

FEBRUARY 2021
EBS 254
GENERAL CHEMISTRY THEORY II
30 MINUTES

Candidate's Index Number:

Signature:

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
SCHOOL OF EDUCATIONAL DEVELOPMENT AND OUTREACH
INSTITUTE OF EDUCATION

COLLEGES OF EDUCATION
FOUR-YEAR BACHELOR OF EDUCATION (B.ED)
SECOND YEAR, FIRST SEMESTER MID SEMESTER QUIZ, FEBRUARY 2021

FEBRUARY 16, 2021

GENERAL CHEMISTRY THEORY II

12:00 PM – 12:30 PM

Answer ALL the questions.

(20 marks)

For items 1 to 10, each stem is followed by four options lettered A to D. Read each item carefully and circle the letter of the correct or best option.

- Which of the following gases burns in air with a light blue flame and also produces a pop sound?
 - H₂
 - HCl
 - NH₃
 - SO₂
- Why should a prepared gas be collected by downward delivery? Because the gas is
 - denser than air.
 - equal to the density of air.
 - less dense than air.
 - volatile.
- Which of the following mathematically expresses Charles's law?
 - $P_1V_1 = P_2V_2$
 - $\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T}$
 - $\frac{V_1}{T_1} = \frac{V_2}{T_2}$
 - $\frac{PV}{T} = K$
- Identify the gas that decolourises the purple acidified KMnO₄.
 - H₂
 - HCl
 - NH₃
 - SO₂

5. During the test of CO_2 using lime water, the lime water turns milky. Which of the following gave rise to the milky colour?
- A. $\text{Ba}(\text{OH})_2$
 - B. $\text{Ca}(\text{OH})_2$
 - C. CaCl_2
 - D. CaCO_3
6. Who relates the total pressure of a gaseous mixture to the pressure contribution from each of the individual gases in the mixture?
- A. Boyle.
 - B. Charles.
 - C. Dalton.
 - D. Graham.
7. Which of the following has strong inter-particle attractive forces?
- A. Gases.
 - B. Liquids.
 - C. Plasma.
 - D. Solids.
8. Units holding giant ionic solids are
- A. cations and anions.
 - B. cations and molecules.
 - C. molecules and anions.
 - D. sea of electrons.
9. Which of the following has a giant network structure?
- A. Benzoic acid.
 - B. Iodine.
 - C. Naphthalene.
 - D. Silicon dioxide.
10. One of the methods used in boiling point measurement is the method.
- A. boiling point
 - B. boiling tube
 - C. pressure boiling
 - D. vapour pressure

Items 11 to 15 are statements followed by True and False options. Read each item carefully and indicate whether it is True or False by circling the letter of the correct option.

11. Graham's law of diffusion relates the rate of diffusion of a gas with its density.
- A. True
 - B. False
12. The quantity of liquids in a container can increase with increasing temperature.
- A. True
 - B. False

13. Ideal gases have attractive forces existing between the molecules.
A. True
B. False
14. Evaporation of liquids in a container occurs at the surface of the liquid.
A. True
B. False
15. Mobile electrons around giant metals are described as localised electrons.
A. True
B. False

For items 16 to 19, write the appropriate responses in the spaces provided.

16. The volume of gases decreases with pressure because gases are
17. A gaseous nuclei-electrons mixture formed at very high temperature where electrons completely separate from nuclei, and neutral atom **cannot** exist is known as
18. The positions of the units in a solid, held by strong attractive bonds are called
19. A gas behaves ideally only under two conditions and these conditions are and

