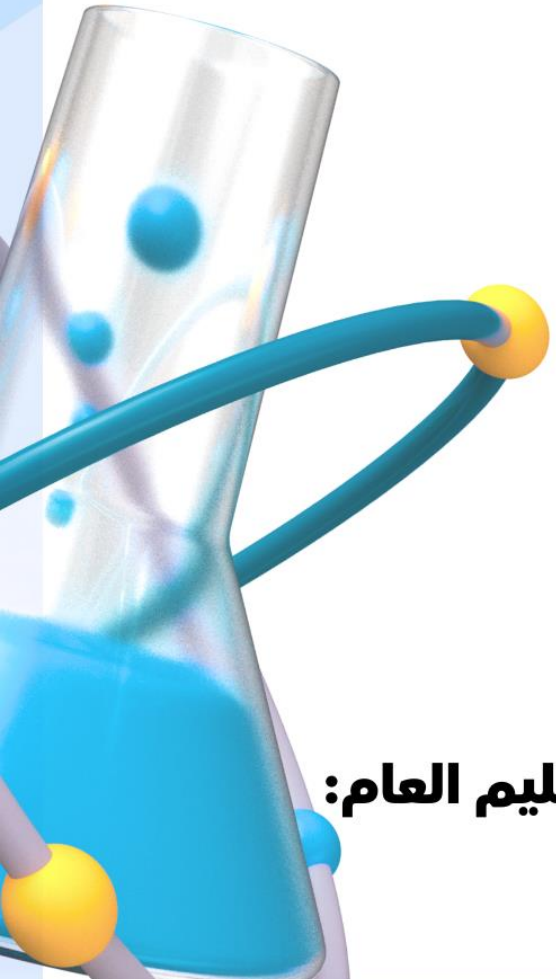
الإدارة المركزية للتعليم العام
مكتب تنمية مادة العلـــــوم

CHEMISTRY

2nd secondary
first term

HOME PERFORMANCE



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2026

week

4

Home performance (Week 4)

Q1/ choose the correct answer:-

1-100 ml of 0.5 M magnesium hydroxide is mixed with 200 ml of 0.6 M hydrochloric acid according the following equation:-

$$2HCl + Mg(OH)_2 \rightarrow MgCl_2 + 2H_2O$$

- The concentration of the excess anion after the reaction =…….

(a) 0.2 M
(b) 0.475 M
(c) 0. 0633 M
(d) 0. 316 M

2-The volume of 2M sulphuric acid required to prepare 250 mL of 0.25 M solution=…

(a) 32 mL
(b) 31.250 L
(c) 0.0312 mL
(d) 31.250 mL

3- How many grams of sodium phosphate required preparing 2L of 0.3 M solution? (Na=23 , P=31 , O=16)

(a) 98.4 g
(b) 9.84 g
(c) 4.85 g
(d) 49.2 g

4- On adding 200 mL of 0.2 M sulphuric acid to to 300 mL of 0.2 M of calcium hydroxide according the following equation:-

$$H_2SO_4 + Ca(OH)_2 \rightarrow Ca\ SO_4 + 2H_2O$$

- the molarity of unreacted substance=……

(a) 0.080 M
(b) 0.040 M
(c) 0.066 M
(d) 0.100M

5- In a molar solution of sodium chloride every 100 mL of the solutions contains ……..grams of the salt

(a) 58.5
(b) 5.85
(c) 0.10
(d) 0.01

6- If the molar concentration of aluminum ions, Al^{3+}, in a solution of aluminum sulfate, $Al_2(SO_4)_3$, is 0.60 M, what is the molarity of the salt solution?

(a) 0.90 M
(b) 1.20 M
(c) 0.60 M
(d) 0.30 M

7- What is the mass of calcium chloride needed to prepare 2.0 L of a solution that has a chloride ion (Cl^-) concentration of 0.50 M? ($CaCl_2$ =111 g/mol)

(a) 27.75 g
(b) 13.9 g
(c) 55.5 g
(d) 111.0 g

8- 100 mL sample of 0.50 M lithium sulfate (Li_2SO_4) is diluted to a final volume of 400 mL. What is the final molar concentration of lithium ions, Li^+?

(a) 0.125 M
(b) 0.50 M
(c) 0.25 M
(d) 0.0625 M

9- Which of the following solutions contains the lowest concentration of sodium ions (Na^+)?

(a) 0.15 M Na_3PO_4
(b) 0.40 M NaCl
(c) 0.30 M NaBr
(d) 0.20 M Na_2SO_4

10- The volume of water required to dilute 1 Liter of solution from 0.3 molar To 0.1 M equal…….

(a) 1 L
(b) 1.5 L
(C) 2 L
(d) 3 L

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WEEKLY ASSESSMENTS

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Weekly assessment (Week-4)

Question (1):-

1- **"The relationship $M_1 \times V_1$ (before dilution) = $M_2 \times V_2$ (after dilution) is used to calculate the concentration of the solution after dilution, despite the change in concentration".**

- **Explain the previous statement in light of your studies.**

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2- **One of your friends added 147.35 gm of glucose sugar to 150 mL of water, resulting in a saturated 5.05 M solution(molar mass of glucose=180 g/mol)**
-How many milliliters of water would you advise your friend to add to dissolve the remaining glucose without changing the concentration of the solution?

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3- **15 ml of 0.2 M hydrochloric acid solution is added to 0.212 gm of sodium Carbonate according to the following equation: (Na=23 , C = 12 , O=16)**

$$Na_2CO_3 + 2HCl \rightarrow 2NaCl + H_2O + CO_2$$

-Calculate the concentration of formed sodium chloride in the solution.

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Question (2):-

1- **From the previous figure:-**

(a) Calculate the concentration of the solution resulting from adding the entire contents of both bottles to the glass beaker.

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(b) Calculate the concentration of ions in the produced solution in the glass beaker.

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(C) How many moles of sulphuric acid required to neutralize the produced solution in the beaker?

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2- How many grams of barium chloride ($BaCl_2$) are needed to obtain 500 mL of a solution with a chloride ion concentration of 0.5 M? (Ba=137 , Cl =35.5)

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3- How many moles of anions dissolved in 100 mL, 0.1M aluminum chloride solutions?

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Question (3):-

1- Calculate the molarity of each of the following:

(a) Ions produced by dissolving 14.2 gm of sodium sulfate in 100mL of pure water. (Na=23, S=32, O=16)

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(b) Solution of aluminum sulfate with an ions molarity of 0.2M.

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(c) Solution produced by dissolving 17 gm of silver nitrate in 500 mL of Distilled water. (Ag =108, N =14, O=16)

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(d) Cations in a molar solution of copper sulfate

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Question (4):- Choose the correct answer:-

1-By dilution of sulphuric acid solution from 1M to 0.5M so the number of Moles will……

(a) Decrease to half

(b) Decrease to quarter

(C) Remain the same

(d) Increase to twice

2- Volume (V) of a sodium sulphate solution, its concentration = (M) , its volume is tripled by distilled water, so the concentration of sodium ions in the resulting solution = ……

(a) M/3

(b) M/2

(C) M/4

(d) 2M/3

3- The volume of water required to dilute 1L sodium chloride solution from 0.3 M to 0.1 M equal……..

(a) 1 L

(b) 1.5 L

(C) 2 L

(d) 3 L