

Digital Mammography

1. True or false. Full-field digital mammography **has not** transformed mammography over the past decade.
 - a. True
 - b. False
2. What year did it become evident to Albert-Saloman to evaluate radiography technology for breast cancer detection?
 - a. 1910
 - b. 1913
 - c. 1915
 - d. 1918
3. The modern era of mammography began in the late _____.
 - a. 1940s
 - b. 1950s
 - c. 1960s
 - d. 1970s
4. How many women were diagnosed with breast cancer worldwide in 2008?
 - a. 1.22 million
 - b. 1.32 million
 - c. 1.38 million
 - d. 1.51 million
5. What percentage of breast cancers are not visualized by screen-film mammography?
 - a. 2-5%
 - b. 6-9%
 - c. 10-15%
 - d. 10-20%
6. In a screen-film system, what ends the film exposure when there are enough x-rays to make the optimum exposure?
 - a. Target
 - b. Filter
 - c. Automatic exposure control
 - d. Anode
7. In digital mammography, a _____ replaces the screen-film system.
 - a. Detector
 - b. Filter
 - c. Target
 - d. Anode
8. At the time the text was written, current digital mammography systems had dose reductions of _____ compared to screen-film mammography.
 - a. 5-10%
 - b. 12-15%
 - c. 17-23%
 - d. 25-30%
9. True or false. Quantum noise **is** dependent on breast density composition.
 - a. True
 - b. False

10. Which of the following is a type of digital mammography imaging system?
 - a. Full-field detector system
 - b. Scanned-slot device that uses a rectangular detector
 - c. Partial-field detector system
 - d. A & B
11. What is a phosphorus flat panel detector constructed of?
 - a. Amorphous silicon
 - b. Amorphous selenium
 - c. Crystalline silicon
 - d. Phosphor
12. What is the size of the phosphor-CCD system detector?
 - a. 1 cm × 12 cm
 - b. 1 cm × 18 cm
 - c. 1 cm × 20 cm
 - d. 1 cm × 24 cm
13. Computed radiography systems utilize a _____ screen.
 - a. Zinc
 - b. Phosphor
 - c. Tungsten
 - d. Cobalt
14. Image quality for mammography has been based on a _____.
 - a. Test phantom
 - b. System status report
 - c. Review of images
 - d. Radiologist feedback
15. What is the procedure that applies an algorithm to correct image degradation called?
 - a. Flat-field
 - b. Gain correction
 - c. Detector correction
 - d. A & B
16. What year was the first digital screening study in Norway performed?
 - a. 1998
 - b. 1999
 - c. 2000
 - d. 2001
17. What is the application of applying mathematical operations to the “raw” digital image called?
 - a. Image transformation
 - b. Image processing
 - c. Image manipulation
 - d. Imaging posting
18. What is a post-processing technique that is created by subtracting a low-pass filtered version of the original image from the original image called?
 - a. Unsharp masking
 - b. Masking shape
 - c. Flat masking
 - d. Enhance masking

19. Digital images printed with a laser printer are done with _____ bits per pixel displayed.
- 8
 - 10
 - 12
 - All the above
20. In the study done by Berns, digital mammography demonstrated an _____ time savings over screen-film mammography.
- 20%
 - 25%
 - 30%
 - 35%
21. What was the main reason for time-saving between digital and film-screen mammography exams?
- Films easier to critique
 - Film processing time eliminated
 - Faster interpretation
 - None of the above
22. In a study performed by Haygood, what was the average radiologist interpretation time for a digital mammogram?
- 1.27 minutes
 - 2.12 minutes
 - 4.0 minutes
 - 4.2 minutes