

# 1021\_1st Exam\_1021023

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) An ion has 7 protons, 8 neutrons, and 10 electrons. The symbol for the ion is \_\_\_\_\_.

- A)  $^{18}\text{O}^-$                       B)  $^{18}\text{O}^+$                       C)  $^{15}\text{N}^{3+}$                       D)  $^{15}\text{N}^{3-}$                       E)  $^{15}\text{Ne}^{3+}$

Answer: D

2) How many significant figures are in 4500000. mL?

- A) 6                                      B) 3                                      C) 5                                      D) 4                                      E) 7

Answer: E

3) The compound,  $\text{ClO}$ , is named

- A) chlorine monoxide.                                      B) chlorine (II) oxide.  
C) hypochlorite.    D) chlorite.

Answer: A

4) The atomic number of an atom of  $^{15}\text{O}$  is \_\_\_\_\_.

- A) 23                                      B) 9                                      C) 7                                      D) 8                                      E) 15

Answer: D

5) A person weighs 77.1 kg. What is his weight in pounds?

- A) 35.0 pounds                      B) 154 pounds                      C) 30.8 pounds                      D) 170 pounds                      E) 193 pounds

Answer: D

6) Ammonia is an example of

- A) a compound.    B) a heterogeneous mixture.  
C) an element.    D) a homogeneous mixture.

Answer: A

7) What decimal power does the abbreviation  $\mu$  represent?

- A)  $1 \times 10^{-12}$                       B)  $1 \times 10^{-6}$                       C)  $1 \times 10^{-15}$                       D)  $1 \times 10^{-3}$                       E)  $1 \times 10^{-9}$

Answer: B

8) Which of the following are examples of a chemical change?

- A) copper building materials develop a green patina over time  
B) a match burns  
C) rubbing alcohol evaporates  
D) Both A and B are examples of chemical change.  
E) All of the above are examples of chemical change.

Answer: D

9) Give the mass percent of oxygen in  $\text{C}_{14}\text{H}_{19}\text{NO}_2$ .

- A) 13.72%                                      B) 8.21%                                      C) 6.00%                                      D) 72.07%

Answer: A

10) Which of the following are examples of intensive properties?

- A) mass
- B) density
- C) volume
- D) None of the above are examples of intensive properties.
- E) All of the above are examples of intensive properties.

Answer: B

11) How many moles of  $\text{PI}_3$  contain  $2.55 \times 10^{24}$  iodine atoms?

- A) 4.23 moles  $\text{PI}_3$
- B) 1.41 moles  $\text{PI}_3$
- C) 12.7 moles  $\text{PI}_3$
- D) 2.82 moles  $\text{PI}_3$
- E) 7.87 moles  $\text{PI}_3$

Answer: B

12) Identify an anion.

- A) An atom that has lost an electron.
- B) An atom that has lost a neutron.
- C) An atom that has gained a proton.
- D) An atom that has gained an electron.

Answer: D

13) Which of the following elements is a metalloid?

- A) C
- B) Sb
- C) Br
- D) Co
- E) Xe

Answer: B

14) How many atoms of oxygen are in 2.50 moles of  $\text{CO}_2$ ?

- A)  $4.52 \times 10^{24}$  atoms
- B)  $7.53 \times 10^{23}$  atoms
- C)  $5.02 \times 10^{23}$  atoms
- D)  $1.51 \times 10^{24}$  atoms
- E)  $3.01 \times 10^{24}$  atoms

Answer: E

15) A blueberry scone is an example of

- A) an element.
- B) a heterogeneous mixture.
- C) a homogeneous mixture.
- D) a compound.

Answer: B

16) How many moles are in  $2.16 \times 10^{24}$  atoms of gold?

- A) 3.59 moles
- B) 6.08 moles
- C) 0.359 moles
- D) 35.9 moles
- E) 1.79 moles

Answer: A

17) Convert  $3 \mu\text{m}$  to meters.

- A)  $3 \times 10^{-9}$  m
- B)  $3 \times 10^{-3}$  m
- C)  $3 \times 10^{-6}$  m
- D)  $3 \times 10^6$  m

Answer: C

18) Identify the compound with covalent bonds.

- A) Li                      B) NaCl                      C) CH<sub>4</sub>                      D) Ar                      E) KBr

Answer: C

19) Which of the following is a molecular compound?

- A) SrCl<sub>2</sub>                      B) LiCN                      C) LiOH                      D) P<sub>4</sub>O<sub>10</sub>                      E) ZnS

Answer: D

20) An atom of <sup>131</sup>Xe contains \_\_\_\_\_ protons.

- A) 54                      B) 185                      C) 131                      D) 77                      E) 123

Answer: A

21) How many significant figures are in 5.206 x 10<sup>4</sup> m?

- A) 8                      B) 5                      C) 7                      D) 4                      E) 3

Answer: D

22) What symbol is used to represent the factor 10<sup>-1</sup> ?

- A) M                      B) d                      C) μ                      D) m

Answer: B

23) What is the empirical formula for C<sub>8</sub>H<sub>16</sub>O<sub>4</sub> ?

- A) CHO                      B) C<sub>2</sub>H<sub>4</sub>O                      C) C<sub>2</sub>H<sub>5</sub>O                      D) CHO<sub>2</sub>                      E) CH<sub>2</sub>O

Answer: B

24) Which of the following elements is classified as a semimetal?

- A) germanium                      B) iodine                      C) uranium                      D) calcium

Answer: A

25) Which of the following elements is a halogen?

- A) F                      B) O                      C) Ag                      D) Ar                      E) Sb

Answer: A

26) Identify the compound with ionic bonds.

- A) O<sub>2</sub>                      B) CO                      C) H<sub>2</sub>O                      D) NaBr                      E) Ar

Answer: D

27) Which of the following contains the MOST atoms? You shouldn't need to do a calculation here.

- A) 10.0 g Ar                      B) 10.0 g Ba                      C) 10.0 g Rb                      D) 10.0 g Mg                      E) 10.0 g Li

Answer: E

28) Which of the following exists as a diatomic molecule?

- A) argon                      B) magnesium                      C) carbon                      D) nitrogen                      E) phosphorus

Answer: D

29) Gasoline is an example of

- A) a homogeneous mixture.                      B) an element.  
C) a compound.                      D) a heterogeneous mixture.

Answer: A

30) How many significant figures are there in the answer for the following problem?

$$57.5 + 0.9933 + 32 = ?$$

- A) one    B) two    C) three    D) four

Answer: B

31) Which of the following contains BOTH ionic and covalent bonds?

- A)  $MgSO_4$   
B)  $CaI_2$   
C)  $SF_6$   
D)  $COS$   
E) None of the above contain both ionic and covalent bonds.

Answer: A

32) Determine the mass of an object that has a volume of 88.6 mL and a density of 9.77 g/mL.

- A) 866 g    B) 98.37 g    C) 78.8 g    D) 0.110 g    E) 9.07 g

Answer: A

33) Identify the crystalline solid.

- A) plastic    B) glass    C) water    D) bleach    E) table salt

Answer: E

34) Which one of the following elements is a poor conductor of heat and electricity?

- A) iron    B) lead    C) copper    D) selenium

Answer: D

35) Write a possible molecular formula for  $C_4H_4O$ .

- A)  $C_{24}H_{24}O_6$     B)  $C_{12}H_{12}O_2$     C)  $C_8H_8O$     D)  $C_2H_2O$

Answer: A

36) What mass (in kg) does 5.01 moles of iron have?

- A) 0.632 kg    B) 0.122 kg    C) 0.820 kg    D) 0.352 kg    E) 0.280 kg

Answer: E

37) Isotopes differ in the number of

- A) gamma particles.  
B) electrons.  
C) protons and electrons.  
D) protons.  
E) neutrons.

Answer: E

38) What mass (in g) does 3.99 moles of Kr have?

- A) 211 g    B) 476 g    C) 144 g    D) 240 g    E) 334 g

Answer: E

39) Cesium belongs to the \_\_\_\_\_ group of the periodic table.

- A) alkaline earth metal    B) noble gas  
C) alkali metal    D) halogen

Answer: C

40) How many protons are in titanium?

A) 25

B) 25.9

C) 26

D) 47.9

E) 22

Answer: E