

MILITARY COLLEGE MURREE
ENTRANCE EXAMINATION-2014
PAPER CHEMISTRY- CLASS 1ST YEAR 2014

TIME - 1 Hour

Total Marks – 50

Instructions

- All questions are compulsory.
 - No marks will be awarded in case of cutting, over writing or use of lead pencil.
 - Failing to abide by the following instructions will result in disqualification of the candidates:
 - Roll No will be written on first page of the answer sheet.
 - No identification marks e.g drawings, signatures etc will be marked on answer sheet.
 - Examination center will not be written on the answer sheet.
 - All questions will be attempted on the answer sheet only.
 - Paper will be attempted with blue ink. Black marker may be used for headings only.
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- Q1.** a. Find out the mass of 3 moles of oxygen atoms. (5)
- b. Define Atomic Mass Unit. Why is it needed? (5)
- Q2.** a. What is an Ionic Bond? Discuss the formation of an Ionic Bond between Sodium and Chlorine atoms. (5)
- b. Differentiate between dilute and concentrated solutions with a common example. (5)
- Q3.** a. During Nitrogen Fixation following reaction takes place: (5)
- $$\text{N}_2 (\text{g}) + \text{O}_2 (\text{g}) \rightleftharpoons 2\text{NO} (\text{g})$$
- When this reaction takes place at 1500 K. The value of K_c is 1.1×10^{-5} . If equilibrium conc. of Nitrogen and Oxygen is $1.7 \times 10^{-3} \text{ mol/dm}^3$ and $6.4 \times 10^{-3} \text{ mol/dm}^3$ respectively then what would be the equilibrium conc. of NO?
- b. Write down the conjugate Acids of the following: - (5)
- $\text{OH}^{(-)}$, $\text{HCO}_3^{(-)}$, $\text{HPO}_4^{(-2)}$, CH_3NH_2 , $\text{CO}_3^{(2-)}$
- Q4.** a. Describe the functional Group of an Alcohol. How Alcoholic Groups are identified? (5)
- b. What are Alkanes? Give the physical properties of Alkanes. (5)
- Q5.** a. Define Global Warming. What are the effects of Global warming? (5)
- b. Draw a Flow Sheet Diagram for extraction of Copper. (5)