Examining of Computers into Imaging: Computed Radiography (CR)

Expires Tuesday, January 31, 2023

Radiology
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1. Regarding computed radiography (CR) systems, all of the following are true EXCEPT
   a. It allows for the ability to generate multiple images without additional exposures to the patient.
   b. It allows for images to be manipulated to suit image quality preferences.
   c. It allows for lower radiation doses received by the patient while maintaining image quality.
   d. It results in the image that is manifested on the film to be stored in a large envelope or jacket.
   e. It converts a conventional ionizing radiation image into digital form.

2. All of the following issues regarding conventional radiography are true EXCEPT
   a. It results in an image that is manifested on a film that is later stored in a large envelope or jacket.
   b. It allows for the ability to retrieve and clinically review on a monitor screen the images in other locations or hospital departments.
   c. Because the image production involves chemical processing, long-term storage may result in a deterioration of image quality.
   d. It requires the use of intensifying screens that emit light upon exposure to ionizing radiation and chemical processing.
   e. As it relates to film storage, loss of the film jacket can occur due to misfiling and incorrect patient information.

3. The central processing unit or (CPU) is part of the
   a. software
   b. output devices
   c. hardware
   d. Digital Imaging and Communication of Medicine (DICOM) system
   e. Random Access Memory (RAM)

4. The most common computer memory that is used by programs to perform their necessary tasks while the computer is on is
   a. Central Processing Unit or CPU memory
   b. Read-Only Memory (ROM)
   c. Random Access Memory (RAM)
   d. hardware memory
   e. Digital Imaging and Communication of Medicine (DICOM) memory

5. The output devices can include all of the following EXCEPT
   a. operating system
   b. liquid crystal displays
   c. computer disks
   d. printers
   e. optical disks

6. Regarding picture archival and communication systems (PACS), all of the following are true EXCEPT
   a. They contain a series of gateways.
   b. They consist of barium fluorohalide phosphor coated plates
   c. They contain a series of switches.
d. They communicate through Digital Imaging and Communication of Medicine (DICOM) format.
e. They contain a series of servers.

7. The hardware for CR systems have four essential components and include all of the following EXCEPT
   a. operating system
   b. computer processor
   c. laser scanner
   d. image recorder (laser printer and storage system)
   e. imaging plate

8. The imaging plate for CR systems is flexible and coated with a ______ substance.
   a. magnesium sulfate
   b. chromium citrate
   c. helium-neon
   d. silver phosphate
   e. barium fluorohalide phosphor

9. The operating system is part of the
   a. Digital Imaging and Communication of Medicine (DICOM) system
   b. Random Access Memory (RAM)
   c. hardware
   d. picture archival and communication systems
   e. software

10. A visual representation on the screen that allows the user to specify where they want text to be placed is called a
    a. cascade
    b. movable I
    c. shortcut
    d. cursor
    e. task manager device

11. A function designed to keep the desktop settings and program settings currently in use from being lost due to power failure is called
    a. toolbar manager
    b. hibernate
    c. user interface
    d. task managing
    e. explorer

12. Right clicking the mouse button will often access
    a. the task manager
    b. the next window
    c. short-cuts
    d. the toolbar
    e. pop-up menus

13. A small arrow in the bottom corner of an icon identifies it as a (an)
    a. access to the toolbar
    b. access to the taskbar
    c. shortcut
    d. pop-up menu
    e. access to the task manager
14. A row of boxes that control various functions of the software where the boxes often contain images that correspond with the function they control (such as the image of a printer, etc.) is called a
   a. task manager
   b. toolbar
   c. menu
   d. taskbar
   e. user interface

15. Regarding "imaging", the most important element(s) is (are)
   a. reduction of exposure to ionizing radiation and image quality
   b. understanding PACS and computer terminology
   c. correctly processing teleradiology
   d. proper film storage to avoid misfiling
   e. obtaining the correct read

16. Regarding imaging plates, all of the following are true EXCEPT
   a. They are designed to act or perform like conventional cassettes.
   b. The stored information is released in the form of visible light that is then multiplied and amplified.
   c. They are designed in the same standard cassette sizes and can be used in the department in stationary imaging rooms or during mobile imaging.
   d. Once they are exposed, they must be discarded.
   e. Once exposed, they are inserted into a hardware device that is designed to process the obtained data by use of a laser beam.

17. Techniques that will achieve exposure indicators within the acceptable range utilize
   a. low kVp and low mAs
   b. low kVp and high mAs
   c. only mAs
   d. high kVp and low mAs
   e. high kVp and high mAs

18. For CR systems that use "S" numbers as their exposure indicators, which of the following statements is true?
   a. Changes in the scale by +/- 300 represent a change in exposure by a factor of two.
   b. High "S" numbers represent high exposure.
   c. The center of the scale is set at 2000.
   d. It stands for "exposure index".
   e. Low "S" numbers represent excessive exposure.

19. For CR systems, the term "windowing" means
   a. utilizing a Microsoft Windows application.
   b. creating a "cascade" of windows on the monitor screen.
   c. changing the default values to where the brightness and contrast controls may be adjusted.
   d. using the active window that is on the monitor screen.
   e. utilizing the taskbar to go back and forth between active windows.

20. Regarding the default parameters in a CR system, all of the following statements are true EXCEPT
   a. Adjustments can make patently unsatisfactory images better so that repeat examination becomes unnecessary.
   b. If the parameters are adjusted, misrepresentation of tissue differentials may occur.
   c. Changes in the windowing may indicate inappropriate exposure.
   d. Every acquired image that is viewed on the screen is displayed using a pre-set default brightness and contrast level.
   e. If the parameters are adjusted, information may be permanently lost from the default data.