

## PACS Fundamentals

### Multiple Choice

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

- \_\_\_ 1. The acronym PACS stands for \_\_\_\_\_ system.
- picture archival and control
  - picture archival and communication
  - physical archive and communication
  - physical archive and compression
- \_\_\_ 2. A PACS consists of:
- image acquisition.
  - display workstation.
  - archive servers.
- 1 and 2
  - 1 and 3
  - 2 and 3
  - 1, 2, and 3
- \_\_\_ 3. A universally accepted standard for exchanging medical imaging via a networked set of display workstations, archive, and imaging modalities is:
- HIPAA.
  - DICOM.
  - HL-7.
  - all of the above.
- \_\_\_ 4. Reading images on a computer screen is known as \_\_\_\_\_ reporting.
- soft copy
  - hard copy
  - computer
  - both a and b
- \_\_\_ 5. Any computer that a health care worker uses to view a digital image is a(n):
- archive.
  - Web server.
  - image manager.
  - display workstation.
- \_\_\_ 6. The acronym RIS stands for \_\_\_\_\_ system.
- radiology integrated
  - redundant information
  - radiology information
  - reading integrated
- \_\_\_ 7. Which of the following are considered PACS architectures?
- Distributed system
  - Client/server-based system

- 3. Web-based system
  - a. 1 only
  - b. 2 only
  - c. 1 and 2
  - d. 1, 2, and 3
  
- \_\_\_ 8. Which of the following would be considered advantages of a client/server-based system?
  - 1. Any image can be seen anywhere without interventions.
  - 2. Even if the archive goes down, images can still be seen at all workstations.
  - 3. Only one person can open a study with the intent to read it, and others will be told that the study is being read by someone else.
  - a. 1 and 2
  - b. 1 and 3
  - c. 2 and 3
  - d. 1, 2, and 3
  
- \_\_\_ 9. Which of the following would be considered disadvantages of a client/server-based system?
  - 1. The archive is considered a single point of failure.
  - 2. The system depends on the network.
  - 3. Each workstation has a different worklist.
  - a. 1 only
  - b. 3 only
  - c. 1 and 2
  - d. 1 and 3
  
- \_\_\_ 10. In which system architecture do the acquisition modalities send their images directly to a designated workstation?
  - a. Client/server-based system
  - b. Distributed system
  - c. Web-based system
  - d. Image manager system
  
- \_\_\_ 11. In which system architecture do the images and application software reside on a central server?
  - a. Client/server-based system
  - b. Distributed system
  - c. Web-based system
  - d. Image manager system
  
- \_\_\_ 12. What term is used to describe the reading of images outside of the hospital walls, generally at home or in remote locations?
  - a. Teleradiology
  - b. Offsite reporting
  - c. Long-range reporting
  - d. Home-based reading
  
- \_\_\_ 13. Which is the most interactive part of a PACS?
  - a. Archive
  - b. Image manager

- c. Web server
- d. Display workstation

- \_\_\_ 14. The number of pixels contained on a display is known as:
- a. matrix.
  - b. pixel.
  - c. resolution.
  - d. dot pitch.
- \_\_\_ 15. If the number of \_\_\_\_\_ increase(s) on a monitor, resolution \_\_\_\_\_.
- a. pixels; decreases
  - b. matrices; decreases
  - c. pixels; improves
  - d. dot pitch; improves
- \_\_\_ 16. A square table of numbers that represents the intensity to be displayed on the monitor is a:
- a. matrix.
  - b. pixel.
  - c. resolution.
  - d. dot pitch.
- \_\_\_ 17. Which of the following would be considered categories for display workstations?
- 1. Primary reading
  - 2. Technologist QC
  - 3. Archive server
- a. 1 only
  - b. 1 and 2
  - c. 1 and 3
  - d. 1, 2, and 3
- \_\_\_ 18. Which workstation is used to review images after acquisition but before being sent off for reporting?
- a. Primary reading
  - b. Referring physician
  - c. Technologist QC
  - d. Image management
- \_\_\_ 19. Which of the following would be considered categories of workstation functions?
- 1. Navigation
  - 2. Image manipulation and enhancement
  - 3. Image management
- a. 1 and 2
  - b. 1 and 3
  - c. 2 and 3
  - d. 1, 2, and 3
- \_\_\_ 20. Which set of functions is used to move through images, series, studies, and patients?
- a. Navigation
  - b. Image management
  - c. Image manipulation and enhancement

- d. Advanced workstation
- \_\_\_ 21. Which function determines how images are displayed on the monitor(s)?
- a. Series navigation
  - b. Hanging protocol
  - c. Flip and rotate
  - d. All of the above
- \_\_\_ 22. Which function allows the user to move through a series of images frame by frame?
- a. Pan and zoom
  - b. Hanging protocol
  - c. Cine
  - d. Both a and b
- \_\_\_ 23. Which function represents the range of gray values that are being viewed on the monitor?
- a. Window
  - b. Level
  - c. Contrast
  - d. Density
- \_\_\_ 24. Which function can be used to orient the image in the anatomic hanging position?
- a. Pan and zoom
  - b. ROI
  - c. Annotations
  - d. Flip and rotate
- \_\_\_ 25. Which function increases the size of an area on the image?
- a. Pan and zoom
  - b. ROI
  - c. Annotations
  - d. Flip and rotate
- \_\_\_ 26. Which of the following measurements are commonly found on a PACS workstation?
- 1. ROI
  - 2. Distance
  - 3. Angle
  - a. 1 and 2
  - b. 1 and 3
  - c. 2 and 3
  - d. 1, 2, and 3
- \_\_\_ 27. Which advanced workstation function can reconstruct images into another plane?
- a. MPR
  - b. MIP
  - c. VRT
  - d. SSD
- \_\_\_ 28. Which advanced function allows the user to put multiple images together into one single image, such as in a scoliosis series?

- a. Image postprocessing
- b. MPR
- c. Stitching
- d. VRT

**True/False**

*Indicate whether the statement is true or false.*

- \_\_\_ 1. Digital annotations may be used to indicate the right or left side of the patient.
- \_\_\_ 2. Incorrect patient demographic information is unimportant in a PACS.

## **PACS Fundamentals**

### **Answer Section**

#### **MULTIPLE CHOICE**

1. ANS: B                   PTS: 1                   REF: 152  
OBJ: Define picture archival and communication system (PACS).
2. ANS: D                   PTS: 1                   REF: 152                   OBJ: Define PACS.
3. ANS: B                   PTS: 1                   REF: 152                   OBJ: Define PACS.
4. ANS: A                   PTS: 1                   REF: 153  
OBJ: Define picture archiving and communication system (PACS).
5. ANS: D                   PTS: 1                   REF: 155  
OBJ: Compare and contrast the various types of PACS display workstations.
6. ANS: C                   PTS: 1                   REF: 157  
OBJ: Differentiate among the different types of digital imaging workflow.
7. ANS: D                   PTS: 1                   REF: 159-162  
OBJ: Define system architecture and recognize the three major models.
8. ANS: B                   PTS: 1                   REF: 159-160  
OBJ: Define system architecture and recognize the three major models.
9. ANS: C                   PTS: 1                   REF: 160  
OBJ: Define system architecture and recognize the three major models.
10. ANS: B                   PTS: 1                   REF: 160  
OBJ: Define system architecture and recognize the three major models.
11. ANS: C                   PTS: 1                   REF: 162  
OBJ: Define system architecture and recognize the three major models.
12. ANS: A                   PTS: 1                   REF: 162-163  
OBJ: Define system architecture and recognize the three major models.
13. ANS: D                   PTS: 1                   REF: 163  
OBJ: Summarize the common functions found on a PACS workstation.
14. ANS: C                   PTS: 1                   REF: 165  
OBJ: Summarize the common functions found on a PACS workstation.
15. ANS: C                   PTS: 1                   REF: 165  
OBJ: Summarize the common functions found on a PACS workstation.
16. ANS: A                   PTS: 1                   REF: 165  
OBJ: Summarize the common functions found on a PACS workstation.
17. ANS: B                   PTS: 1                   REF: 166  
OBJ: Summarize the common functions found on a PACS workstation.
18. ANS: C                   PTS: 1                   REF: 169  
OBJ: Summarize the common functions found on a PACS workstation.
19. ANS: D                   PTS: 1                   REF: 171  
OBJ: Summarize the common functions found on a PACS workstation.
20. ANS: A                   PTS: 1                   REF: 171  
OBJ: Summarize the common functions found on a PACS workstation.
21. ANS: B                   PTS: 1                   REF: 172  
OBJ: Summarize the common functions found on a PACS workstation.
22. ANS: C                   PTS: 1                   REF: 172  
OBJ: Summarize the common functions found on a PACS workstation.

23. ANS: A                   PTS: 1                   REF: 173  
OBJ: Summarize the common functions found on a PACS workstation.
24. ANS: D                   PTS: 1                   REF: 173  
OBJ: Summarize the common functions found on a PACS workstation.
25. ANS: A                   PTS: 1                   REF: 174  
OBJ: Summarize the common functions found on a PACS workstation.
26. ANS: D                   PTS: 1                   REF: 175  
OBJ: Summarize the common functions found on a PACS workstation.
27. ANS: A                   PTS: 1                   REF: 178  
OBJ: Describe the situations and users that may require advanced PACS workstation functions.
28. ANS: C                   PTS: 1                   REF: 180  
OBJ: Describe the situations and users that may require advanced PACS workstation functions.

**TRUE/FALSE**

1. ANS: F                   PTS: 1                   REF: 173  
OBJ: Summarize the common functions found on a PACS workstation.
2. ANS: F                   PTS: 1                   REF: 176  
OBJ: Summarize the common functions found on a PACS workstation.