Name:_____ Class:_____ Date:_____

# TEST BANK FOR

Principles of Radiographic Imaging An Art and a Science, 6th Edition by Richard R. Carlton (Author), Arlene M. Adler (Author), Vesna Balac (Author)

**Chapter 1-42**

## Chapter 01 - Basic Mathematics

### Multiple Choice

1. 1/7 + 5/9 =
   a. 6/16
   b. 35/63
   c. 44/63
   d. 9/35

*ANSWER:* c
*POINTS:* 1
*DIFFICULTY:* Easy
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 12:41 AM
*DATE MODIFIED:* 2/5/2019 2:30 AM

2. 5/8 × 7/9 =
   a. 12/17
   b. 45/56
   c. 12/72
   d. 35/72

*ANSWER:* d
*POINTS:* 1
*DIFFICULTY:* Easy
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 12:45 AM
*DATE MODIFIED:* 2/5/2019 2:31 AM

3. 1/6 ÷ 4/5 =
   a. 1/5
   b. 4/11
   c. 5/24
   d. 4/30

*ANSWER:* c
*POINTS:* 1
*DIFFICULTY:* Easy
*QUESTION TYPE:* Multiple Choice

*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 12:50 AM
*DATE MODIFIED:* 2/5/2019 2:31 AM

4. 46.3 + 29.87 =
   a. 245
   b. 2,450
   c. 76.17
   d. 7.617
*ANSWER:* c
*POINTS:* 1
*DIFFICULTY:* Easy
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 2:21 AM
*DATE MODIFIED:* 2/5/2019 2:32 AM

5. 16.3 × 1.2 =
   a. 19.56
   b. 195.6
   c. 17.5
   d. 1.75
*ANSWER:* a
*POINTS:* 1
*DIFFICULTY:* Easy
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 2:23 AM
*DATE MODIFIED:* 2/5/2019 2:33 AM

6. 1,800 ÷ 0.30 =
   a. 0.0001
   b. 540
   c. 6,000
   d. 60,000
*ANSWER:* c
*POINTS:* 1
*DIFFICULTY:* Easy
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 9:48 PM
*DATE MODIFIED:* 2/5/2019 1:15 AM

7. Convert 7/12 to a decimal.

a. 0.583
b. 1.714
c. 19.83
d. 84.00

*ANSWER:* a
*POINTS:* 1
*DIFFICULTY:* Medium
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 9:58 PM
*DATE MODIFIED:* 2/5/2019 1:16 AM

8. Convert 87.3% to a decimal.
a. 0.0873
b. 0.873
c. 8.73
d. 87.3

*ANSWER:* b
*POINTS:* 1
*DIFFICULTY:* Medium
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 10:00 PM
*DATE MODIFIED:* 2/5/2019 1:16 AM

9. Change 23.46 to a percent.
a. 0.2346%
b. 23.46%
c. 2.346%
d. 2,346%

*ANSWER:* d
*POINTS:* 1
*DIFFICULTY:* Medium
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 10:12 PM
*DATE MODIFIED:* 2/28/2019 4:01 PM

10. The number of significant digits in $3.75 \times 10^4$ is
a. two.
b. three.
c. four.
d. five.

*ANSWER:* b

*POINTS:* 1
*DIFFICULTY:* Medium
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 10:15 PM
*DATE MODIFIED:* 2/5/2019 1:18 AM

11. The inverse of 0.137 is approximately
    a. 1.37.
    b. 7.30.
    c. 73.
    d. 137.

*ANSWER:* b
*POINTS:* 1
*DIFFICULTY:* Medium
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 10:17 PM
*DATE MODIFIED:* 2/5/2019 1:18 AM

12. Convert 540.7 to scientific notation.
    a. $5.407 \times 10^{2}$
    b. $5.407 \times 10^{-2}$
    c. $5.407 \times 10^{3}$
    d. $5.407 \times 10^{-3}$

*ANSWER:* b
*POINTS:* 1
*DIFFICULTY:* Medium
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 10:24 PM
*DATE MODIFIED:* 2/5/2019 1:19 AM

13. $2.63 \times 10^{-2} =$
    a. 0.00263
    b. 0.0263
    c. 26.3
    d. 263

*ANSWER:* b
*POINTS:* 1
*DIFFICULTY:* Medium
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False

*DATE CREATED:* 2/4/2019 10:27 PM
*DATE MODIFIED:* 2/5/2019 1:19 AM

14. If you purchase four (4) twelve-packs of soda as a fundraiser for $10.00 and sell each can of soda for 50 cents, your profit is

a. $9.74.
b. $14.00.
c. $24.00.
d. $34.00.

*ANSWER:* b
*POINTS:* 1
*DIFFICULTY:* Medium
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 10:29 PM
*DATE MODIFIED:* 2/5/2019 1:19 AM

15. Mercury (Hg), a metal, is liquid at room temperature. Its density is 13.6 $g/cm^3$. If you have 100 mL of Hg, how many grams do you have?

a. 0.136
b. $1.36 \times 10^{-3}$
c. 136
d. $1.36 \times 10^{3}$

*ANSWER:* d
*POINTS:* 1
*DIFFICULTY:* Difficult
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 10:31 PM
*DATE MODIFIED:* 2/5/2019 1:20 AM

16. Convert 113°F to °C.

a. 20.3°C
b. 62.8°C
c. 81°C
d. 235°C

*ANSWER:* b
*POINTS:* 1
*DIFFICULTY:* Medium
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 10:33 PM
*DATE MODIFIED:* 2/5/2019 1:20 AM

17. The equation $x^2 + 2xy + y^2$ can be expressed as:

a. $(x + y)^2$

b. $2x + 2y$

c. $x + 2xy + y^2$

d. $x^2 + y^2 + xy$

*ANSWER:* a
*POINTS:* 1
*DIFFICULTY:* Medium
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 10:35 PM
*DATE MODIFIED:* 2/5/2019 1:21 AM

18. Consider the following proportional relationship: x = ay/bd. Assuming all other quantities remain constant, what happens to the value of x when b increases?

a. increases

b. decreases

c. remains the same

d. cannot be determined

*ANSWER:* b
*POINTS:* 1
*DIFFICULTY:* Medium
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 10:36 PM
*DATE MODIFIED:* 2/5/2019 1:21 AM

19. Consider the following proportional relationship: x = ay/bd. Assuming all other quantities remain constant, what happens to the value of x when d decreases?

a. increases

b. decreases

c. remains the same

d. cannot be determined

*ANSWER:* a
*POINTS:* 1
*DIFFICULTY:* Medium
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 10:39 PM
*DATE MODIFIED:* 2/5/2019 1:21 AM

20. Consider the following proportional relationship: x = ay/bd. Assuming all other quantities remain constant, what happens to the value of x when the product of bd increases?

a. increases

b. decreases
c. remains the same
d. cannot be determined

*ANSWER:* b
*POINTS:* 1
*DIFFICULTY:* Medium
*QUESTION TYPE:* Multiple Choice
*HAS VARIABLES:* False
*DATE CREATED:* 2/4/2019 10:40 PM
*DATE MODIFIED:* 2/5/2019 1:22 AM

**Completion**

21. 74 kV is equal to _____ volts.
*ANSWER:* 74,000
*POINTS:* 1
*DIFFICULTY:* Easy
*QUESTION TYPE:* Completion
*HAS VARIABLES:* False
*STUDENT ENTRY MODE:* Basic
*DATE CREATED:* 2/5/2019 9:11 PM
*DATE MODIFIED:* 2/5/2019 9:13 PM

22. 400 mA is equal to _____ amperes.
*ANSWER:* 0.40
*POINTS:* 1
*DIFFICULTY:* Easy
*QUESTION TYPE:* Completion
*HAS VARIABLES:* False
*STUDENT ENTRY MODE:* Basic
*DATE CREATED:* 2/5/2019 9:13 PM
*DATE MODIFIED:* 2/5/2019 9:14 PM

23. 120,000 V is equal to _____ kVp.
*ANSWER:* 120
*POINTS:* 1
*DIFFICULTY:* Easy
*QUESTION TYPE:* Completion
*HAS VARIABLES:* False
*STUDENT ENTRY MODE:* Basic
*DATE CREATED:* 2/5/2019 9:14 PM
*DATE MODIFIED:* 2/5/2019 9:14 PM

24. 3.7 m are equal to _____ cm.
*ANSWER:* 370

*POINTS:* 1
*DIFFICULTY:* Easy
*QUESTION TYPE:* Completion
*HAS VARIABLES:* False
*STUDENT ENTRY MODE:* Basic
*DATE CREATED:* 2/5/2019 9:15 PM
*DATE MODIFIED:* 2/5/2019 9:15 PM

**Problem**

25. $1/R = 1/R_1 + 1/R_2$; solve for $R_2$.
*ANSWER:* $RR_1/R_1 - R$
*POINTS:* 1
*DIFFICULTY:* Difficult
*QUESTION TYPE:* Numeric Response
*HAS VARIABLES:* False
*DATE CREATED:* 2/5/2019 9:17 PM
*DATE MODIFIED:* 2/5/2019 9:18 PM

26. $F = Gm_1m_2/r^2$; solve for $m_1$.
*ANSWER:* $Fr^2/Gm_2$
*POINTS:* 1
*DIFFICULTY:* Difficult
*QUESTION TYPE:* Numeric Response
*HAS VARIABLES:* False
*DATE CREATED:* 2/5/2019 9:18 PM
*DATE MODIFIED:* 2/5/2019 9:19 PM

27. $PV = nRT$; solve for T.
*ANSWER:* PV/nR
*POINTS:* 1
*DIFFICULTY:* Difficult
*QUESTION TYPE:* Numeric Response
*HAS VARIABLES:* False
*DATE CREATED:* 2/5/2019 9:19 PM
*DATE MODIFIED:* 2/5/2019 9:19 PM

28. $I = E/R + r$; solve for r.
*ANSWER:* $E - IR/I$
*POINTS:* 1
*DIFFICULTY:* Difficult
*QUESTION TYPE:* Numeric Response
*HAS VARIABLES:* False
*DATE CREATED:* 2/5/2019 9:20 PM

*DATE MODIFIED:* 2/5/2019 9:20 PM

29. $P = 2L + 2W$; solve for L.
*ANSWER:* $(P - 2W)/2$
*POINTS:* 1
*DIFFICULTY:* Difficult
*QUESTION TYPE:* Numeric Response
*HAS VARIABLES:* False
*DATE CREATED:* 2/5/2019 9:20 PM
*DATE MODIFIED:* 2/5/2019 9:21 PM

30. $V = 1/3\pi r^2 h$; solve for $\pi$.
*ANSWER:* $3V/r^2h$
*POINTS:* 1
*DIFFICULTY:* Difficult
*QUESTION TYPE:* Numeric Response
*HAS VARIABLES:* False
*DATE CREATED:* 2/5/2019 9:21 PM
*DATE MODIFIED:* 2/18/2019 10:20 PM

31. $P_1V_1/T_1 = P_2V_2/T_2$; solve for $V_2$.
*ANSWER:* $P_2V_2T_1/P_1V_1$
*POINTS:* 1
*DIFFICULTY:* Difficult
*QUESTION TYPE:* Numeric Response
*HAS VARIABLES:* False
*DATE CREATED:* 2/5/2019 9:22 PM
*DATE MODIFIED:* 2/5/2019 9:22 PM