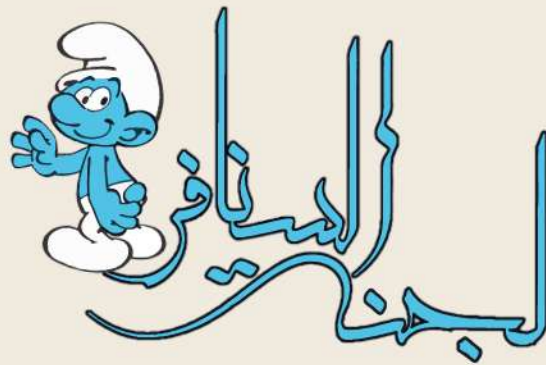خدمتكم طريق خضناه لرضى الله

2021

أسئلة سنوات
فاينال

كيمياء عامة

بسم الله الرحمن الرحيم

نقدم لكم نحن أسرة فريق

(لجنة السنافر)

مجموعة أسئلة اختبارات إلكترونية تم تجميعها خلال الفصول الماضية

سائلين المولى أن يوفقنا وإياكم لكل خير

تنويه

يوجد بعض الأسئلة عليها إجابات قد تحتمل الصواب وقد تحتمل الخطأ

فإن أصبنا فما هو إلا توفيق من الله

وإن أخطأنا فمن أنفسنا

The maximum number of electrons that can be accommodated in a subshell for which $l = 4$ is:
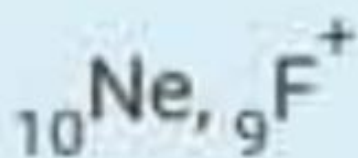
Select one:
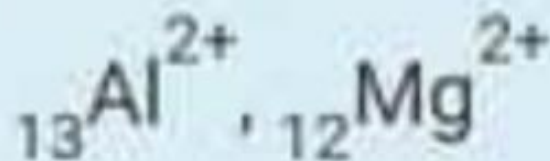
- ○ 10
- ● 18
- ○ 8
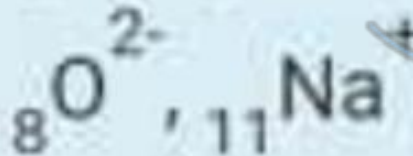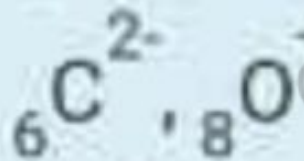- ○ 14
- ○ 6

The pair of ions having same electronic configuration is _____.

Select one:

- ○ $_9F^-$, $_7N^{2-}$
- ○ $_6C^{2-}$, $_8O^+$
- ● $_8O^{2-}$, $_{11}Na^+$
- ○ $_{13}Al^{2+}$, $_{12}Mg^{2+}$
- ○ $_{10}Ne$, $_9F^+$
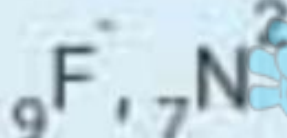
What is the molarity of the KCl salt produced in the reaction of 300 mL of 0.100 M HCl with 100 mL of 0.500 M KOH?

$HCl(aq) + KOH(aq) \rightarrow KCl(aq) + H_2O(l)$

Select one:

○ 0.0935 M

○ 0.075 M

○ 0.0325 M

○ 0.0472 M

○ 0.0667 M

What would be the atomic number of an element that might have **seven** electrons in the last **5d subshell**?
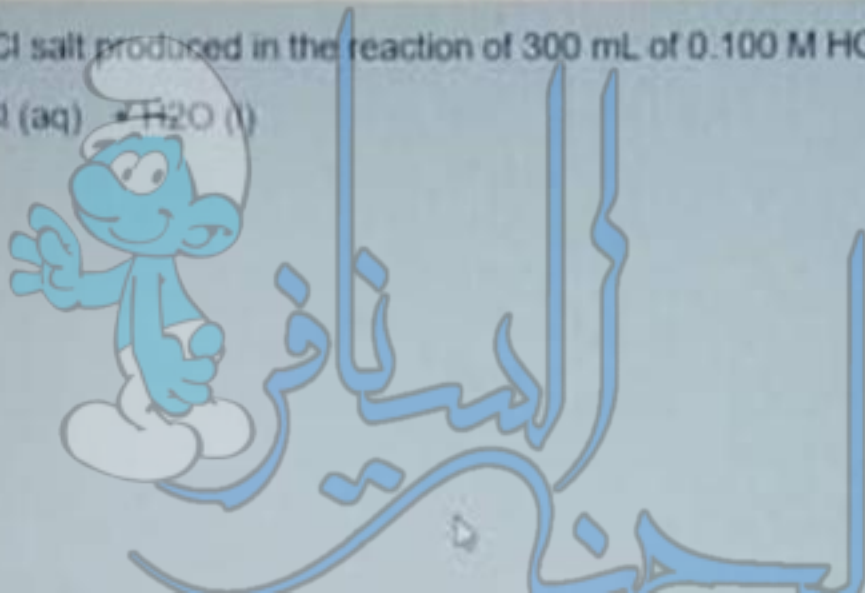
Select one:

- 99
- 97
- 78
- 95
- 77

Which is the following is an INCORRECT electron configuration?

Select one:

○ a. Se = [Ar]3d104s24p4

○ b. Fe = [Ar]3d64s2

○ c. H = 1s1

○ d. O = [Ne]2s22p4

The chemical symbol of an ion is $^{43}X^{2+}$ $(Z = 21)$. The numbers of **neutrons** and **electrons** for this ion are, **respectively**:

Select one:

- 22 and 19
- 65 and 25
- 23 and 20
- 20 and 23
- 35 and 28

Identify the INCORRECT statement below:

Select one:

a. In the photoelectric effect, photons of high energy eject electrons from a metal.

b. Light exists in particles called photons having energies directly proportional to their frequencies.

c. Red light (= 700 nm) has photons of greater energy than blue light (= 400 nm).

d. Light can be viewed as an electromagnetic wave.

e. The photoelectric effect led to the discovery of the particle-like nature of light.

Arrange the following elements in order of INCREASING atomic radii. K, Na, Mg, Cs, Cl

Select one:

a. Cs / K / Cl / Mg / Na

b. Na / Mg / Cl / K / Cs

c. Cl / Mg / Cs / K / Na

d. Cl / Mg / Na / K / Cs

e. Cl / Mg / Na / Cs / K

Which of the elements below, is a metal

A) Na (atomic no. = 11)
B) Si (atomic no. = 14)
C) B (atomic no. = 5)
D) Cl (atomic no. = 17)
E) Ar (atomic no. = 18)

Select one:

- ● A

- ○ B

- ○ C

- ○ D

- ○ E

How many atoms (total number of atoms) are found

in 3.5 mole of $K_2Cr_2O_7$

Avogadro's number = 6.022×10^{23}

A. 2.3×10^{25}

B. 7×10^{25}

C. 5×10^{25}

D. 1.4×10^{26}

E. 3.6×10^{24}

Select one:

- ● A
- ○ B
- ○ C
- ○ D
- ○ E

Which electron in the nitrogen ground state atom has the

quantum number set (n, l, m_l, m_s) equal to $(2,0,0, \frac{1}{2})$

(Atomic no. of N =7)

A.   first electron

B.   third electron

C.   fifth electron

D.   sixth electron

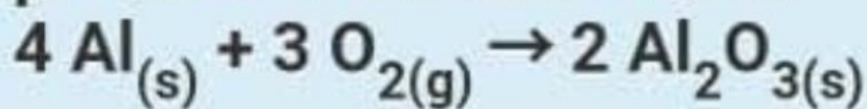E.   seventh electron

Select one:

○ A

○ B

○ C

○ D

○ E

The element X (atomic number =23) is a_____ element

with _____ unpaired electrons

A.   paramagnetic , 3

B.   paramagnetic , 5

C.   paramagnetic , 6

D.   diamagnetic , 2

E.   diamagnetic , 0

Select one:

○ A

○ B

○ C

○ D

○ E

Aluminum reacts with oxygen to produce aluminum oxide.

$$4\,Al_{(s)} + 3\,O_{2(g)} \rightarrow 2\,Al_2O_{3(s)}$$

If 10.0 moles of Al react with excess O_2, how many moles of Al_2O_3 can be formed?

A. 1.5 mol
B. 2.0 mol
C. 2.5 mol
D. 5.0 mol
E. 3.0 mol

Select one:

○ A

○ B

○ C

● D

○ E

$1s^2\ 2s^2\ 2p^6\ 3s^2$ is a ground state configuration for a

A. Transition element
B. Alkali metal
C. Halogen
D. Inner transition element
E. Alkaline earth metal

Select one:

- A
- B
- C
- D
- E

Which element has the greatest IE_1 in period 3 ?

A.   Ne

B.   Ar

C.   Li

D.   Na

Select one:

◉ A

○ B

○ C

○ D

How many moles is 20 g of Ca?
(Atomic weight of Ca = 40 g/mol)

A.   1.0 mole

B.   0.5 mole

C.   2.5 mole

D.   2.0 mole

E.   1.5 mole

Select one:

○ A

◉ B

○ C

○ D

○ E

For the equation: $2C_3H_7OH + 9O_2 \rightarrow 6CO_2 + 8H_2O$

If 8 g C_3H_7OH (60 g/mol) are allowed to react with 40 g O_2 (32g/mol)

The mass of CO_2 (44g/mol) produced in grams is:

A. 13.75
B. 18.33
C. 22.91
D. 26.4
E. 17.6

Select one:

○ A

○ B

○ C

○ D

● E

Calculate the mass percentage of oxygen (O) in

of $Al(NO_3)_3$

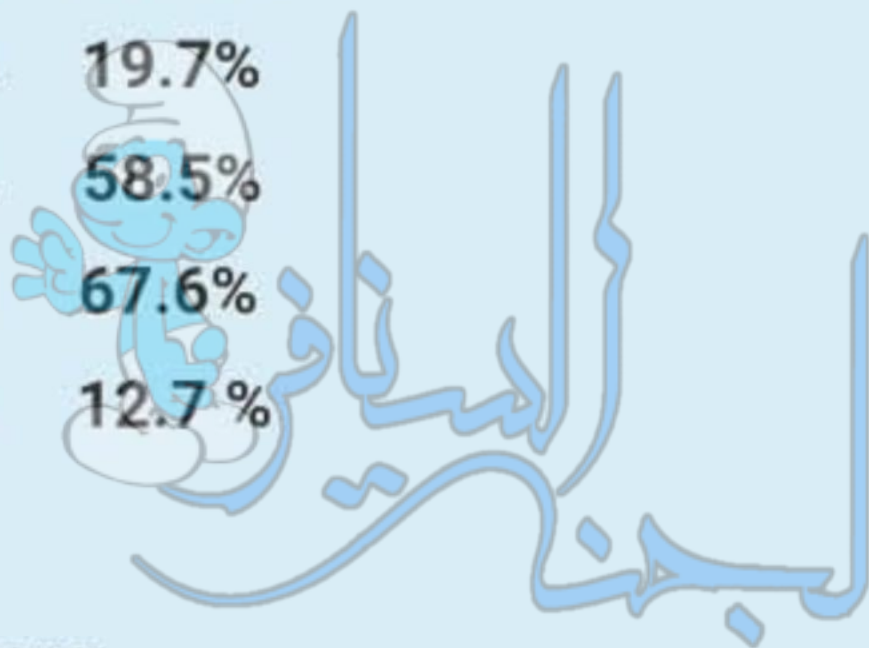(Atomic weights: Al $=27$, N=14, O $=16$ g/mol)

A.   17.1%

B.   19.7%

C.   58.5%

D.   67.6%

E.   12.7 %

Select one:

○ A

○ B

○ C

● D

○ E

The quantum number that describes the shape of an orbital is:

A. Principle quantum number
B. Magnetic quantum number
C. Secondary (angular momentum) quantum number
D. Spin quantum number
E. None of the above

Select one:

- A
- B
- C
- D
- E

Which of the following, is the atomic number for an element that belongs

to period 5, group 3B in the periodic table?

A. 39

B. 42

C. 41

D. 57

E. 48

elect one:

A

B

C

D

E

How many electrons are there in the valence shell of the Si^{2+} ion?

(atomic number =14)

A. 2

B. 8

C. 7

D. 5

E. 4

Select one:

◉ A

○ B

○ C

○ D

○ E

The molar mass of compound Mn_2O_x = 174 g/mol

Atomic weights: Mn= 55, O = 16 g/mol

What is the value x?

A. 3

B. 5

C. 7

D. 4

E. 6
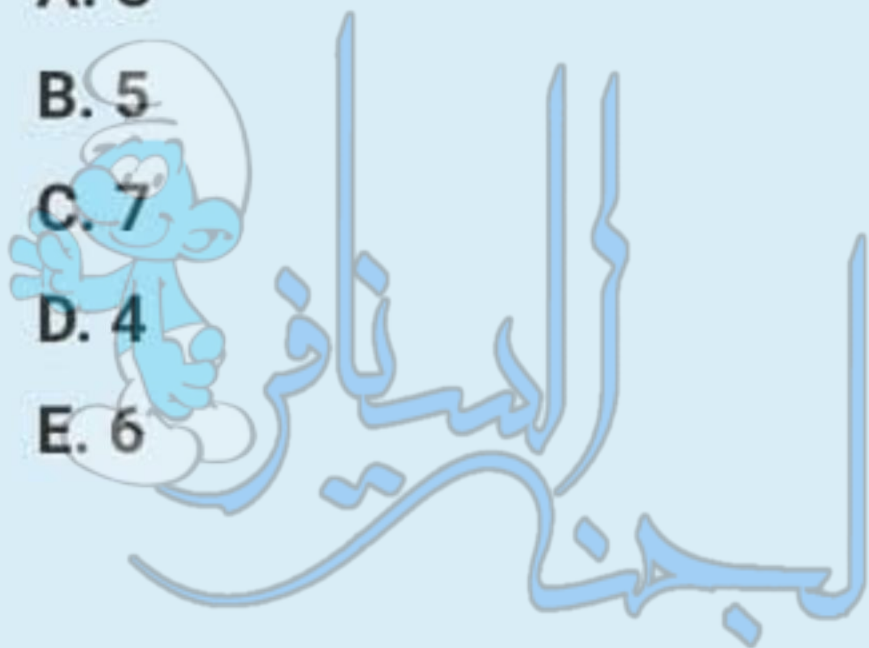
Select one:

○ A

○ B

○ C

● D

○ E

Aluminum reacts with oxygen to produce aluminum oxide.
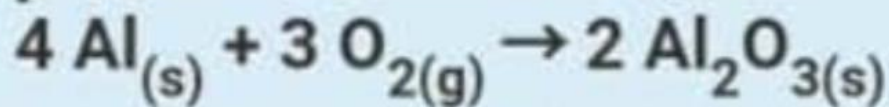
$$4\,Al_{(s)} + 3\,O_{2(g)} \rightarrow 2\,Al_2O_{3(s)}$$

If 10.0 moles of Al react with excess O_2, how many moles of Al_2O_3 can be formed?

A. 1.5 mol
B. 2.0 mol
C. 2.5 mol
D. 5.0 mol
E. 3.0 mol

Select one:

○ A
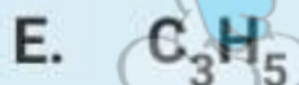
○ B

○ C

● D

○ E

Find the empirical formula for a compound that is contains

87.8 % of "C" and 12.2 % of "H"

(Atomic weights: C =12 g/mol, H= 1 g/mol)

A. C_2H_5

B. C_3H_8

C. C_2H_3

D. C_4H_{11}

E. C_3H_5

Select one:

○ A

○ B

○ C

○ D

◉ E