

Chapter 01: Introduction to Radiography
Ehrlich: Patient Care in Radiography: With an Introduction to Medical Imaging, 10th Edition

MULTIPLE CHOICE

1. X-rays were discovered in 1895 by
- Coolidge.
 - Crookes.
 - Roentgen.
 - Edison.

ANS: C REF: p. 2 OBJ: 1

2. Of the following types of electromagnetic energy, which has the shortest wavelength?
- Radio waves
 - X-rays
 - Visible light
 - Ultraviolet light

ANS: B REF: p. 7 OBJ: 7

3. Which of the following is *not* an accurate statement regarding the characteristics of x-rays?
- They can penetrate matter that is impenetrable to light.
 - They cause certain crystals to fluoresce.
 - They can be refracted by a lens.
 - They cannot be detected by the human senses.

ANS: C REF: p. 7 | p. 8 OBJ: 8

4. An electron cloud surrounding a hot cathode is referred to as a(n)
- focusing cup.
 - ampere.
 - space charge.
 - filament.

ANS: C REF: p. 6 OBJ: 6

5. The purpose of rotating the x-ray tube target is to
- create a space charge.
 - remove long-wavelength photons from the x-ray beam.
 - focus the electron stream on a small target area.
 - increase the heat capacity of the anode.

ANS: D REF: p. 9 OBJ: 6

6. An imaginary photon that is emitted from the center of the focal spot, perpendicular to the long axis of the x-ray tube, is called the
- electron stream.
 - x-ray beam.
 - central ray.

13. Which formula represents the relationship between the wavelength, frequency, and velocity of an electromagnetic wave?
- a. $f = \lambda \times v$
 - b. $V = \lambda \times f$
 - c. $\lambda = f \div v$
 - d. $f = \lambda \div v$

ANS: B REF: p. 6 OBJ: 9

14. Which of the following substances is most readily penetrated by x-rays?
- a. Water
 - b. Air
 - c. Bone
 - d. Fat

ANS: B REF: p. 7 OBJ: 8

15. Grids or buckys are generally used for body parts that measure greater than
- a. 2 to 4 cm.
 - b. 10 to 12 cm.
 - c. 18 to 20 cm.
 - d. 30 cm.

ANS: B REF: p. 15 OBJ: 11

16. The access point for the radiographer to determine the exposure factors and to initiate the exposure is called the
- a. transformer.
 - b. image receptor unit.
 - c. control console.
 - d. stationary grid.

ANS: C REF: p. 16 OBJ: 11

17. An x-ray machine designed for direct viewing of the x-ray image is called a(n)
- a. image receptor.
 - b. transformer.
 - c. control console.
 - d. fluoroscope.

ANS: D REF: p. 17 OBJ: 11

18. A device located between the x-ray tube and the control panel that increases the voltage delivered from the power company is called a
- a. collimator.
 - b. transformer.
 - c. control console.
 - d. fluoroscope.

ANS: B REF: p. 16 OBJ: 11

19. The anode or positive end of the x-ray tube is the end that contains the

