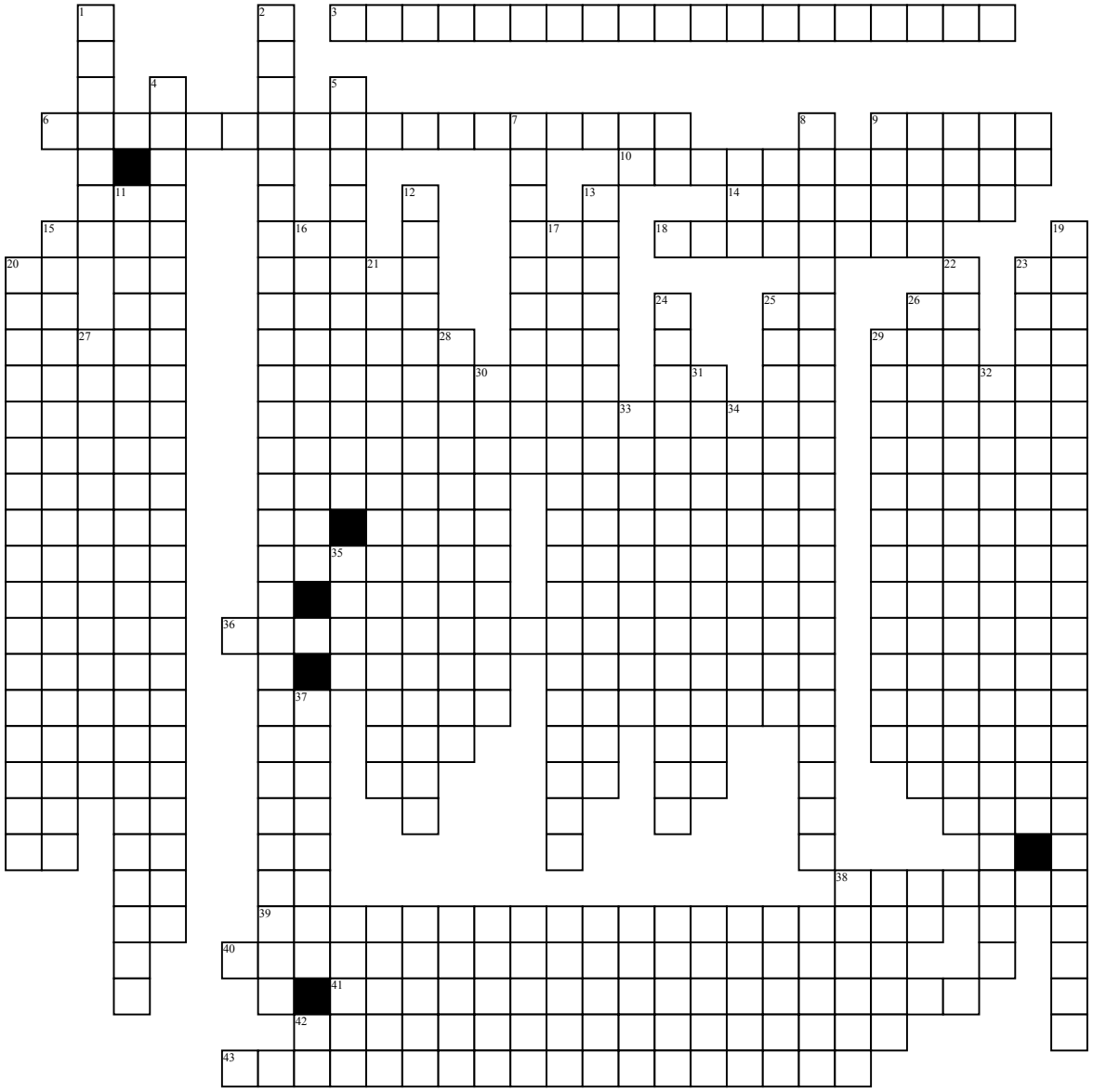
Prescription and Dose Calculations



Across

3. Ratio of the absorbed dose at a given depth to the absorbed dose at a fixed reference depth, usually Dmax

6. Equivalent rectangular field dimensions of the open or treated area within the collimator field dimensions. AKA Blocked field size

9. Variable thickness attenuator

10. Unit of output measure for linear accelerators

14. The amount of radiation exposure produced by a treatment machine or source as specified at a reference field size and at a specified reference distance

18. Maximum point-to-point difference in the central 80% of the profile

36. Process of identifying structures, target volumes or normal tissues, by creating contours around them

38. Assesses normal tissue responses to ionizing radiation based on modern dose distributions calculations, quantitative analyses of normal tissue effects in the clinic

39. Combine both the depth dose and off-axis profile characteristics of the beam

40. Plot of target or normal structure volume as a function of dose

41. Distance from the source of radiation to the axis of rotation of the treatment unit

42. Ratio of the dose rate with a scattering medium (water or phantom) to the dose rate at the same point without a scattering medium (air)

43. Ratio of the absorbed dose at a given depth in phantom to the absorbed dose at the same point at a reference depth in phantom

Down

1. Describes radiation intensity as a function of position across the beam at a given depth

2. Legal document written by radiation oncologist that defines treatment volume, intended tumor dose, number of treatments, dose per treatment, and frequency of treatment

4. Corrections that account for the presence of irradiated media other than water

5. Visualization perspective that is “end-on” or positioned as if looking at a volume from the source of radiation

7. Defined area of accumulated dose deposited in tissue that represents uniform, homogeneous dose distribution

8. Grid of points at which dose is computed and subsequently displayed

11. Two treatment fields share common central axes, 180 degrees apart

12. Distance from the source of radiation to the patient’s skin

13. The process by which dose delivery is optimized for a given patient and clinical situation

15. Ratio of the absorbed dose at a given depth in phantom to the absorbed dose at the same point at the level of Dmax in phantom

16. The angle between the slanted Isodose line and a line perpendicular to the central axis of the beam

17. Corrections for beam incidence onto surfaces other than flat surfaces and for angles of incidence other than 90 degrees. (AKA obliquity corrections)

19. Beam of radiation gives up energy as it travels through the body. The more tissue the beam traverses, the more it is attenuated (absorbed)

20. Special representations of the magnitude of the dose produced by a source of radiation

21. Process of entering dose altering parameters and beam modifiers into the treatment plan by the planner

22. Square field that has the same percentage depth dose and output of a rectangular field

23. The culmination of the radiation treatment planning process that offers the best beam arrangements and beam energies to produce the planned and intended treatment

24. Treatment planning in which the clinical objectives are specified mathematically and computer software is used to determine the best beam parameters that will lead to the desired dose distribution

25. Energy absorbed per unit mass of any material (cGy or rad)

26. Ratio of the absorbed dose at a given depth in phantom to the absorbed dose at the same point in space

27. Point inside the area to be treated that is chosen to receive 100% of the dose. (_____point)

28. Use of a moving collimator jaw to produce a wedged Isodose distribution

29. Ratio of the dose rate of a given field size to the dose rate of the reference field size. Allows for the change in scatter as the collimator setting changes.

30. Measure of the angle between central rays of two intersecting treatment beams

31. Normal tissues (critical structures) in which sensitivity to radiation damage may influence treatment planning and/or the delivery of a prescribed dose of radiation

32. Backscatter factor sometimes normalized to a reference field size, usually 10 x 10cm for energies of 4 MV and above

33. Point of intersection of the three aces of rotation of the treatment unit

34. Dimensions of a treatment field at the isocenter (length and width)

35. Depth at which electronic equilibrium occurs for photon beams

37. Degree of evenness of dose across a beam profile