



قائمة الاسئلة

(70) معدات الفيزياء الاشعاعية - ()- المستوى الثاني -قسم التصوير التشخيصي - - كلية الطب والعلوم الصحية - الفترة الخامسة- درجة الامتحان

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- 1) What causes atoms to be unstable ?
 - 1) - Lack of energy and mass
 - 2) Excess of energy or mass or both
 - 3) - Lack of protons in the nucleus
 - 4) - Excessof electrons around the nucleus
- 2) Which type of radiation consist of particles?
 - 1) - X ray
 - 2) - Infrared radiation
 - 3) Electrons
 - 4) - Ultraviolet radiation
- 3) X ray have a electrical charge
 - 1) - Positive
 - 2) - Negative
 - 3) No charge
 - 4) - Alternately positive and negative
- 4) Which process describes unstable nuclei losing energy by emitting radiation?
 - 1) - Nuclear fusion
 - 2) - Nuclear fission
 - 3) Radioactivity
 - 4) - Radionuclide
- 5) What does the atomic mass number (A) represent ?
 - 1) - The number of electrons
 - 2) The number of protons and neutrons
 - 3) - The total mass in grams
 - 4) - The number of protons only
- 6) Which is the source of electrons within the x-ray tube?
 - 1) - Anode
 - 2) Filament
 - 3) - Control panel
 - 4) - Focusing cup
- 7) Which is the purpose of a rotating anode?
 - 1) - Increase production of x-rays
 - 2) - Decrease number of electrons
 - 3) - Eliminate need for angled target
 - 4) Dissipate heat from small focal spot
- 8) Which is the purpose of collimation of the x-ray beam?
 - 1) - Direct photons
 - 2) - Intensify beam
 - 3) Reduce exposure area
 - 4) - Adjust for source-to-point distance
- 9) Which portion of the x-ray film records the radiographic image?
 - 1) - Base
 - 2) - Screen
 - 3) - Matrix
 - 4) Emulsion





- 10) What is the material used in rotating anode target?
- 1) - Aluminum
 - 2) - Copper
 - 3) Tungsten
 - 4) - Zinc
- 11) X- radiation is part of the----- spectrum
- 1) Electromagnetic
 - 2) - Magnetic
 - 3) - Particulate
 - 4) - Electric
- 12) The flow of electrons from cathod filament, across the tube to anode, and then back to the filament is called the
- 1) - Voltage
 - 2) Tube current
 - 3) - Filament current
 - 4) - Power source
- 13) In which layer of the film are the silver halide crystals found?
- 1) - Base
 - 2) - Cassette
 - 3) Emulsion
 - 4) - Anticurl layer
- 14) Which is the purpose of an intensifying screen?
- 1) - Strengthen x-ray absorption
 - 2) - Decrease image "unsharpness"
 - 3) - Create diffusion of light photons
 - 4) Convert x-ray energy into visible light
- 15) The filament circuit makes use of what type of transformer?
- 1) - Step up
 - 2) Step down
 - 3) - Autotransformer
 - 4) - Rectifier
- 16) At which component does thermionic emission occur?
- 1) Cathod
 - 2) - anode
 - 3) - Collimator
 - 4) - Filter
- 17) Which of the following is increased by an increase in x-ray tube current (mA)?
- 1) - X rays photons energy
 - 2) - Number of protons
 - 3) Number of x-rays production
 - 4) - penetrating ability of the x-ray's photons
- 18) Which form of energy does the image intensifier convert the remnant X-ray beam into?
- 1) - Electrical signals
 - 2) A visible light image
 - 3) - Electrical signal
 - 4) - Infrared radiation
- 19) Which type of signal does the thermionic television camera tube convert the visible image on the output phosphor of the image intensifier into?
- 1) An electronic signal





- 2) - light signal
3) - Infrared signal
4) - Magnetic signal
- 20) Which two methods are commonly used to couple the television camera tube to the image-intensifier tube?
1) - lens system or cables
2) - charge-coupled device (CCD) or television camera tube
3) - Input phosphor or output phosphor
4) Fiber optics or lens system
- 21) Examples of Non Ionizing radiation include all EXCEPT one. Which one is the EXCEPTION?
1) - Infrared radiation
2) - Microwave
3) X ray
4) - Near ultraviolet radiation
- 22) Which of the following is increased by an increase in x-ray tube voltage (kV)?
1) - Exposure time
2) - Patient dose only
3) X-ray beam intensity and penetration
4) - Filament heating
- 23) In CR, which type of light is used to scan the phosphor plate in the image reader?
1) - Infrared light
2) laser light
3) - Visible light
4) - Ultraviolet light
- 24) Which device is used to convert light into electrical signal in CR?
1) photomultiplier tube
2) - Laser beam reader
3) - Phosphor plate
4) - computer workstation
- 25) Which of the following devices uses x-ray-sensitive plates to directly capture data during the patient examination?
1) - CR
2) - CT Scan
3) - C arm
4) DR
- 26) Which part of the image intensifier tube converts x rays into electrons?
1) - Input phosphor
2) - output phosphor
3) Photocathode
4) - Electrostatic focusing lens
- 27) What is the best tool for early detection of breast cancer?
1) - CR
2) Mamography
3) - DR
4) - Fluoroscopy
- 28) Which is the purpose of filtration?
1) - Lessen beam intensity
2) - Decrease size of x ray beam
3) Remove low energy x ray photons
4) - Restore high energy x ray photons





- 29) Which among the following are used in Computed tomography (CT) Scan?
- 1) X ray
 - 2) Ultrasound
 - 3) Infrared waves
 - 4) Radiofrequency
- 30) Which are the primary components of an x-ray machine?
- 1) Cathode and anode
 - 2) Tube head and filters
 - 3) X-ray tube and X ray generator
 - 4) Control panel and collimator
- 31) In DR, what is used to capture and convert x rays into electronic signals?
- 1) Photostimulable phosphor plate
 - 2) Cassette with film
 - 3) Flat panel detector (FPD)
 - 4) Lead grid
- 32) Which type of radiation is commonly used in mammography imaging?
- 1) Gamma rays
 - 2) X rays
 - 3) Electrons
- 33) Which component is used to read the digital signal in both direct and indirect FDPs in DR?
- 1) Thin film transistor (TFTs)
 - 2) Bias electrode
 - 3) Selenium photodiode
 - 4) Scintillator
- 34) What is the purpose of x ray tube in CT Scan?
- 1) To generate x rays
 - 2) To receive x rays
 - 3) To rotate around the patient
 - 4) To process image data
- 35) What is the main material used in indirect flat panel detectors in DR?
- 1) Cesium iodide
 - 2) Gadolinium oxysulfide
 - 3) Amorphous selenium
 - 4) Amorphous silicon

