Benha University
Faculty of Science
Chemistry Department

2nd year students
(Required for graduation)
Inorganic chemistry

Date : 9.1.2019
Total Time: 2 hour
Code: Ch222

[80 Marks]

Q1: Answer the following questions: [60 Marks]

I: Discuss the general properties of group 5A.

II: Discuss the synthesis of lithium nitride, magnesium nitride, zinc nitride, and aluminum nitride.

III: Explain why hydrazine and its derivatives are used in various rocket fuels.

IV: Define with chemical equations the ozone hole.

Q2: Choose the correct answer [20 Marks]

[1] 1 mole of magnesium nitride + 6 moles of water → ------- + 2 moles of ammonia

(A) 3 moles of magnesium oxide **(B)** 4 moles of magnesium oxide **(C)** 3 moles of magnesium hydroxide **(D)** 4 moles of magnesium hydroxide.

[2] Aldehyde detection positive test with Tollens reagent is indicated by

(A) The precipitation of silver and reduction of aldehyde **(B)** The precipitation of silver and oxidation of aldehyde **(C)** The precipitation of silver chloride and reduction of aldehyde **(D)** The precipitation of silver chloride and oxidation of aldehyde.

[3] Thermal catalytic decomposition of 2 moles of ----- gives 2 moles of potassium chloride and 3 moles of oxygen.

(A) Potassium sulfate **(B)** Potassium peroxide **(C)** Potassium perchlorate **(D)** Potassium chlorate.

[4] Melting point is the amount of energy required to break bonds to change

(**A)** a liquid phase substance to a gas (**B)** a solid phase substance to a liquid **(C)** a gas phase substance to a liquid **(D)** none of these.

Good Luck

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