

CHEMISTRY MODEL QUESTION PAPER

CHEMISTRY GENERAL

SEMESTER-III

COURSE NAME - CHEMGT-3

Each question carry two marks.

1. What is ideal solution? Give example.
2. What happen when 2, 4, 6-trinitrochlorobenzene is heated with water? Give chemical equation.
3. What is meant by transport number of an ion? Show that sum of transport number of cation and anion is unity.
4. What do you mean by Gibb's free energy? Give mathematical equation.
5. Why O₂ is paramagnetic? Explain.
6. What is meant by efficiency of heat engine?
7. How phenol is converted to salicylic acid?
8. What is Photoelectric effect? Write Einstein photoelectric equation.
9. What happens when acetone is treated with hydrazine followed by NaOEt (sodium ethoxide) and EtOH?
10. Give one example of ipso substitution and cine substitution.

Each question carry five marks.

1. Give various statements of First law of thermodynamics.
2. What are extensive and intensive properties? Define entropy?
3. Define heat of reaction. What factors influence heat of reaction? Write two characteristics of chemical equilibrium.
4. Give one example of
 - i. Perkin Reaction,
 - ii. Cannizaro reaction,
 - iii. Aldol Condensation reaction,
 - iv. Benzoin condensation,
 - v. Clemmensen reduction,

5. State Zeroth law of thermodynamics? What is meant by state function and path function? Give example.

6. Derive a relation between K_p and K_c .

Each question carry ten marks

1. Deduce values of q , w , U and H for isothermal reversible expansion of ideal gas.

2. Deduce Vant Hoff reaction of isotherm. 10

3. What is Le Chatelier's principle? Explain giving examples. 10

4. Write a short note on

i. Friedel-Craft's reaction

ii. Reformatsky reaction

iii. Sandmeyer reactions

iv. Pinacol-pinacolone rearrangement