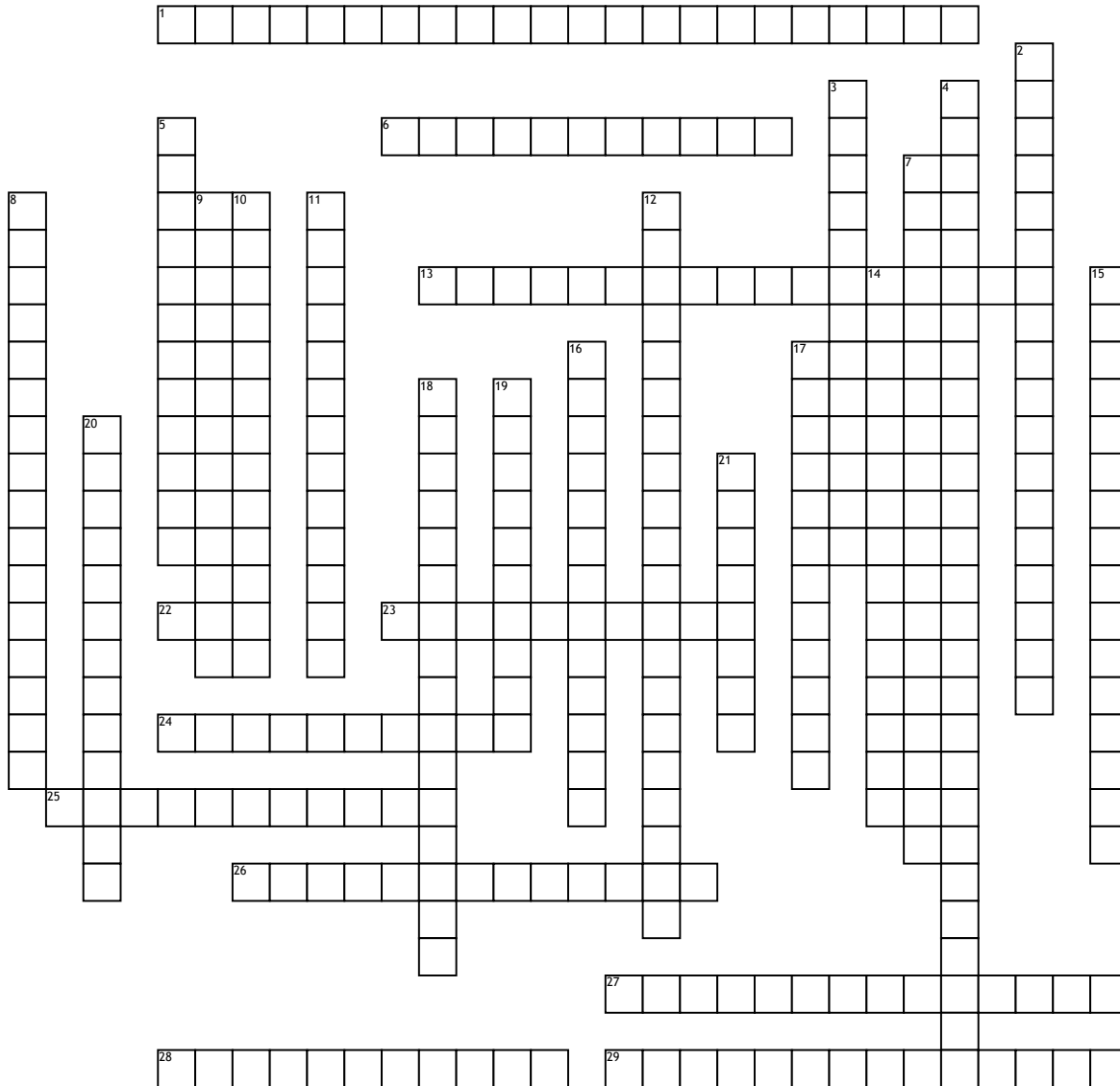# Chapter 8 Image Production

Across

1. the difference between the x-ray photons that are absorbed photoelectrically versus those that penetrate the body

6. the invisible image that exists on the image receptor before it has been processed

13. the ejected electron resulting from the compton effect interaction

22. unwanted exposure on the radiographic image that does not provide any diagnostic information

23. incoming photons are not absorbed, but instead lose energy during interactions with the atoms composing the tissue

24. x-ray photons removed from the x-ray beam as a result of the uptake of their energy by body tissues

25. reduction in the energy or number of photons in the primary x-ray beam after it interacts with anatomic tissue

26. the attenuated x-ray beam leaves the patient and is composed of both transmitted and scattered radiation

27. a layer in the image intensifier that absorbs the electron stream and emits light in response

28. the use of a continuous beam of x-rays to create dynamic images of internal structures that can be viewed on a display monitor

29. an expression of the ability of an image intensifier tuber to convert x-ray energy into light energy and increase the brightness of the image

Down

2. interaction that occurs with low energy x-rays. the incoming photon interacts with the atom, causing it to become excited. the x-ray does not lose energy, but changes direction

3. the electron ejected from an atom during a photoelectric interaction

4. negatively charged plates along the length of the image-intensifier tube that repel the electron stream, focusing it on the small output phosphor

5. x-ray photons that pass through the body to expose the image receptor

7. the total absorption of the incident photon by ejecting and inner shell electron

8. an expression of the luminance at the output phosphor divided by the input exposure rate

9. a layer of the image intensifier made of cesium iodide and bonded to the curved surface of the tube itself. absorbs remnant x-ray photon energy and emits light in response

10. the visible radiographic image on the exposed film after processing

11. scattering that results from the loss of some energy of the incoming photon when it ejects an outer-shell electron from a tissue atom

12. during fluoroscopy, the process of creating a brighter visible image

14. the electron ejected from an atom during a scattering event

15. the attenuated x-ray beam leaving the patient that is composed of both transmitted and scattered radiation

16. matter per unit volume, or the compactness of the atomic particles composing the anatomic part

17. a layer of the image intensifier made of cesium and antimony compounds. these metals emit electrons in response to light stimulus

18. an expression of the degree to which the image is minified from input phosphor to output phosphor

19. the removal of an electron from an atom

20. a device that receives the radiation leaving the patient

21. an expression of the ratio of the number of light photons at the output phosphor to the number of light photons emitted in the input phosphor