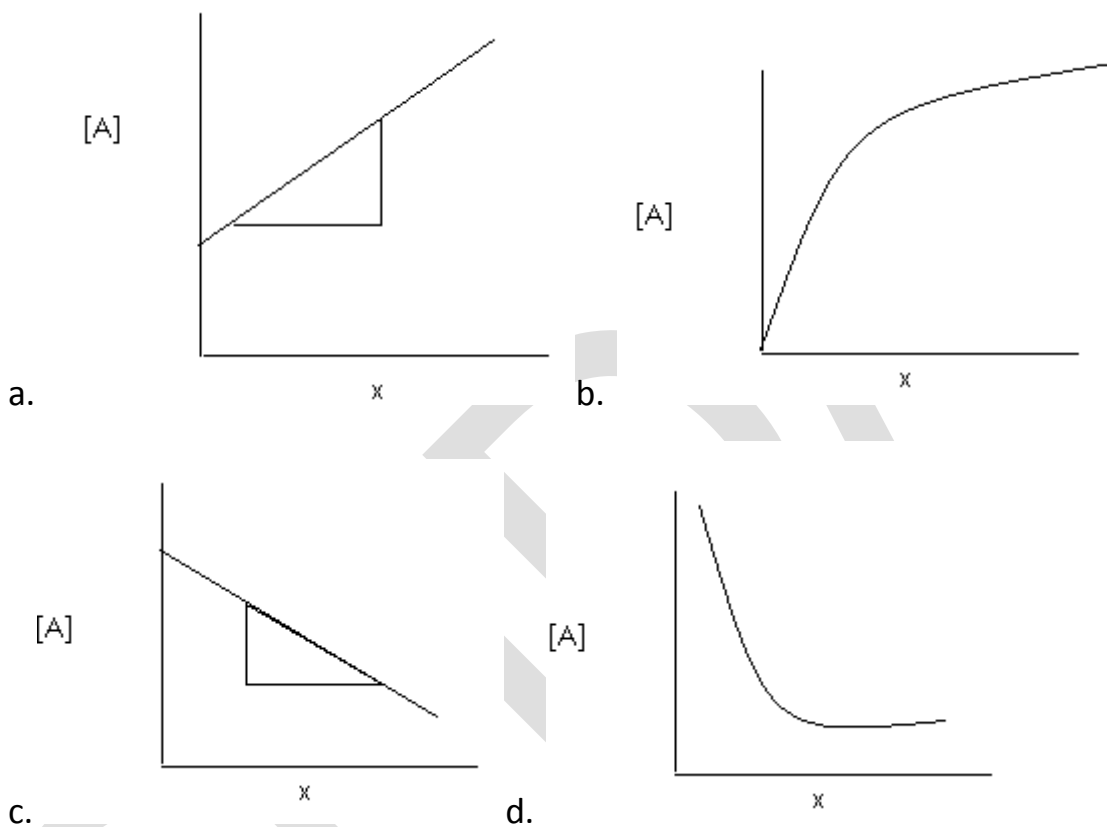


CMDA 100 level Mock 2020

CHM 101

1. Which of the following is a zero order graph



2. Calculate the enthalpy of formation of methane given that its enthalpy of combustion is -841kJ/mol and the enthalpy of formation of CO_2 and H_2O are -394kJ/mol and -286kJ/mol respectively

- a. -90kJ/mol b. -900kJ/mol c. -85kJ/mol d. -75kJ/mol

3. X-ray was discovered by in the year..... a.

- Rutherford 1912 b. Roentgen 1896 c. Albert Einstein 1980 d. Chadwick 1932

4. Alpha particles are

- a. massive positively charged was emitted at high speed
- b. massive negatively charged was emitted at high speed
- c. light positively charged ions emitted at low speed
- d. light negatively charged ions emitted at high speed

5. discovered neutrons a. James Chadwick b. Nernst
Rutherford c. Thomas Edison c. Isaac Newton

6. is an electrochemical cell that produced electricity as a result
of the spontaneous reaction occurring inside it a. electrolyte cell b.
electrode c. voltaic cell d. electrolyte

7. The 3 phase transition curve meet at whole point a. critical point b. triple
point c. saturation point d. none of the following

8. The following is correct about standard condition except a. gases at a
pressure of 1atm b. solid, liquid or gas at 273k c. solution at a unit
concentration of 1mol/dm^3 d. none of the following

9. How many moles of calcium trioxosulphate III are there in 25g of the compound a. 0.175 mole b. 0.152 mole c. 0.226 mole d. 0.115mole
10. The decomposition of dimethyl ether at 504°C is first order with half life of 15,705 seconds a. determine the rate constant of the reaction b. what fraction of an initial amount of dimethylether remains after 4,710 sec
- a. $5.612 \times 10^{-5} \text{s}^{-1}$,1.23 b. $56.12 \times 10^{-5} \text{s}^{-1}$, 0.812 c. $44.13 \times 10^{-6} \text{s}^{-1}$, 0.812
- d. $44.13 \times 10^{-6} \text{s}^{-1}$,1.23
11. One of the following is not true about solids
- A. It is highly compressible
- B. Constant shape and volume
- C. Decreased ability to flow
- D. They are crystalline
12. The following is true about condensation except
- A. It is an exothermic reaction
- B. Change in phase from gas to liquid
- C. It results from an increase in temperature
- D. It is an endothermic reaction
13. What is the heat of vaporisation, ΔH_{vap} of a liquid that has a vapour pressure of 641torr at 85.2°C and a boiling point of 95.6°C at 1 atm.

- A. 179.4 KJmol^{-1}
- B. 17.94 KJmol^{-1}
- C. 182.3 KJmol^{-1}
- D. 18.23 KJmol^{-1}

14. The triple point pressure for CO_2 is

- A. 1.0 atm
- B. 8.3 atm
- C. 5.1 atm
- D. 2.5 atm

15. How many particles are there in 2.5g of chromium (III) tetraoxosulphate (VI)

- A. 1.92×10^{21} molecules
- B. 2.02×10^{21} molecules
- C. 3.84×10^{21} molecules
- D. 6.02×10^{21} molecules

16. The following is true for Alkali metals except

- A. They are all metals
- B. They belong to S-block
- C. They have the same no of Valence electrons
- D. They are the most abundant in the periodic table

17. What is the mass number of a silicon atom with 16 neutrons in its nucleus

- A. 23
- B. 30
- C. 32
- D. 37

18. One of the following is not true about Rutherford model of the atom

- A. Atoms and matter are majorly empty spaces
- B. The size of the nucleus is small relative to the size of the atom
- C. He discovered positively charged particles in the nuclei of the atom
- D. He determined the charge to mass ratio of the particles

19. All but one of the following is correct about endothermic reaction occurring in a system

- A. There is absorption of heat from the surrounding
- B. The enthalpy change is positive
- C. The total sum of enthalpies of the reactants is greater than the total sum of enthalpies of the products
- D. The container is cold

20. The half life of the first order reaction is 2.0×10^4 seconds, how long will it take for the reaction to reach 60%

- A. 436.36 minutes
- B. 437.35 minutes
- C. 365.41 minutes
- D. 345.44 minutes

1. C
2. D
3. B
4. A
5. A
6. C
7. B
8. B
9. D
10. C
11. A
12. D
13. B
14. C
15. C
16. A
17. B
18. D
19. C
20. A

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