



M.Tech. III Semester Degree Examination, April/May - 2024

MINERAL PROCESSING

Surface Chemistry

(NEP)

Time : 3 Hours

Maximum Marks : 70

Note : Answer **any five** of the following questions with question No. 1 (Q.1) is **Compulsory**.
Each question carries **equal** marks.

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|----|-----|--|---|
| 1. | (a) | Write a note on covalent solids. | 4 |
| | (b) | List out the properties of ionic compounds. | 5 |
| | (c) | What are colloidal compounds and how does they prepare ? | 5 |
| 2. | (a) | Differentiate between the physisorption and chemisorption. | 4 |
| | (b) | Write a note on Fraundlich adsorption isotherm. | 5 |
| | (c) | Describe BET theory. | 5 |
| 3. | (a) | Write a note on surface tension of solutions. | 4 |
| | (b) | Write a note on surface tension and its measurement. | 5 |
| | (c) | Explain surface tension and chemical composition. | 5 |
| 4. | (a) | Define liquid-liquid interface and write the application of liquid-liquid interface. | 4 |
| | (b) | Describe Stagnat layer at solid-liquid interface. | 5 |
| | (c) | Write a note on films at interfaces and emulsions. | 5 |
| 5. | (a) | How static electricity and conductance affect on solid-gas interface. | 4 |
| | (b) | Write the effects of composition of liquid phases and electro-kinetic phenomenon. | 5 |
| | (c) | Describe electrical double layer and mutual repulsion. | 5 |
| 6. | (a) | Explain polarity in covalent bond. | 4 |
| | (b) | List the postulates of Henry's law. | 5 |
| | (c) | What is the importance of thermodynamics of surface tension ? | 5 |
| 7. | (a) | Write a note on importance of absorption and utilization. | 5 |
| | (b) | Applications of metallic compounds. | 5 |
| | (c) | Write a note on interfacial energy. | 4 |
| 8. | (a) | Describe Polany's potential theory. | 5 |
| | (b) | Write a note on mechanical effects of adsorption. | 4 |
| | (c) | Describe multi-component system in liquid-liquid interface. | 5 |

