



Equipment Operation & Quality Control

Name the three main components of an atom.

1. _____
2. _____
3. _____

4. The atomic number is the _____.

Name the six forms of energy:

5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Indicate what type of wavelength that the following frequency will have (shorter or longer):

11. low frequency: _____
12. high frequency: _____

_____ 13. **True or False:** The amplitude of a particular sine wave is half the distance between the crest and valley of that sine wave.

14. Define thermionic emission:

Name the four things needed for x-ray production:

15. _____
16. _____
17. _____
18. _____

Indicate which side of the tube the following are located. anode or cathode?

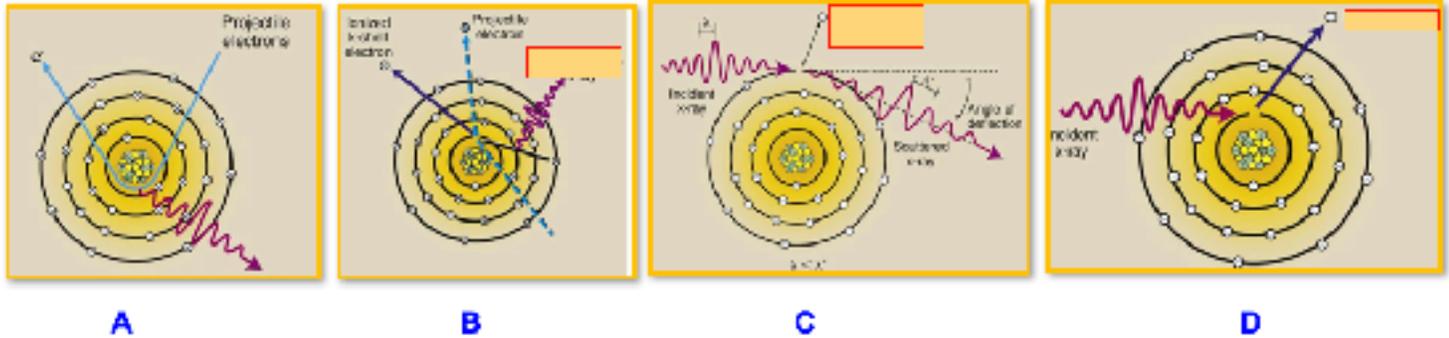
19. focusing cup _____
20. target: _____
21. filament: _____
22. heel effect: _____

23. What parameter controls the amount of current to the filament? _____

24. What parameter controls the impact rate of the electrons to the target? _____



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Refer to the diagram above for the following questions:

- 25. _____ What diagram represents the photoelectric effect?
- 26. _____ What diagram represents bremsstrahlung radiation?
- 27. _____ What diagram represents the Compton scatter effect?
- 28. _____ What diagram represents the characteristic radiation?
- 29. What controls the quality of the x-ray beam? _____
- 30. What controls the quantity of the x-ray beam? _____
- 31. Define remnant radiation. _____
- 32. Define SID. _____
- 33. Define primary beam. _____

List the characteristics of x-rays:

- 34. _____
- 35. _____
- 36. _____
- 37. _____
- 38. _____
- 39. _____
- 40. _____
- 41. _____
- 42. _____



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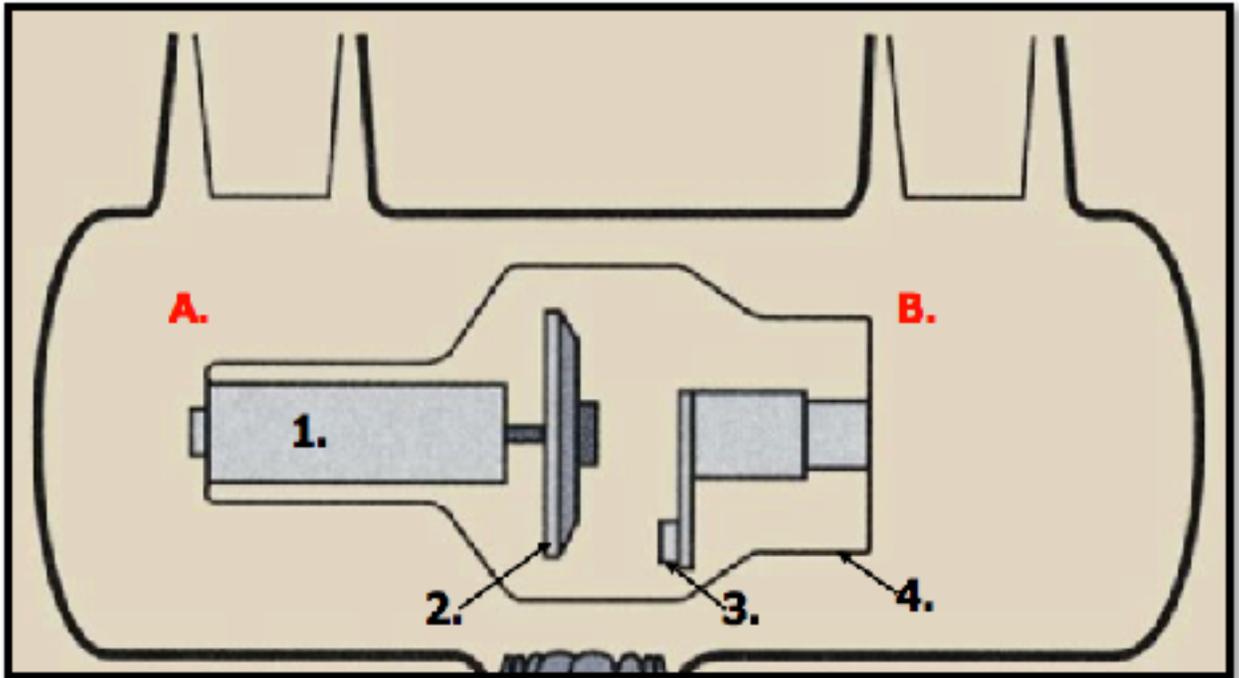
- 43. What component of an atom has a negative charge? _____
- 44. X-Rays with greater energy have a shorter _____ and are more penetrating.
- 45. What is the term that describes converting AC current to DC current? _____
- 46. X-Rays are faster or slower than visible light? _____
- 47. When an atom gains or loses an electron it is called a(n): _____
- 48. What is the purpose of a transformer? _____
- 49. Electrons are held in place around the nucleus of the atom by a(n): _____
- 50. What is the name of the element used to produce x-rays? _____

Match the following terms with their definition:

- | | |
|-------------------------------|--|
| 51. _____ alternating current | A. quality of electrons flowing in a circuit |
| 52. _____ ammeter | B. unit to measure the rate of current flow in a circuit |
| 53. _____ ampere | C. equal to 1,000 volts |
| 54. _____ current | D. equal to 0.001 A (1/1000 AA) |
| 55. _____ kilovolt (kV) | E. current changes polarity from (-) to (+) at regular intervals |
| 56. _____ millampere (mA) | F. increases or decreases voltage by a fixed amount (AC only) |
| 57. _____ rectification | G. measures electrical current |
| 58. _____ transformer | H. process of changing AC to DC |
| 59. _____ volt (V) | I. measures electrical potential |
| 60. _____ voltmeter | J. unit to measure potential difference |



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Refer to the diagram above for the following questions.

61. Which side of the tube is the positive side? _____
62. Which side of the tube is the negative side? _____
63. What is Number 1? _____
64. What is Number 2? _____
65. What is Number 3? _____
66. What is Number 4? _____
67. Which number identifies the region where you would see thermionic emission? _____
68. Which number identifies the region where you would see the anode heel effect? _____
69. Which component spins during an exposure? _____
70. What is located in the middle of Number 3? _____