Model Questions for General Examination

1. Increasing the kV setting on an X-ray machine increases the:

(a) Penetrating power

(b) Short-wavelength components of the X-ray beam

(c) Radiation intensity

(d) All of the above

2. During the manufacturing of casting, the purpose of a riser is:

(a) To introduce molten metal into the mold

(b) To provide additional molten metal to allow for shrinkage during solidification

(c) To allow excess heat to escape during solidification

(d) To provide a vent for excess steam to escape

3. An effective method of recognizing a film artifact is:

(a) Viewing a film in daylight

(b) Viewing film in reflected light from a viewer

(c) Comparing both films shots with a double film technique

(d) All of the above

4. The main reason for using a casting is that:

(a) Castings are stronger than other metal product forms

(b) Castings are normally of higher quality than other metal product forms

(c) Complex shapes of minimum weight are easily manufactured

(d) None of the above

5. A change in which of the following parameters would require a new X ray exposure chart?

(a) kV

(b) Required film density

(c) Test piece thickness

(d) All of the above

6. Static marks on radiographic film are caused by:

(a) An improperly grounded X-ray tube

(b) Scratches on the lead screens

(c) Poor film handling technique

(d) Old film

7. Of the following radiographic sources, which emits the most penetrating radiation?

(a) Co-60

(b) Ra-226

(c) Cs-137

(d) Ir-192

8. Which of the following techniques would probably reduce the amount of backscattered radiation reaching the film during a radiographic exposure?

(a) Using a finer-grained film

(b) Backing the cassette with a sheet of lead

(c) Removing lead screens

(d) All of the above

9. Radiographic contrast is dependent on:

(a) Density

(b) Processing

(c) Radiation energy

(d) All of the above

10. A plot of film density versus the log of relative exposure is called:

(a) An H&D curve

(b) A sensitometric curve

(c) A characteristic curve

(d) All of the above

11. The most common material used for targets in X ray tubes is:

(a) Tungsten

(b) Copper

(c) Silver

(d) Beryllium

12. A dark crescent-shaped spot, clearly in the base metal adjacent to a weld would probably be:

(a) Burn through

(b) Film crimp mark

(c) A crack

(d) A water spot on the film

13. Which of the following are potential sources of scattered radiation?

(a) Test piece

(b) Cassette

(c) Floor

(d) All of the above

14. If the required exposure time for a 2220 GBq (60 curie) Ir-192 source is 2 minutes, what exposure time would be required at 1110 GBq (30 curie) source:

(a) 2/3 minutes

(b) 60 minutes

(c) 2 minutes

(d) 4 minutes

15. An advantage of a larger grain film is:

(a) It has a higher speed

(b) It has a better definition

(c) It has a lower speed

(d) None of the above

16. How does radiation intensity change with increasing distance from the source?

(a) Inversely with distance

(b) Inversely with the square of the distance

(c) Directly with distance

(d) Directly with the square of the distance

17. A weld discontinuity which consists of unmelted joint surfaces at the root, and which may be caused by poor fit-up, is called:

(a) Hot short cracking

(b) A slag inclusion

(c) Incomplete penetration

(d) Burn through

18. Mottling due to X-ray diffraction can be identified by:

(a) Noting a large change between two successive exposures with the test piece rotated slightly about the beam axis

(b) Noting a slight change between two successive exposures with the test piece rotated slightly about the beam axis

(c) Noting a characteristic pattern corresponding to the lattice spacing

(d) None of the above

19. Which of the following welding discontinuities would be considered the most serious?

(a) Porosity

(b) Incomplete penetration

(c) Crack

(d) Slag inclusions

20. A depression at the edge of a weld where the base metal has been melted during welding is called:

(a) Burn through

(b) Undercut

(c) Root concavity

(d) Root convexity

Model Questions for Specific Examination

1. Contrast and definition are the two major factors that determine the_____of the radiograph:

(a) Density

(b) Sensitivity

(c) Graininess

(d) Intensity

2. Scatter radiation:

(a) Is not controllable

(b) Is controllable to some extent, but cannot be completely eliminated

(c) Can be eliminated completely by changing the kV

(d) Can be eliminated completely by using lead intensifying screens

3. Which of the following factors will affect the definition of the radiographic image?

(a) Intensity of radiation

(b) Film density

(c) Tube current

(d) Focal spot size

4. Slow films:

(a) Give better definition than fast films

(b) Are faster than fast films

(c) Require shorter exposure times than fast films

(d) Usually have less contrast than fast films

5. Contrast is defined as the comparison between_____on different areas of the radiograph:

(a) Density

(b) Sensitivity

(c) Sharpness

(d) Latitude

6. Definition is defined as the measure of the_____of the outline of the image in the radiograph.

(a) Density

(b) Sensitivity

(c) Sharpness

(d) Latitude

7. As radiation (X ray or gamma-ray) energy is lowered:

(a) Radiation of longer wavelength and better penetration is produced

(b) Radiation of shorter wavelength and better penetration is produced

(c) Radiation of shorter wavelength and less penetration is produced

(d) Radiation with longer wavelength and less penetration is produced

8. Dark crescent-shaped indications on a radiographic film are most likely caused by:

(a) Crimping film after exposure

(b) Crimping film before exposure

(c) Sudden extreme temperature change while processing

(d) Warm or exhausted fixer

9. Lead screens are primarily used to:

(a) Improve the quality of the radiography by increasing the effect of scatter radiation

(b) Intensify the primary beam

(c) Decrease film graininess

(d) Reduce density of film

10. The half-value layer of lead for Co-60 is approximately 13 mm (0.5 in). If the radiation level on the source side of a 38 mm (1.5 in) lead plate is 0.64 Gy/h (64 R/h):, the radiation level on the opposite side is:

(a) 0.08 Gy/h (8 R/h).

(b) 0.213 Gy/h (21.33 R/h)

(c) 0.107 Gy/h (10.67 R/h)

(d) 0.32 Gy/h (32 R/h).

GENERAL MODEL ANSWERKEY **SPECIFIC MODEL ANSWER KEY**

QUESTIONS	ANSWERS			QUESTIONS	ANSWERS
1	a			1	b
2	b			2	b
3	b			3	d
4	d			4	a
5	b			5	a
6	c			6	c
7	a			7	d
8	b			8	a
9	d			9	b
10	d			10	d
11	a				
12	b				
13	d				
14	d				
15	a				
16	b				
17	c				
18	b				
19	c				
20	b				