

Producing an Exposure Practice Test

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- ___ 1. Which of the following is equivalent to 0.25 seconds?
- 250 milliseconds
 - 25 milliseconds
 - 2.5 milliseconds
 - 0.025 milliseconds
- ___ 2. What is the mAs when 400 mA is used with a 50-millisecond exposure time?
- 20
 - 200
 - 2
 - 2000
- ___ 3. An x-ray exposure is made using the following factors: 300 mA, 0.02 sec, 60 kVp, 60-inch SID, and the large focal spot. In this case, the value of the mAs is:
- 0.06.
 - 0.6.
 - 6.
 - 60.
- ___ 4. A satisfactory radiograph is made using 100 mA, 0.2 sec, 80 kVp, and 40-inch SID. How much exposure time is required to produce a similar radiograph when using 400 mA?
- 0.05 sec
 - 0.08 sec
 - 0.1 sec
 - 0.4 sec
- ___ 5. A good reason for sometimes selecting the highest available mA station to obtain a given amount of mAs is to:
- keep the exposure time as short as possible.
 - use the small focal spot.
 - prevent excessive anode heat.
 - accommodate breathing technique.
- ___ 6. A good reason for selecting a low mA station to obtain a given amount of mAs is to:
- reduce motion blur.
 - use the small focal spot.
 - obtain optimum kilovoltage.
 - maintain the SID at 40 inches.
- ___ 7. What is the correct exposure time required to produce 50 mAs when using the 200 mA station?
- 0.25 second
 - 4 seconds
 - 2.5 seconds

- d. 0.4 second
- ___ 8. In terms of the x-ray tube, *envelope* is another name for the
 - a. anode
 - b. cathode
 - c. glass or metal enclosure
 - d. induction motor
- ___ 9. The positive end of the x-ray tube is the
 - a. anode
 - b. cathode
 - c. filament
 - d. envelope
- ___ 10. The negative end of the x-ray tube is the
 - a. anode
 - b. cathode
 - c. target
 - d. envelope
- ___ 11. The anode includes the
 - a. target
 - b. induction motor
 - c. envelope
 - d. A and B
 - e. B and C
- ___ 12. The cathode includes the
 - a. envelope
 - b. filaments
 - c. focusing cup
 - d. A and B
 - e. B and C
- ___ 13. The primary purpose of the glass or metal enclosure is to
 - a. insulate against electrical shock
 - b. maintain a vacuum within the tube
 - c. allow the heat to dissipate
 - d. none of the above
- ___ 14. The area of the envelope where x-rays should exit the tube is the
 - a. target door
 - b. target window
 - c. x-ray trap
 - d. x-ray gate
- ___ 15. The two types of anode designs are stationary and
 - a. traveling
 - b. rotating

- c. dynamic
- d. all of the above

- ___ 16. The primary disadvantage to the stationary anode is that it
- a. is too expensive
 - b. heats up too quickly during x-ray production
 - c. uses tungsten
 - d. all of the above
- ___ 17. With a rotating anode, the focal spot becomes a focal
- a. path
 - b. stripe
 - c. track
 - d. circle
- ___ 18. The primary advantage of a rotating anode is that it allows
- a. greater heat capacity at the anode
 - b. less heat capacity at the anode
 - c. greater heat capacity at the cathode
 - d. less heat capacity at the cathode
- ___ 19. The advantage to using a larger actual focal spot is
- a. the image is sharper
 - b. there is less wear and tear on the tube
 - c. the image is less sharp
 - d. higher exposures can be used
- ___ 20. The advantage to using a small effective focal spot is
- a. the image is sharper
 - b. the image is less sharp
 - c. less exposure can be used
 - d. it is safer for the patient

Producing an Exposure Practice Test Answer Section

MULTIPLE CHOICE

1. ANS: A PTS: 1 REF: Page 30
2. ANS: A PTS: 1 REF: Page 33
3. ANS: C PTS: 1 REF: Page 34
4. ANS: A PTS: 1 REF: Page 35
5. ANS: A PTS: 1 REF: Page 126
6. ANS: B PTS: 1 REF: Page 126
7. ANS: A PTS: 1 REF: Page 126
8. ANS: C
Envelope is another name for the metal or glass enclosure that contains the anode and cathode.

PTS: 1 REF: 51 OBJ: 2
9. ANS: A
The anode is the positive end of the x-ray tube.

PTS: 1 REF: 51-52 OBJ: 2
10. ANS: B
The cathode is the negative end of the x-ray tube.

PTS: 1 REF: 52 OBJ: 2
11. ANS: D
The anode includes both the target and the induction motor.

PTS: 1 REF: 52 OBJ: 2
12. ANS: E
The cathode includes both the filaments and the focusing cup.

PTS: 1 REF: 52 OBJ: 2
13. ANS: B
The main purpose of the enclosure is to maintain a vacuum in the tube.

PTS: 1 REF: 52 OBJ: 2
14. ANS: B
The target window is the area of the glass or metal envelope where x-rays are intended to leave the tube.

PTS: 1 REF: 52 OBJ: 2
15. ANS: B
Anode designs include stationary and rotating.

PTS: 1 REF: 52 OBJ: 4
16. ANS: B
Because it does move, heat builds up very quickly with a stationary anode.

- PTS: 1 REF: 52 OBJ: 4
17. ANS: C
Because the target is constantly moving during the exposure, the focal spot becomes a focal track.
- PTS: 1 REF: 53 OBJ: 4
18. ANS: A
By having a focal track, the rotating anode allows greater heat capacity at the anode, allowing larger x-ray exposures.
- PTS: 1 REF: 53 OBJ: 4
19. ANS: D
A large actual focal spot spreads out the heat that is produced over a larger area, allowing greater x-ray exposures.
- PTS: 1 REF: 53 OBJ: 5
20. ANS: A
A small effective focal spot results in a sharper image.
- PTS: 1 REF: 53 OBJ: 5