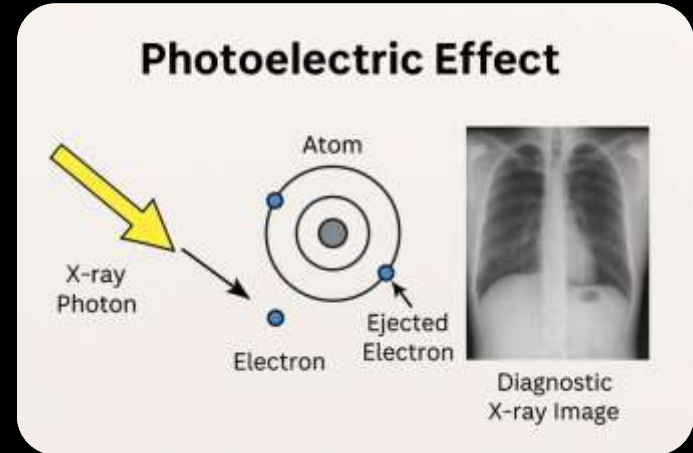


Red tech official for radiographer

***10 MCQS :- INTRODUCTION
ON RADIOGRAPHIC IMAGING
&
X-RAY PHYSICS***

1. Which interaction is primarily responsible for image formation in diagnostic radiography?

- A. Compton scattering
- B. Coherent scattering
- C. Photoelectric effect
- D. Pair production



Correct answer: C. Photoelectric effect

2. What is the most significant factor affecting radiographic contrast in a diagnostic x-ray image?

- A. Focal spot size
- B. Beam filtration
- C. Photoelectric absorption
- D. Inverse square law

Correct answer: : C. Photoelectric absorption

3. In the x-ray tube, which component acts as the source of electrons?

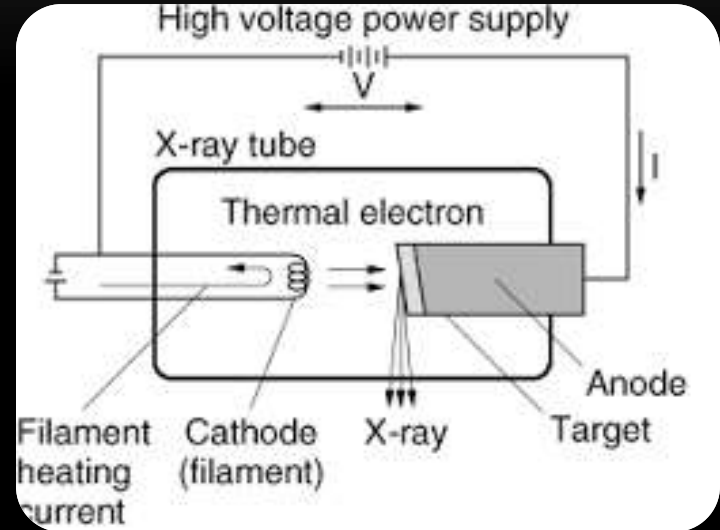
A. Focusing cup

B. Target

C. Filament

D. Glass envelope

Correct answer: C. Filament



4. Which of the following best describes Bremsstrahlung radiation?

- A. Emission of an x-ray when an inner shell electron is ejected
- B. Scattering of x-ray by outer shell electrons
- C. Radiation produced when high-speed electrons decelerate near the nucleus
- D. Energy loss due to heat transfer in the anode

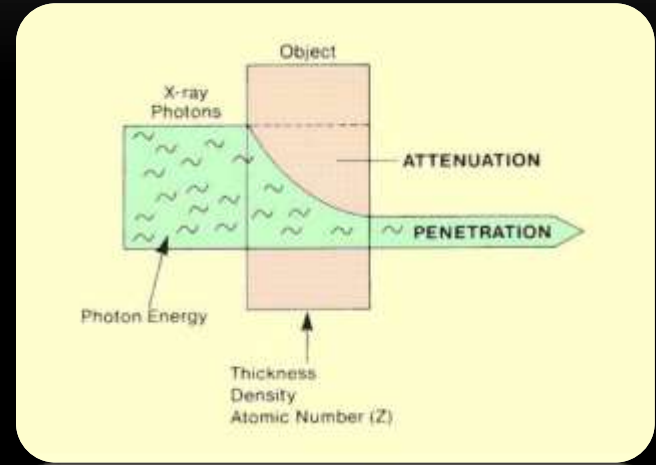
Correct answer: C. Radiation produced when high-speed electrons decelerate near the nucleus

5. Which energy conversion occurs predominantly during x-ray production in the tube?
- A. 99% light, 1% x-rays
 - B. 99% x-rays, 1% heat
 - C. 99% heat, 1% x-rays
 - D. 50% heat, 50% x-rays

Correct answer: C. 99% heat, 1% x-rays

6. Which of the following increases as kVp increases in an x-ray exposure?

- A. Image contrast
- B. Patient dose
- C. Photoelectric interaction
- D. Penetrability of the x-ray beam



Correct answer: D. Penetrability of the x-ray beam

7. What is the role of the focusing cup in an x-ray tube?

A. Absorbs scatter radiation

B. Filters out low-energy x-rays

C. Directs the electron beam toward the anode

D. Produces characteristic radiation

Correct answer: C. Directs the electron beam toward the anode

8. Which factor does not directly affect the quantity of x-rays produced?

- A. Tube current (mA)
- B. Exposure time (s)
- C. Kilovoltage peak (kVp)
- D. Focal spot size

Correct answer: D. Focal spot size

9. What is the primary function of added filtration in the x-ray beam?

- A. To improve spatial resolution
- B. To remove high-energy x-rays
- C. To reduce patient dose
- D. To increase contrast

Correct answer: C. To reduce patient dose

10. Which interaction dominates at higher photon energies (above 70 keV) and leads to scattered radiation that reduces image quality?

- A. Photoelectric effect
- B. Compton scatter
- C. Coherent scatter
- D. Pair production

Correct answer: B. Compton scatter