

A-2-C

Roll No.

Total No. of Questions : 27]

[Total No. of Printed Pages : 7

**XIARKDD20
2702-C
CHEMISTRY**

Time : 3 Hours]

[Maximum Marks : 70

(Very Short Answer Type Questions)

1 each

1. Which of the following is not correct ?

(A) ΔG is zero for a reversible reaction.

(B) ΔG is +ve for a spontaneous reaction

(C) ΔG is -ve for a spontaneous reaction.

(D) ΔG is +ve for a nonspontaneous reaction.

2. What is the oxidation number of nitrogen in NH_2OH ?

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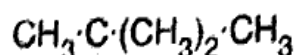
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Turn Over

3. Identify the substance oxidised and reduced in the following reaction :



4. Give the IUPAC name of :



5. Out of ethylene and acetylene which is more acidic and why ?

(Short Answer Type Questions—I)

2 each

6. Define mole in terms of mass and number with examples.
7. Write the electronic configuration of Chromium ? Why does it has exceptional E.C. ?
8. How does modern periodic law differ from Mendeleev's periodic law ?
9. Define pH. Write pH value of pure water, strong acid and strong base.
10. What are Isotopes ? Name the isotopes of hydrogen.
11. Malti, a domestic servant of Mrs. Saroj, complained of severe chest pain while cleaning utensils. Saroj immediately took her to a doctor and she

was diagnosed to be suffering from angina pain. The doctor prescribed her the medicine called sorbitrate. Mrs. Saroj also supported her financially to buy the medicines. After reading the above passage, answer the following questions :

- (i) What is sorbitrate made up of ?
 - (ii) What values are displayed by Mrs. Saroj ?
12. What do you understand by Green Chemistry ? How has it helped in dry cleaning of clothes and laundry ?

Or

- ✓ What could be the harmful effects of improper management of industrial and domestic solid waste in a city ?

(Short Answer Type Questions—II)

3 each

13. When 4.2 g of NaHCO_3 is added to a solution of CH_3COOH weighing 10 g, it is observed that 2.2 g of CO_2 is released to the atmosphere. The residue is found to weigh 12.0 g. Show that these observations are in agreement with the law of conservation of mass.

14. State and explain Heisenberg's uncertainty principle.
15. What is Ionization Enthalpy ? Name the factors on which it depends. How does it vary along a period and down a group ?
16. With the help of gas laws, deduce an expression for the ideal gas equation.
17. What is the effect of temperature on :
- (A) Density
 - (B) Surface tension
 - (C) Viscosity
 - (D) Vapour pressure of a liquid ?
18. State and explain the First Law of Thermodynamics. ✓

Or

Given that $\Delta H = 0$ for mixing of two gases. Explain, whether the diffusion of these gases into each other in a container is a spontaneous process or not ?

19. What happens when :

(A) magnesium is burnt in air

(B) quick lime is heated with silica

(C) chlorine react with slaked lime ?

20. Name the elements of group-1 and write their electronic configurations.

21. Why is the temperature maintained around 393 K during the preparation of Plaster of Paris ?

22. +2 oxidation state of lead is more stable than +4 oxidation state. Give reasons.

23. Give three points of differences between inductive effect and resonance effect.

24. What effect the branching of an alkane has on its melting point ?

(Long Answer Type Questions)

5 each

25. Use the molecular orbital energy level diagram to show that N_2 would be expected to have a triple bond, F_2 a single bond and Ne_2 no bond.

Or

What is an ionic bond ? With two suitable examples, explain the difference between an ionic bond and a covalent bond.

26. Explain the following giving examples :

- (i) Functional group
- (ii) Homologous series and its characteristics.

Or

How will you detect the presence of carbon and hydrogen in an organic compound ?

27. In the presence of peroxide addition of HBr to propene takes place according to Anti-Markownikov's rule but peroxide effect is not seen in case of HCl and HI . Explain.