When the following equation is balanced and written with the smallest whole number coefficients, what is the coefficient of O_2?

$$C_6H_6(l) + O_2(g) \rightarrow CO_2(g) + H_2O(g)$$

- a. 5
- b. 1
- c. 3
- d. 13
- e. 15

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$$2C_6H_6 + 15O_2 \rightarrow 2*6\,CO_2 + 2*3\,H_2O$$

A 3.5 g of sulfur reacts with 4.5 g of fluorine to form only sulfur hexafluoride (SF_6), what mass of SF_6 is formed?

$S(s) + 3F_2(g) \rightarrow SF_6(g)$

- a. 16 g
- b. 8.0 g
- c. 5.8 g
- d. 3.2 g
- e. 12 g

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3.5 g

$$S + 3F_2 \longrightarrow SF_6$$

3.5 g 4.5 g

$$S: \frac{3.5\ g}{32.065\ g/mol} \times \frac{1\ mol\ SF_6}{1\ mol\ S} = 0.109\ mol\ SF_6$$

$$F_2: \frac{4.5\ g}{37.997\ g/mol} \times \frac{1\ mol\ SF_6}{3\ mol\ F_2} = 0.0395\ mol\ SF_6$$

L.R

$$\text{mass } SF_6 = 0.0395 \times 146.06$$

$$= 5.8\ g$$

Time left

When the equation __ $C_5H_6N_2OS(s)$ + __ $O_2(g)$ → __ $CO_2(g)$ + __ $H_2O(l)$ + __ $N_2(g)$ + __ $SO_2(g)$; is balanced, the sum of all the coefficients (simplest whole number) is

- a. 18.
- b. 24.
- c. 21.
- d. 20.
- e. 19.

Next

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$$C_5H_6N_2O_8 + 7O_2 \rightarrow 5CO_2 + 3H_2O + N_2 + 8O_2$$

$$1 + 7 + 5 + 3 + 1 + 1 = 18$$

How many atoms are present in 495 g of KPF_6?

- a. 1.62×10^{21}
- b. 1.21×10^{26}
- c. 1.29×10^{25}
- d. 2.38×10^{25}
- e. 2.69×10^{21}

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No. of atoms = mole × N_A

$$= \frac{495}{183.92} \times 6.022 \times 10^{23}$$

$$= 16.2 \times 10^{23}$$

$$= 1.62 \times 10^{24}$$

1) A temperature of 400 K is the same as_____ °F.

A) 261

B) 286

C) 88

D) 103

Select one:

- A
- B
- C
- D

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$400\,K \longrightarrow F^\circ$

$K = C^\circ + 273.15$

$C^\circ = 400 - 273.15$

$C^\circ = 127$

$F^\circ = 9/5 * C^\circ + 32$

$= \frac{9}{5} \times 127 + 32$

$F^\circ = 261$ [A]

Time left 0:28:02

A piece of metal (mass = 18.300 g) is placed in 11.00 mL of chloroform (d = 1.498 g/mL) in a 25-mL graduated cylinder. The chloroform level increases to 15.46 mL. The best value for density of this metal from these data is

- a. 1.18 g/mL.
- b. 4.103 g/mL.
- c. 2.74 g/mL.
- d. 4.10 g/mL.
- e. 8.15 g/mL.

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- a pice of metal (mass = 18.300 g)
- placed in 11.00 ml of chloroform (d = 1.498 g/ml)

V_1

- The chloroform level increases to 15.46 ml

V_2

$$d = \frac{mass}{V_2 - V_1} = \frac{18.300g}{(15.46 - 11.00)\,ml} = 4.103\ g/ml$$

[B]

Time left 0:34:59

Pure copper may be pr
reaction of copper(I) sulfide with oxygen gas as follows: $Cu_2S(s) + O_2(g) \rightarrow 2Cu(s) + SO_2(g)$; If the reaction of 0.530 kg of copper(I) sulfide with excess oxygen produces 0.290 kg of copper metal, what is the percent yield?

- a. 54.7 %
- b. 137 %
- c. 274 %
- d. 39.9 %
- e. 68.5 %

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$$\underset{0.530\,kg}{\underline{Cu_2S}} + O_2 \longrightarrow \underset{[0.290\,kg]}{\underline{2Cu}} + SO_2$$

[L.R] → actual yield

Theretical Yield $\Rightarrow \dfrac{530.\,g\ of\ Cu_2S}{159.16\ g/mol} \times \dfrac{2\ mol\ Cu}{1\ mol\ Cu_2S} * 63.536\ g/mol$

$= 423\ g\ of\ Cu$

Percent Yield $= \dfrac{290.\,g}{423\,g} \times 100\% = 68.5\%$ [C]

Time le

Styrene's empirical formula is CH. What mass of styrene contains 2.95×10^{21} atoms of hydrogen? The molar mass of styrene is 104 g/mol

- a. 0.00489 g
- b. 0.0391 g
- c. 0.0587 g
- d. 0.0636 g
- e. 0.509 g

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E.F = CH (M.W = 13 g/mol)

M.W [M.F] = 104 g/mol $\rightarrow L = \frac{104}{13} = 8$

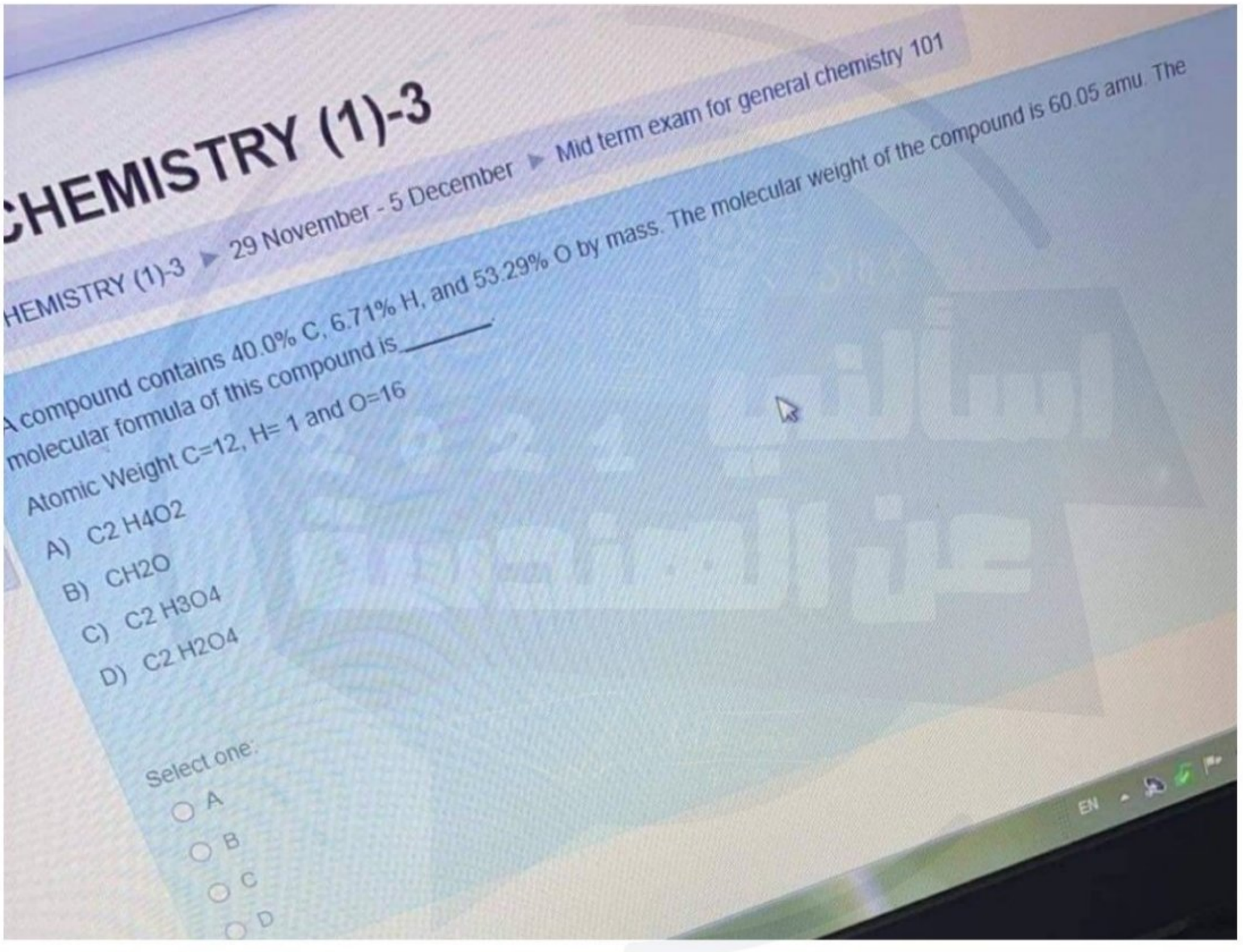
$M.F = 8(CH)$

$= C_8H_8$

$$\rightarrow \frac{2.95 \times 10^{21} \text{ atom}}{6.022 \times 10^{23} \text{ atom/mol H}} \times \frac{1 \text{ mol } C_8H_8}{8 \text{ mol H}} = \left[6.13 \times 10^{-4} \text{ mol } C_8H_8\right]$$

mass of $C_8H_8 = 6.13 \times 10^{-4} * 104$

$= 0.0637$ g



Scanned with CamScanner

	C	H	O
mass	40.0	6.71	53.29
mole	3.33	6.71	3.33
Ratio	1	2	1

$\rightarrow$ E.F = CH_2O [M.W = 30 g/mol]

$\rightarrow$ M.F : $1 = \frac{60.05}{30} = 2$

M.F = 2 [CH_2O]

= $C_2H_2O_2$

Time left 0:58:30

Question **2**

Not yet answered

Marked out of 1.0

Flag question

Which one of the following samples has the greatest mass?

- a. 9.3 mol of krypton, Kr
- b. 1.6 mol of formaldehyde, CH_2O
- c. 4.2 mol of ammonia, NH_3
- d. 4.0 mol of iodine vapor, I_2
- e. 0.37 mol of camphor, $C_{10}H_{16}O$

Scanned with CamScanner

a. $9.3 \times 83.798 = 779.32\ g$

b. $1.6 \times 30.031 = 48.05\ g$

c. $4.2 \times 17.031 = 71.53\ g$

d. $4.0 \times 253.809 = 1015.24\ g$

e. $0.37 \times 152.23 = 56.33\ g$

Time left 0:25:

Question **14**

Not yet answered

Marked out of 1.0

Flag question

Four samples were weighed using three different balances. (All are as accurate as the precision indicates.) The masses are 0.94 kg, 58.2 g, 1.55 g, and 250 mg. The total mass should be reported as

- a. 1.0 kg.
- b. 1.000 kg.
- c. 1.00000 kg.
- d. 1.0000 kg.
- e. 1.00 kg.

Scanned with CamScanner

0.941kg , 58.2g , 1.55g , 250mg

↳ 0.941kg , $\frac{58.2}{1000}$ kg , $\frac{1.55}{1000}$ kg , $\frac{250}{10^6}$ kg

total mass = 0.998 ≈ 1.00 kg

The oxidation number of Cl in $NaClO_4$ is

- a. +1
- b. +4
- c. +7
- d. +3
- e. +2

of

Next page

$$NaClO_4$$

$$\therefore = (+1) + (4 * -2) + X$$

$$X = +7$$

GENERAL CHEMISTRY 1 /جميع الشعب

Question 15

Not yet answered

Marked out of 1.0

Flag question

The oxidation number of Br in $NaBrO_2$ is

- a. +3
- b. +4
- c. +5
- d. +1
- e. +2

Clear my choice

$NaBrO_2$

$\therefore = (+1) + (2 * -2) + X$

$X = +3$

ERAL CHEMISTRY I /جميع الشعب

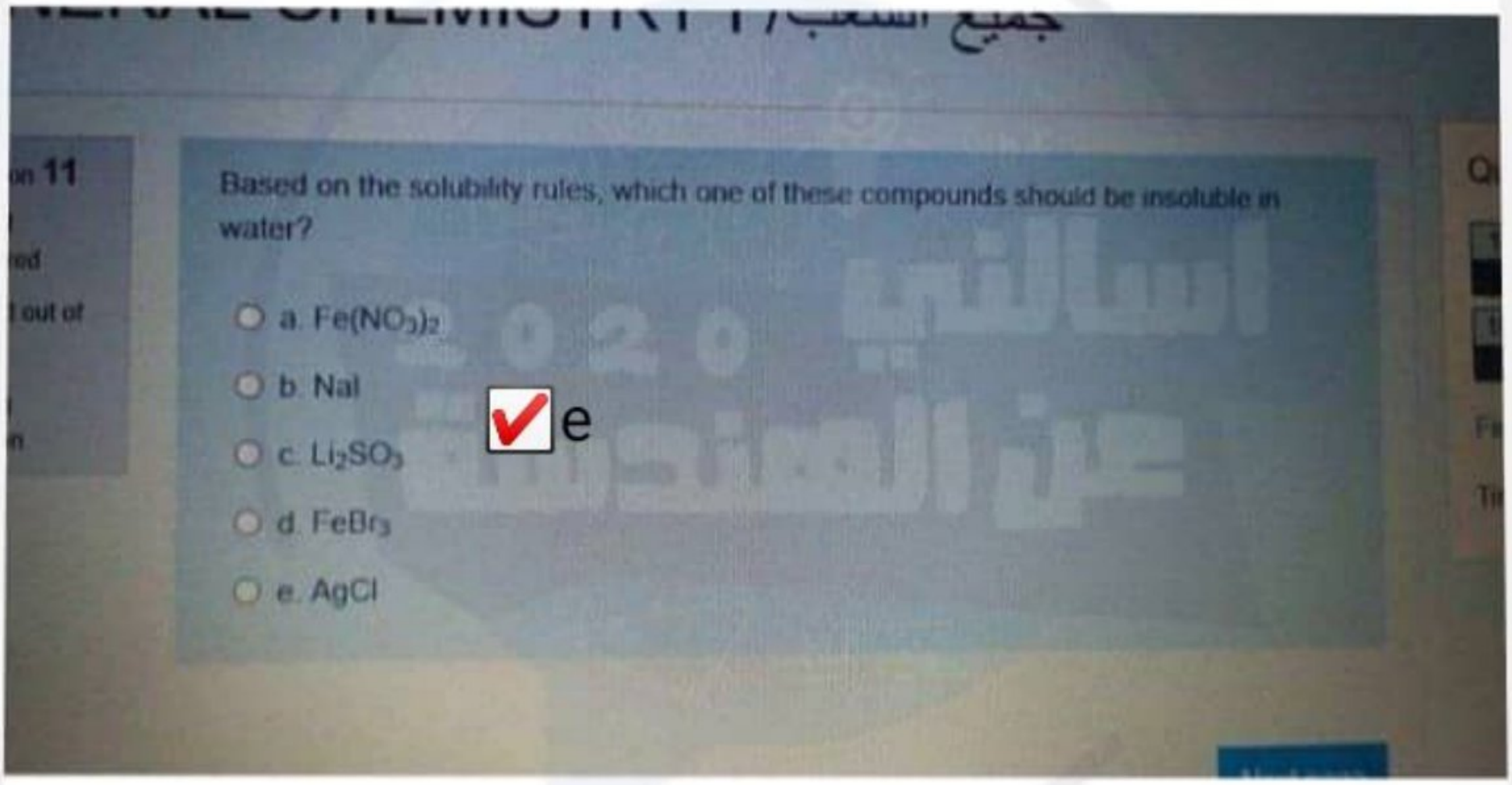
Which one of these equations describes a redox reaction?

- a. $CaBr_2(aq) + H_2SO_4(aq) \rightarrow CaSO_4(s) + 2HBr(g)$
- b. $CO_3^{2-}(aq) + HSO_4^-(aq) \rightarrow HCO_3^-(aq) + SO_4^{2-}(aq)$
- c. $2KBr(aq) + Pb(NO_3)_2(aq) \rightarrow 2KNO_3(aq) + PbBr_2(s)$
- d. $2Mg(s) + O_2(g) \rightarrow 2MgO(s)$
- e. $H^+(aq) + OH^-(aq) \rightarrow H_2O(l)$

oxidation

$$2Mg + O_2 \rightarrow 2\overset{+2}{Mg}\overset{-2}{O}$$

reduction



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GENERAL CHEMISTRY I /جميع الشعب

Time left 0:27:58

Question **13**

Not yet answered

Marked out of 1.0

Flag question

An impure sample of benzoic acid is titrated with 0.9855 M NaOH. A 3.412-g sample requires 24.43 mL of titrant to reach the endpoint. What is the percent by mass of benzoic acid in the sample? $C_6H_5COOH(aq) + NaOH(aq) \rightarrow NaC_6H_5COO(aq) + H_2O(l)$

- a. 0.01971 %
- b. 2.407 %
- c. 19.71 %
- d. 86.18 %
- e. 100 %

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Quiz navigation

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20							

Finish attempt ...

$C_6H_5COOH + NaOH$

$C_6H_5COOH + NaOH \rightarrow NaC_6H_5COO + H_2O$

g ?! ← 0.9855M

24.43ml

$0.9855 \times 0.02443 \times \frac{1mol}{1mol} \times 122.12 = 2.940g$ of C_6H_5COOH

$C_6H_5COOH\% = \frac{2.940}{3.412} \times 100\%$

$= 86.17\%$

GENERAL CHEMISTRY I /جميع الشعب

Question **10**

Not yet answered

Marked out of 1.0

Flag question

A solution contains 6.00% (by mass) or (mass/mass) NaBr (sodium bromide) (molar mass = 102.89 g/mol). The density of the solution is 1.30 g/cm^3. What is the molarity of the NaBr solution?

- a. 0.758
- b. 0.305
- c. 0.583
- d. 0.105
- e. 0.280

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Quiz navigation

1 2 3 4 5 6 7 8 9

10 11 12 13 14 15

Finish attempt ...

Time left **0:26:33**

Solution Contains 6% NaBr [M.w = 102.89]

[base : 100 g solution]

6% × 100 = 6 g of NaBr

- mole NaBr = $\frac{6}{102.89}$ = 0.0583

- Volume Soln. = $\frac{100\ g}{1.30\ g/cm^3}$ = 76.9 cm^3 = 76.9×10^{-3} L

- $M = \frac{0.0583}{76.9 \times 10^{-3}}$ = 0.758 M

GENERAL CHEMISTRY I /جميع الشعب

Question 9

Not yet answered

Marked out of 1.0

Flag question

Which one of these equations describes a redox reaction?

- a. $Fe_2O_3(s) + 3CO(g) \rightarrow 2Fe(s) + 3CO_2(g)$
- b. $H^+(aq) + OH^-(aq) \rightarrow H_2O(l)$
- c. $2KBr(aq) + Pb(NO_3)_2(aq) \rightarrow 2KNO_3(aq) + PbBr_2(s)$
- d. $CO_3^{2-}(aq) + HSO_4^-(aq) \rightarrow HCO_3^-(aq) + SO_4^{2-}(aq)$
- e. $CaBr_2(aq) + H_2SO_4(aq) \rightarrow CaSO_4(s) + 2HBr(g)$

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Quiz navigation

Finish attempt ...

Time left **0:28:05**

reduction

+3 +2 0 +4

a. $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$

oxidation

GENERAL CHEMISTRY I /جميع الشعب

Question **11**

Not yet answered

Marked out of 1.0

Flag question

Based on the solubility rules, which one of these compounds should be soluble in water?

- a. $PbSO_4$
- b. HgI_2
- c. $BaSO_4$
- d. $CoCl_2$
- e. $CaSO_4$

✔ d

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Quiz navigation

1 2 3 4 5 6 7 8 9

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Finish attempt ...

Time left **0:24:40**

GENERAL CHEMISTRY I /جميع الشعب

Question **14**

Not yet answered

Marked out of 1.0

Flag question

A stock solution of potassium dichromate, $K_2Cr_2O_7$ (Molar mass= 294.185 g/mol) is made by dissolving 84.50 g of the compound in 1 L of solution. How many milliliters of this solution are required to prepare 1 dm^3 of 0.100 M $K_2Cr_2O_7$

- a. 348
- b. 201
- c. 430
- d. 52.2
- e. 522

Next page

Quiz navigation

Finish attempt ...

Time left **0:16:58**

$$\text{mole} = \frac{84.50}{294.185} = 0.2872$$

$$M = \frac{\text{mole}}{\text{volume}} = \frac{0.2872}{1} \text{ mol/L}$$

mole before = mole after

$$M_1 \times V_1 = M_2 \times V_2$$

$$0.2872 \times V_1 = 0.100 \times 1\text{L}$$

$$V_1 = 0.348\text{L}$$

$$= 348\text{mL}$$

GENERAL CHEMISTRY I /جميع الشعب

Question **6**

Not yet answered

Marked out of 1.0

Flag question

The oxidation number of N in $NaNO_2$ is

- a. +6
- b. +3
- c. +4
- d. +1
- e. +5

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Quiz navigation

1 2 3 4 5 6 7 8 9
10 11 12 13 14 15

Finish attempt ...

Time left **0:30:15**

$NaNO_2$

$\therefore = (+1) + (2 \times -2) + X$

$X = +3$

Time left 0:16:38

Question **17**

Not yet answered

Marked out of 1.0

Flag question

The average atomic mass of Eu is 151.96 amu. There are only two naturally occurring isotopes of europium, ^{151}Eu with a mass of 151.0 amu and ^{153}Eu with a mass of 153.0 amu. The natural abundance of the ^{131}Eu isotope must be approximately

- a. 20%.
- b. 40%.
- c. 50%.
- d. 60%.
- e. 80%.

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Time left 0:32:06

Question **11**

Not yet answered

Marked out of 1.0

Flag question

A given hydrocarbon is burned in the presence of oxygen gas and is converted completely to water and carbon dioxide. The mole ratio of H_2O to CO_2 is 1.125:1.00. The hydrocarbon could be

- a. C_2H_6.
- b. C_3H_4.
- c. CH_4.
- d. C_2H_2.
- e. C_4H_9.

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