

Dental Radiology Practice Exam

Intraoral Imaging

1. The bitewing film may be positioned in either a vertical or a horizontal position.
 - a. True
 - b. False
2. The radiograph that shows images of the entire length of the tooth, including the apex, is the:
 - a. bitewing.
 - b. periapical.
 - c. occlusal.
 - d. All of the above.
3. The radiographic technique that produces the *least* amount of distortion to the image is the:
 - a. paralleling technique.
 - b. occlusal technique.
 - c. bisection of the angle technique.
 - d. panoramic technique.
4. In the paralleling technique, the film is placed:
 - a. at right angles to both the film and the long axis of the tooth.
 - b. parallel to the long axis of the tooth.
 - c. close to the crowns of the teeth.
 - d. Both A and B are correct.
5. The film is positioned in a _____ position when exposing a mandibular canine radiograph.
 - a. vertical
 - b. horizontal
 - c. Both A and B are correct.
6. A bitewing radiographic survey can include:
 - a. two films.
 - b. four films.
 - c. six films.
 - d. Both A and B are correct.
7. The premolar periapical film should include:
 - a. the distal half of the canine.
 - b. both premolars.
 - c. the canine.
 - d. Both A and B.
8. Incorrect _____ angulation will result in closed contacts on the radiograph.
 - a. horizontal
 - b. vertical

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9. The technique sometimes referred to as the short cone technique is the:
 - a. paralleling technique.
 - b. bisecting technique.
10. The most appropriate technique to use when exposing dental X-ray film on a patient with a shallow palate, a very short lingual frenum, or palatal tori is the:
 - a. bisecting technique.
 - b. paralleling technique.
 - c. extraoral radiograph.
11. The long axis of the tooth is an imaginary line, dividing the tooth in half horizontally.
 - a. True
 - b. False
12. Crestal bone is not visible with a periapical x-ray.
 - a. True
 - b. False
13. A herringbone pattern on a dental x-ray indicates the film packet was:
 - a. opened in the darkroom before the safelight was turned on.
 - b. placed upside down in the patient's mouth.
 - c. placed between the teeth and the cheek.
 - d. placed backward with the white side toward the tubehead.
14. In the labial mounting method, radiographs are viewed as if the dental radiographer was sitting in the patient's mouth looking out.
 - a. True
 - b. False
15. An edentulous patient will not require radiographs of any kind.
 - a. True
 - b. False

Digital Imaging, Dental Film, and Processing Radiographs

16. Film-holding devices can be used for both the paralleling and bisection of the angle technique.
 - a. True
 - b. False
17. Digital radiography systems require 50 to 80 percent more exposure than conventional radiographic units.
 - a. True
 - b. False
18. Digital images are electronic signals captured by a sensor.
 - a. True
 - b. False

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19. A special type of film is required duplicate a radiograph.
- True
 - False
20. Duplicating radiographs does not require the use of x-radiation.
- True
 - False
21. The latent image is the image:
- after processing.
 - on the film before processing.
 - in the patient's mouth.
22. The embossed dot or "bump" on the film packet is always placed:
- toward the PID.
 - away from the PID.
 - It does not matter which way it is placed.
23. The _____ the film speed is, the less radiation is needed for each exposure.
- faster
 - slower
 - None of the above.
24. The type(s) of digital imaging is/are:
- direct digital imaging.
 - indirect digital imaging.
 - storage phosphor imaging.
 - All of the above.
25. Digital radiography has been in dentistry since:
- 1980
 - 1987
 - 1999
 - 1985
26. How often must processing solutions be replenished?
- Hourly
 - Daily
 - Weekly
 - Monthly
27. The solution that forms the radiolucent images on the film is the:
- fixer.
 - developer
 - water
 - a or b

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28. The solution that removes the silver halide crystals that were not exposed to radiation is the:
- fixer.
 - developer.
 - water.
29. Boxes of extraoral film are labeled with:
- expiration date.
 - film thickness.
 - film size.
 - Both a and c are correct.
30. Advantages of automatic film processors include which of the following?
- More processing time is required.
 - Time and temperature are automatically controlled.
 - Less space is required.
 - Maintenance is not required.
 - Both b and c are correct.
31. Which of the following can cause white spots if splashed on radiographs during processing?
- Water
 - Fixer
 - Developer
 - Saliva
32. Which of the following can cause black spots if splashed on radiographs during processing?
- Developer
 - Water
 - Fixer
 - All of the above.
33. Which of the following processing errors can cause light images?
- Overdevelopment
 - Underdevelopment
 - Cold solution
 - Both a and c are correct.
 - Both b and c are correct.
34. Fogged film can be caused by:
- improper safe lighting.
 - using expired film.
 - leaving film in water too long.
 - Both a and b are correct.
35. An extraoral film is available in which size(s)?
- 5 X 7 inches
 - 8 X 10 inches
 - All of the above.

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Legal Issues, Quality Assurance, and Infection Control

36. After exposure, each mount should be labeled with the patient's name and the date.
- True
 - False
37. Disinfecting solutions may cause damage to the electrical connections of the radiographic equipment.
- True
 - False
38. A properly functioning view box is not necessary for the interpretation of dental radiographs.
- True
 - False
39. The dental film packet should be sterilized after wiping the saliva off of it.
- True
 - False
40. Film-holding instruments and bite-blocks that are placed in the patient's mouth are considered semicritical items and must be sterilized or high-level disinfected before reuse.
- True
 - False
41. Dental radiographs are owned by the:
- insurance company.
 - patient.
 - physician.
 - dentist.
42. Which of the following are sources of disease transmission during dental radiography?
- Film packets
 - Control panel
 - Dental chair controls
 - All of the above.
43. The American Academy of Dental Radiography recommends annual tests for dental radiograph machines designed to identify minor malfunctions including:
- variations in radiation output.
 - inadequate collimation.
 - tubehead drifting.
 - inaccurate kilovoltage and milliamperage readings.
 - All of the above.
44. To determine if dental x-ray film is fresh:
- unwrap one exposed film from a newly opened box.
 - process the film using fresh chemicals.
 - do not check the results.
 - check the expiration date on the box.

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45. Dental radiographic equipment that should receive a protective barrier includes:
- x-ray machine.
 - lead apron.
 - dental chair.
 - All of the above.
46. Documentation of all dental imaging must include all of the following information EXCEPT:
- date the film processing solutions were changed.
 - informed consent.
 - rationale for requiring images.
 - diagnostic interpretation.
47. A patient's signing of an x-ray refusal releases the dentist from liability.
- True
 - False
48. Fresh fixer film at full strength should produce a clear film within:
- 30 seconds.
 - 2 minutes.
 - 4 minutes.
 - 6 minutes.
49. Following the exposure of radiographs:
- all contaminated items should be disposed.
 - positioning devices should be placed in the designated contaminated items area.
 - the lead apron can be removed after hands are washed.
 - All of the above.
 - All of the above, EXCEPT c.

Foundations of Radiography

50. Dental Imaging enables the dentist to:
- Detect early-stage dental caries
 - Evaluate growth and development
 - See conditions that are not visible
 - All of the options are correct
51. Exposure to radiation:
- (No matter how small) has the potential to cause harmful biologic changes.
 - has a threshold, below which exposure is entirely safe.
 - is safer when there is a single large dose rather than a series of smaller doses.
 - from a dental X-ray machine does not involve particulate radiation and is completely safe.
52. The x-ray was discovered on November 8, 1895, by _____.
- John Greenwood
 - Wilhem Conrad Roentgen



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- c. G.V. Black
 - d. C. Edmund Kells
53. The dentist who is credited with the first practical use of radiographs in dentistry in 1896 is
- a. Wilhem Conrad Roentgen
 - b. G.V. Black
 - c. Edmund Kells
 - d. John Greenwood
54. Anything that occupies space and has a form or shape is
- a. Energy
 - b. Solid
 - c. Matter
 - d. A photon
55. Which of the following statements is true concerning the structure of the atom?
- a. The nucleus contains protons and electrons
 - b. Electrons have no weight or mass
 - c. The orbital path of an electron around the nucleus is called an electron cell
 - d. Electrons are unstable in their orbits and shift freely
56. In dentistry, the ____ the wavelengths of the x-rays, the greater their energy and their usefulness will be.
- a. shorter
 - b. longer
 - c. more ionized
 - d. Straighter
57. Which component of the x-ray machine functions in positioning the tubehead?
- a. Kilovoltage selector
 - b. Control panel
 - c. Extension arm
 - d. Cathode
58. Minute bundles of pure energy that have no weight or mass describes
- a. ionization.
 - b. photons.
 - c. electrons.
 - d. atoms.
59. The control panel contains the master switch, indicator light, selector buttons, and
- a. plug.
 - b. tubehead.
 - c. exposure button.
 - d. hold button.

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60. The heart of the x-ray generating system is the
- x-ray tube.
 - insulating oil.
 - transformer.
 - position indicator device.
61. Secondary radiation
- is often referred to as the useful beam.
 - is often referred to as the primary beam.
 - refers to x-radiation that is created when the primary beam interacts with matter.
 - is a form of radiation that occurs when an x-ray beam has been deflected from its path by interaction with matter.
62. What part of the x-ray machine aims the central ray?
- Cylinder
 - PID
 - Cathode
 - X-ray tube
63. Which of the following structures will appear radiopaque on dental x-ray film?
- Metal restorations
 - Soft tissue
 - Tooth decay
 - Dental pulp
64. The term ____ is used to describe areas that appear dark on the radiograph; ____ is the term used to describe areas that appear white or light gray.
- radiopaque; radiolucent
 - radiolucent; radiopaque
 - density; contrast
 - contrast; density
65. The range of shades of gray between black and white on a radiograph is called
- contrast.
 - density.
 - sharpness.
 - focus point.
66. The degree of density or blackness on a radiograph is controlled by
- the film speed.
 - the kilovoltage.
 - the milliamperere-seconds.

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- d. the position-indicating device.
67. The sharpness of an image is influenced by
- focal spot size.
 - film composition.
 - movement of the patient.
 - All of the options.
68. The fuzzy or blurred area that surrounds the image is called the
- detail.
 - penumbra.
 - definition.
 - resolution.
69. _____ can cause a disruption in the cellular metabolism and permanently damage living cells.
- Neutrons
 - Ionization
 - Chemical exposure
 - Mucosa
70. Damage caused by ionizing x-radiation to genetic cells
- affects only the person being x-rayed.
 - can affect future generations.
 - affects only the dental assistant.
 - affects the cells of the eye, skin, and oral mucosa.
71. Which of the following tissues has the highest radiation sensitivity?
- Lens of the eye
 - Thyroid gland
 - Kidney
 - None of the options
72. A lead apron and thyroid collar
- is utilized for a full mouth series of films but is not necessary for single periapical films.
 - must be used on all patients for all exposures.
 - is required for pediatric patients but is optional for adults.
 - is mandated only for pregnant women.
73. The *Guidelines for Prescribing Dental Radiographs* issued by the American Dental Association and the FDA recommend which of the following dental radiographic procedures for a pregnant patient?
- Do not take radiographs on a pregnant patient.
 - Radiographic procedures do not need to be altered because of pregnancy.

- c. Take radiographs only after the first trimester.

74. What does the ALARA concept state?
- a. ALARA is a professional organization for dental assistants.
 - b. Anyone taking x-rays must be certified.
 - c. Keep radiation exposure as low as reasonably achievable.
 - d. None of the options.

Extraoral Imaging

75. Extraoral radiographs are *not* used to diagnose
- a. impacted teeth.
 - b. large areas of the jaws.
 - c. dental caries.
 - d. TMJ disorders.
76. A critical component in obtaining a quality panoramic radiograph is
- a. patient positioning.
 - b. qualified operator.
 - c. proper film processing.
 - d. All of the options are correct.
77. Which type of imaging system records panoramic images directly onto a computer screen?
- a. Cephalometric
 - b. CBCT
 - c. Panoramic
 - d. All of the options are correct
78. Common errors that can occur in panoramic dental radiography include
- a. ghost images.
 - b. lead apron artifacts.
 - c. chin positioning.
 - d. All of the options are correct.
79. An advantage of panoramic radiography is
- a. image sharpness.
 - b. focal trough limitations.
 - c. ease of use.
 - d. cost of equipment.
80. TMJ radiography can be used to observe
- a. the bones of the TMJ.
 - b. the relationship of the jaw joint.

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- c. the articular disk.
 - d. both bones of the TMJ and articular disk.
81. Lateral jaw radiography is BEST used for
- a. viewing the posterior region of the mandible.
 - b. small children.
 - c. patients with limited jaw opening.
 - d. a patient who cannot tolerate intraoral film placement.
82. The technique used to obtain cross-sectional images without exposing the patient to x-radiation is
- a. direct digital imaging.
 - b. computer tomography.
 - c. storage phosphor imaging.
 - d. magnetic resonance imaging.
83. Which of the following may create a “ghost image” on a panoramic image?
- a. Earrings
 - b. Necklace
 - c. Hearing aides
 - d. All the options are correct
84. The extraoral radiograph provides an overall image of the skull and jaws.
- a. True
 - b. False
85. Panoramic radiography is not available in digital imaging.
- a. True
 - b. False
86. The panoramic head positioner is used to position to align the teeth as accurately as possible.
- a. True
 - b. False
87. The patient should be instructed to place their tongue on the palate for the duration of capturing a panoramic image.
- a. True
 - b. False

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Answer Key

1. A	2. B	3. A	4. B
5. C	6. D	7. D	8. A
9. B	10. A	11. B	12. B
13. D	14. B	15. B	16. A
17. B	18. A	19. B	20. A
21. B	22. A	23. A	24. D
25. B	26. B	27. B	28. B
29. D	30. E	31. B	32. A
33. E	34. D	35. C	36. A
37. A	38. B	39. B	40. A
41. D	42. D	43. E	44. B
45. A	46. A	47. B	48. B
49. D	50. D	51. A	52. B
53. C	54. C	55. C	56. A
57. C	58. B	59. C	60. A
61. C	62. B	63. A	64. B
65. A	66. C	67. D	68. B
69. B	70. B	71. A	72. B
73. B	74. C	75. C	76. D
77. D	78. D	79. D	80. C
81. C	82. D	83. D	84. A
85. B	86. A	87. A	