2020

CHEMISTRY

[HONOURS]
Paper : XI
(PRACTICAL)

Full Marks : 80   Time :

The figures in the right-hand margin indicate marks.

GROUP–A

(Physical-Non Instrumental)

(Marks : 40)

Answer any **four** questions: 10×4=40

1. Define Viscosity coefficient. Write down its unit and dimension. Discuss the effect of temperature on the viscosity of a liquid.   3+1+1+5=10

2. Define surface tension. Write down its unit and dimension. Discuss the experimental determination of surface tension of a liquid by stalagmometer.
3+1+1+5=10

3. What is adsorption? Discuss the effect of temperature and pressure on adsorption of a gas on a solid surface. Draw Freundlich adsorption isotherm.   3+2+2+3=10

[Turn over]

4. Write down Nernst distribution Law. Write the concept briefly on which you determine the distribution coefficient of iodine between water and chloroform.   3+7=10

5. What is order of a reaction? Write down the unit of a third order rate constant. What is pseudo first order reaction? Give example.   3+2+2+3=10

6. Define buffer solution. Give example of acidic and basic buffers. Write down Henderson Hasselbalch equation. Write down two pH indicator names.
3+2+2+2+1=10

GROUP-B

[Physical-Instrumental]

[Marks : 40]

Answer any **four** questions: 10×4=40

7. What is Lambert-Beer's law? Write down its limitations. On what factors 'molar extinction coefficient' depend? Write down the unit of molar extinction coefficient.   3+3+2+2=10

8. What is specific rotation? Write down the factors on which specific rotation depends. What do you mean by optically active substances? Mention the name of some optically active substances.
3+3+2+2=10

9. Define specific conductance and equivalent conductance. Write down their units. Draw a conductometric titration curve of oxalic acid vs.NaOH. 2+2+2+4=10

10. What are the advantages of potentiometric titration? Write down the basic concept of potentiometric titration of Mohr's salt solution against standard $K_2Cr_2O_7$ solution. 3+7=10

11. Define pH. What is ionic product of water? What is its value at 298K? Write down a short note on Glass electrode. 3+2+1+4=10

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