

## PACS

### Multiple Choice

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

- \_\_\_ 1. Two or more objects sharing resources and information or computers, terminals, and servers interconnected by communication channels is a definition of a:
  - a. local area network (LAN).
  - b. wide area network (WAN).
  - c. computer network.
  - d. all of the above.
  
- \_\_\_ 2. A computer network that spans a large area such as a city, state, nation, or continent is known as a:
  - a. WAN.
  - b. large area network.
  - c. peer-to-peer network.
  - d. client-based network.
  
- \_\_\_ 3. A network that uses a central computer that sends the entire original resource to the client is known as a:
  - a. client-based network.
  - b. WAN.
  - c. LAN.
  - d. server-based network.
  
- \_\_\_ 4. The network connection that uses glass threads to transmit data is:
  - a. coaxial.
  - b. twisted pair.
  - c. fiber optic.
  - d. infrared.
  
- \_\_\_ 5. A device that provides the interface between the computer and network is known as a:
  - a. network interface card.
  - b. network connection card.
  - c. computer interface chip.
  - d. computer connection chip.
  
- \_\_\_ 6. The standard that oversees most computerized clinical and administrative data is known as:
  - a. DICOM.
  - b. HL-7.
  - c. RIS.
  - d. HIS.
  
- \_\_\_ 7. RIS is specific to.
  - a. the patient.
  - b. radiology.
  - c. the hospital.
  - d. patient billing.

- \_\_\_ 8. The system that holds a specific patient's lab results, radiology reports, and physician notes is the:
- RIS.
  - HIS.
  - electronic medical record (EMR).
  - picture archival and communication system (PACS).
- \_\_\_ 9. The system that contains patient information, billing records, and inpatient orders is the:
- RIS.
  - HIS.
  - EMR.
  - PACS.
- \_\_\_ 10. The acronym PACS stands for \_\_\_\_\_ system.
- picture archival and control
  - picture archival and communication
  - physical archive and communication
  - physical archive and compression
- \_\_\_ 11. A PACS consists of:
- image acquisition.
  - display workstation.
  - archive servers.
- 1 and 2
  - 1 and 3
  - 2 and 3
  - 1, 2, and 3
- \_\_\_ 12. 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.
- \_\_\_ 13. The acronym RIS stands for \_\_\_\_\_ system.
- radiology integrated
  - redundant information
  - radiology information
  - reading integrated
- \_\_\_ 14. Which of the following are considered PACS architectures?
- Distributed system
  - Client/server-based system
  - Web-based system
- 1 only
  - 2 only
  - 1 and 2
  - 1, 2, and 3

- \_\_\_ 15. The number of pixels contained on a display is known as:
- matrix.
  - pixel.
  - resolution.
  - dot pitch.
- \_\_\_ 16. If the number of \_\_\_\_\_ increase(s) on a monitor, resolution \_\_\_\_\_.
- pixels; decreases
  - matrices; decreases
  - pixels; improves
  - dot pitch; improves
- \_\_\_ 17. Which of the following would be considered categories for display workstations?
- Primary reading
  - Technologist QC
  - Archive server
- 1 only
  - 1 and 2
  - 1 and 3
  - 1, 2, and 3
- \_\_\_ 18. Which of the following would be considered categories of workstation functions?
- Navigation
  - Image manipulation and enhancement
  - Image management
- 1 and 2
  - 1 and 3
  - 2 and 3
  - 1, 2, and 3
- \_\_\_ 19. Which function determines how images are displayed on the monitor(s)?
- Series navigation
  - Hanging protocol
  - Flip and rotate
  - All of the above
- \_\_\_ 20. Which function represents the range of gray values that are being viewed on the monitor?
- Window
  - Level
  - Contrast
  - Density
- \_\_\_ 21. Which function can be used to orient the image in the anatomic hanging position?
- Pan and zoom
  - ROI
  - Annotations
  - Flip and rotate

- \_\_\_ 22. Which function increases the size of an area on the image?
- Pan and zoom
  - ROI
  - Annotations
  - Flip and rotate
- \_\_\_ 23. Which of the following measurements are commonly found on a PACS workstation?
- ROI
  - Distance
  - Angle
- 1 and 2
  - 1 and 3
  - 2 and 3
  - 1, 2, and 3
- \_\_\_ 24. The place where records or documents are preserved for historic purposes is the:
- workstation.
  - archive.
  - file cabinet.
  - redundant array of independent disks (RAID).
- \_\_\_ 25. The acronym for RAID is redundant:
- array of inexpensive disks.
  - archive of independent databases.
  - array of independent disks.
  - both a and c.
- \_\_\_ 26. Which of the following are commonly used as long-term storage for DICOM images?
- Digital linear tape
  - Optical disks
  - Film
- 1 only
  - 2 only
  - 1 and 2
  - 1, 2, and 3
- \_\_\_ 27. A category of disk drives that uses two or more drives in combination for fault tolerance and performance is:
- hard drive.
  - UDO.
  - DLT.
  - RAID.
- \_\_\_ 28. Which term describes the act of keeping a complete copy of the archive in another remote location?
- ASP
  - SAN
  - Disaster recovery
  - All of the above

- \_\_\_ 29. Which of the following devices would be considered PACS peripherals?
1. Film digitizer
  2. Film imager
  3. Archive server
- a. 1 only
  - b. 1 and 2
  - c. 2 and 3
  - d. 1, 2, and 3
- \_\_\_ 30. Which device scans an analog film and produces numeric signals based on the appearance of the film?
- a. Film digitizer
  - b. Film imager
  - c. Burner
  - d. Archive server
- \_\_\_ 31. Any supplemental device connected to a PACS that performs a specific function is known as a(n):
- a. archive.
  - b. peripheral.
  - c. workstation.
  - d. digital imaging modality.
- \_\_\_ 32. Which term is used to describe the process of transferring images to remote locations for reading by a radiologist?
- a. Long-range image viewing
  - b. Teleradiology
  - c. Computed radiology
  - d. Distance reading
- \_\_\_ 33. Which of the following are common uses of a film digitizer?
1. Compare outside films
  2. Computed aided diagnosis
  3. Remote viewing of analog images
- a. 1 and 2
  - b. 1 and 3
  - c. 2 and 3
  - d. 1, 2, and 3
- \_\_\_ 34. A film imager is also known as a film:
- a. digitizer.
  - b. printer.
  - c. duplicator.
  - d. none of the above.
- \_\_\_ 35. Which of the following are common uses of imagers?
1. Backup
  2. Legal cases
  3. Outside physicians

- a. 1 and 2
- b. 1 and 3
- c. 2 and 3
- d. 1, 2, and 3

- \_\_\_ 36. What is most often the weakest link in the digital imaging chain?
- a. Monitor
  - b. Image retrieval
  - c. Processing speed
  - d. Data integrity

**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.
- \_\_\_ 3. Disks are much cheaper to distribute than laser film.
- \_\_\_ 4. Dry imagers use chemicals to process the films.

## PACS

### Answer Section

#### MULTIPLE CHOICE

1. ANS: D                   PTS: 1                   REF: 132  
OBJ: Distinguish between different types of network (geographic and component roles).
2. ANS: A                   PTS: 1                   REF: 134  
OBJ: Distinguish between different types of network (geographic and component roles).
3. ANS: D                   PTS: 1                   REF: 135  
OBJ: Distinguish between different types of network (geographic and component roles).
4. ANS: C                   PTS: 1                   REF: 139  
OBJ: Describe the different types of network cabling and their uses.
5. ANS: A                   PTS: 1                   REF: 139  
OBJ: Define network communication protocol.
6. ANS: B                   PTS: 1                   REF: 147  
OBJ: Define HL-7 and describe its use in medical imaging.
7. ANS: B                   PTS: 1                   REF: 148  
OBJ: Define HL-7 and describe its use in medical imaging.
8. ANS: C                   PTS: 1                   REF: 148  
OBJ: Define HL-7 and describe its use in medical imaging.
9. ANS: B                   PTS: 1                   REF: 148  
OBJ: Define HL-7 and describe its use in medical imaging.
10. ANS: B                   PTS: 1                   REF: 152  
OBJ: Define picture archival and communication system (PACS).
11. ANS: D                   PTS: 1                   REF: 152                   OBJ: Define PACS.
12. ANS: B                   PTS: 1                   REF: 152                   OBJ: Define PACS.
13. ANS: C                   PTS: 1                   REF: 157  
OBJ: Differentiate among the different types of digital imaging workflow.
14. ANS: D                   PTS: 1                   REF: 159-162  
OBJ: Define system architecture and recognize the three major models.
15. ANS: C                   PTS: 1                   REF: 165  
OBJ: Summarize the common functions found on a PACS workstation.
16. ANS: C                   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: D                   PTS: 1                   REF: 171  
OBJ: Summarize the common functions found on a PACS workstation.
19. ANS: B                   PTS: 1                   REF: 172  
OBJ: Summarize the common functions found on a PACS workstation.
20. ANS: A                   PTS: 1                   REF: 173  
OBJ: Summarize the common functions found on a PACS workstation.
21. ANS: D                   PTS: 1                   REF: 173  
OBJ: Summarize the common functions found on a PACS workstation.
22. ANS: A                   PTS: 1                   REF: 174  
OBJ: Summarize the common functions found on a PACS workstation.

23. ANS: D                   PTS: 1                   REF: 175  
OBJ: Summarize the common functions found on a PACS workstation.
24. ANS: B                   PTS: 1                   REF: 186  
OBJ: Describe the use of an image archive in terms of short- and long-term storage.
25. ANS: D                   PTS: 1                   REF: 189  
OBJ: Describe the use of an image archive in terms of short- and long-term storage.
26. ANS: C                   PTS: 1                   REF: 197  
OBJ: Compare and contrast the various long-term archive technologies used in current PACSs.
27. ANS: D                   PTS: 1                   REF: 189-191  
OBJ: Compare and contrast the various long-term archive technologies used in current PACSs.
28. ANS: C                   PTS: 1                   REF: 200  
OBJ: Define the concept of an application service provider.
29. ANS: B                   PTS: 1                   REF: 200  
OBJ: Discuss the common uses for imagers in a picture archival and communication system (PACS) environment.
30. ANS: A                   PTS: 1                   REF: 200  
OBJ: Explain the differences between laser film digitizers and charge-coupled device (CCD) film digitizers.
31. ANS: B                   PTS: 1                   REF: 205  
OBJ: Discuss the common uses for imagers in a picture archival and communication system (PACS) environment.
32. ANS: B                   PTS: 1                   REF: 203  
OBJ: Discuss the common uses for imagers in a picture archival and communication system (PACS) environment.
33. ANS: D                   PTS: 1                   REF: 203  
OBJ: Compare and contrast the various long-term archive technologies used in current picture archival and communication systems.
34. ANS: B                   PTS: 1                   REF: 203  
OBJ: Compare and contrast dry laser imager technology with wet laser imager technology.
35. ANS: D                   PTS: 1                   REF: 205  
OBJ: Discuss the common uses for imagers in a PACS environment.
36. ANS: A                   PTS: 1                   REF: 217  
OBJ: Describe the daily and monthly/quarterly monitor QC activities.

#### **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.
3. ANS: T                   PTS: 1                   REF: 206  
OBJ: Identify common uses for CD/DVD burners in a PACS environment.
4. ANS: F                   PTS: 1                   REF: 205  
OBJ: Compare and contrast dry laser imager technology with wet laser imager technology.