

THE BRIGADE SCHOOL UNIT TEST II

(2020-21)

Total points **34/40** ?

Class : 10
Time : 30 Minutes

Subject : Chemistry

Max Marks : 40

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Instructions :-

0 of 0 points

1. Select your name, school and section correctly.
2. This paper consists of 35 questions for 40 marks.
3. All the questions are compulsory.
4. Ensure that you have completed and revised your paper before submission.
5. You can attempt your paper only once.

Name : *

Manan Y Mehta ▼

Class/Section : *

10 A ▼

School : *

TBSG ▼



- ✓ 1. A compound X and Y has the empirical formula XY_2 . Its vapour density $\frac{1}{1}$ is equal to its empirical formula weight. Determine its molecular formula. *

☐ XY_4

☒ X_2Y_4



☐ X_4Y_2

☐ XY

- ✓ 2. The vapour density of Carbon dioxide [$C=12$, $O=16$] is: *

1/1

☐ 32

☐ 16

☐ 44

☒ 22



- ✓ 3. The role of sulphuric acid during the reaction of concentrated sulphuric acid with phosphorus is as: *

1/1

☐ Dilute acid

☒ Oxidizing agent



☐ Non-volatile acid

☐ Dehydrating agent

✓ 4. The solution which liberates sulphur dioxide gas, from sodium sulphite 1/1
is: *

- ☐ Sodium hydroxide solution
- ☐ A weak acid
- ☒ Dilute sulphuric acid ✓
- ☐ Concentrated sulphuric acid

✓ 5. The cation discharged at the cathode most readily is: * 1/1

- ☒ Cu^{2+} ✓
- ☐ Fe^{2+}
- ☐ Pb^{2+}
- ☐ H^{1+}

✓ 6. Identify the incorrect statement related to electroplating of an article: 1/1
*

- ☐ The article to be electroplated is placed at the cathode.
- ☒ A.C. current should be used. ✓
- ☐ The metal to be plated on the article is always made the anode.
- ☐ A low current should be used for a longer time



✓ 7. The current flow through an electrolyte is due to the movement of : * 1/1

☐ Electrons

☐ Holes

☒ Ions



☐ None of the above

✓ 8. Calculate the percentage of oxygen in Ammonium nitrate. [N=14, H=1, O=16] * 1/1

☐ 62 percent

☐ 65 percent

☒ 60 percent

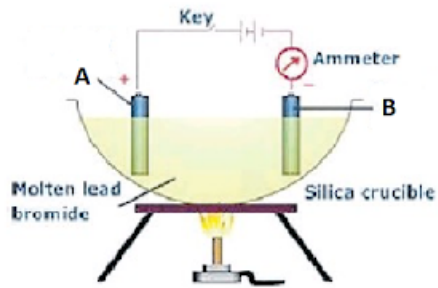


☐ 62.5 percent



✓ 9. State your observation of the experiment given below: *

1/1



- ☐ At A- silvery grey lead metal is deposited and at B-reddish brown fumes of bromine vapours formed
- ☒ At B- silvery grey lead metal is deposited and at A-reddish brown fumes of bromine vapours are formed ✓
- ☐ At B- silvery grey bromine metal is deposited and at A-reddish brown fumes of lead vapours formed
- ☐ At A- silvery grey lead metal is deposited and at B-greenish yellow fumes of bromine vapours formed

✓ 10. The cation of which salt forms milky white precipitate on addition of NaOH solution but forms no precipitate when NH_4OH solution is added? 1/1

*

- ☐ Copper
- ☒ Calcium ✓
- ☐ Zinc
- ☐ Ammonium

✗ 11. Concentrated sulphuric acid is kept in air tight bottles in the laboratory, because it is: *

0/1

- ☐ Hygroscopic and absorbs moisture from the atmosphere, don't changes its state
- ☐ Deliquescent and absorbs moisture, changes its state
- ☒ Hygroscopic and absorbs moisture from the atmosphere, changes its state ✗
- ☐ Efflorescent and lose their moisture, changes to amorphous state.

Correct answer

- ☒ Hygroscopic and absorbs moisture from the atmosphere, don't changes its state

✓ 12. If the Empirical formula of a compound is CH and it has a vapour density of 13, find the molecular formula of the compound. *

1/1

- ☐ C₂H₄
- ☒ C₂H₂ ✓
- ☐ CH₄
- ☐ C₂H₆

✓ 13. The empirical formula of Octane is: *

1/1

- ☐ C₄H₄
- ☐ C₄H₈
- ☐ CH
- ☒ C₄H₉ ✓



✓ 14. Dilute sulphuric acid will produce white precipitate when added to a solution of: * 1/1

- ☒ Lead nitrate ✓
- ☐ Copper nitrate
- ☐ Zinc nitrate
- ☐ Sodium nitrate

✗ 15. Dilution of concentrated acid is done only by addition of acid to water, because: * 0/1

- ☒ The evolved heat is dissipated in the water itself. ✗
- ☐ The water is in bulk and the acid being heavier settles down.
- ☐ The spurting of the acid is minimized.
- ☐ All of the above.

Correct answer

- ☒ All of the above.

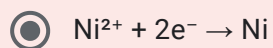
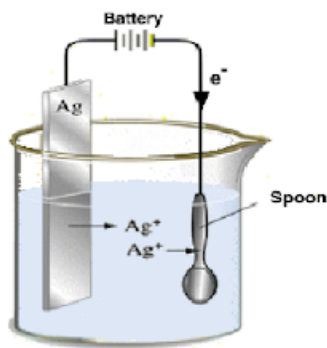
✓ 16. Concentrated sulphuric acid is used in the preparation of hydrogen chloride because : * 1/1

- ☒ It is a non-volatile acid ✓
- ☐ It is a volatile acid
- ☐ It is a strong dehydrating agent
- ☐ It is acidic in nature



✗ 17. When electroplating nickel with silver, which one of the following equations represents the reaction at the cathode? *

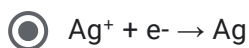
0/1



✗



Correct answer



✓ 18. Mr. Ramu wants to electroplate his key chain with nickel to prevent rusting. For this electroplating the cathode and anode used are : *

1/1

☒ Cathode - Key chain, Anode - Nickel plate

✓

☐ Anode - Key chain, Cathode - Nickel plate

☐ Cathode - Key chain, Anode - Silver plate

☐ Anode - Key chain, Cathode - Silver plate



✓ 19. Identify the gas which turns moist potassium iodide paper brown : * 1/1

☐ Chlorine

☒ Nitrogen dioxide ✓

☐ Hydrogen sulphide

☐ Hydrogen chloride

✓ 20. The particles present in strong electrolytes are : * 1/1

☐ Only molecules

☒ Mainly ions ✓

☐ Ions and molecules

☐ Only atoms

✓ 21. The oxidized product obtained when sulphur reacts with conc.sulphuric acid is: * 1/1

☐ Hydrogen sulphide

☒ Sulphur dioxide ✓

☐ Sulphur trioxide

☐ Hydrogen sulphite



✓ 22. Pick the odd one out with proper reason : Cl_2 , SO_2 , H_2S , O_2 *

1/1

- ☐ SO_2 - cannot be dried using conc. H_2SO_4 because the acid reacts with SO_2
- ☒ H_2S - cannot be dried using conc. H_2SO_4 because the acid reacts with H_2S ✓
- ☐ Cl_2 - Can be dried using conc. HCl
- ☐ O_2 - can be dried using conc. HCl because the acid does not reacts with H_2S

✓ 23. A solid deposit of element R is formed at the cathode when an aqueous solution containing ions of R is electrolysed. Which statement about element R is correct? *

1/1

- ☒ Element R is below hydrogen in the reactivity series. ✓
- ☐ R gains electrons to form ions at the cathode.
- ☐ Element R forms negatively charged ions.
- ☐ Ions of R loses electrons at the cathode.

✓ 24. When copper sulphate solution is electrolysed using copper electrodes (i) the anode diminishes in mass, (ii) the blue colour of the copper sulphate solution gets fades (iii) the electrodes are said to be "active" Which of the above statements is/are correct? *

1/1

- ☐ (i) and (ii)
- ☒ (i) and (iii) ✓
- ☐ (i) only
- ☐ (ii) and (iii)



✓ 25. Identify the weak electrolyte from the following: *

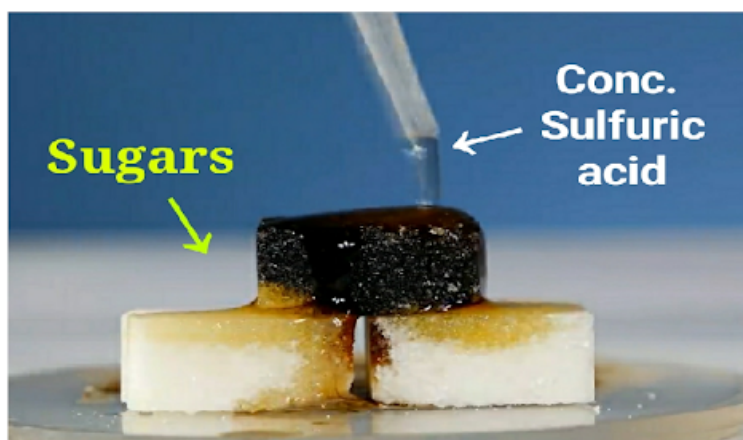
1/1

- ☐ Sodium Chloride solution
- ☐ Dilute Hydrochloric acid
- ☐ Dilute Sulphuric acid
- ☒ Sodium Carbonate solution



✓ 26. Which property of conc.Sulphuric acid is observed in the given diagram : *

1/1

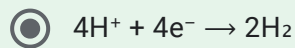


- ☐ Drying agent
- ☐ Oxidizing agent
- ☒ Dehydrating agent
- ☐ Reducing agent



✓ 27. The Hofmann Voltmeter is often used in the electrolysis of water. 1/1
Which one of the following best describes what happens at the cathode?

*



✓ 28. The electrochemical series lists the elements in order of their standard electrode potentials. Which one of the following is the correct order for decreasing reactivity of the metals? 1/1

*

☐ Mercury, calcium, sodium, magnesium

☐ Potassium, silver, magnesium, aluminium

☐ Gold, copper, zinc, potassium

☒ Sodium, aluminium, lead, copper



✗ 29. Which one of the following statements is incorrect? 0/1

*

☐ Electrodes that react with the electrolyte are said to be "active".

☒ Ions must be present in the electrolyte in order that it conducts electricity.



☐ The electrolyte that conducts electricity when in the molten state.

☐ Pure water does not allow a current to flow through it.

Correct answer

☒ The electrolyte that conducts electricity when in the molten state.



✗ 30. When dilute sulphuric acid is added to a salt 'A', a gas is produced which turns acidified potassium dichromate solution from orange to green. Identify the anion present in the salt. * 0/1

☐ Chloride

☒ Sulphide ✗

☐ Nitrate

☐ Sulphite

Correct answer

☒ Sulphite

✗ 31. The reaction taking place at anode, during electrolysis of aqueous copper sulphate using carbon electrode is: * 0/1

☒ $\text{Cu} - 2\text{e}^- \rightarrow \text{Cu}^{2+}$ ✗

☐ $\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu}$

☐ $\text{OH}^{1-} - 1\text{e}^- \rightarrow \text{OH}$

☐ $\text{H}^{1+} + 1\text{e}^- \rightarrow \text{H}$

Correct answer

☒ $\text{OH}^{1-} - 1\text{e}^- \rightarrow \text{OH}$



✓ 32. Calculate the relative molecular mass of $K_3 [Fe(CN)_6]$. (at.wt of $K=39, Fe=56, C=12, N=14$) * 1/1

☐ 609 a.m.u

☐ 1194 a.m.u

☒ 329 a.m.u ✓

☐ 401 a.m.u

✓ 33. The hydroxide which is soluble in excess of NaOH solution is: * 1/1

☒ $Zn(OH)_2$ ✓

☐ $Fe(OH)_2$

☐ $Fe(OH)_3$

☐ $Mg(OH)_2$

✓ 34. Which of the following pairs of electrolytes is not inert? * 1/1

☐ Mercury and Carbon

☐ Mercury and sodium

☐ Silver and Carbon

☒ Copper and Silver ✓



35. Sodium hydroxide solution is added to the solutions containing the ions mentioned in columns. The rows gives the details of the precipitate. Match the ions with their coloured precipitates : (6 X 1 =6) *

	Pb ²⁺	Fe ²⁺	Zn ²⁺	Fe ³⁺	Cu ²⁺	Ca ²⁺	Score	
Reddish brown	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/1	✓
White insoluble in excess	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	1/1	✓
Dirty green	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/1	✓
Gelatinous white soluble in excess	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/1	✓
Chalky white soluble in excess	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1/1	✓
Pale blue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	1/1	✓

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