RGPV DIPLOMA CHEMISTRY QUESTION PAPER, F 2016

1. (a) Define atomic number with example. 3
(b) $_{92}U^{238}$ disintegrates to form $_{92}U^{230}$. Calculate the number of α and β particles emitted in the process. 3
(c) Explain Bohr-Burry scheme for filling of electrons in various orbits. 6
(d) What is radioactivity? Explain the group displacement law with equation. 8

(b) 2. (a) Define pH and Buffer solutions. 3
(c) Determine the pH value of N/100 HCI HCI solution. 3
(d) Write the Arrhenius theory of Ionization. 6
(e) What is Corrosion? How corrosion can be controlled? 8

3. (a) Define Colloidal solutions with examples. 3
(b) What is Brownian movement? Explain with example and neat diagram. 3
(c) Explain emulsion & gel with examples. What do you know about swelling, syneresis & Thixotropy.6
(d) What are electrical properties of colloids? Explain with examples. 8

4. (a) Define Electrolysis with examples. 3
(b) Define Acidic and Basic refrectories with examples. 3
(c) Explain Faraday's first law of electrolysis. What is electroplating? Explain. 6
(d) Define Lubricant. Why lubrication of machine is done? Write the properties of a good lubricant.8

5. (a) What are colligative properties? Explain. 3
(b) Define Osmosis and Osmotic pressure with example. 3
(c) Explain Pfeffer's method or the determination of osmotic pressure. What are its drawbacks? 6
(d) The vapor pressure of a solvent at 25°C is 450 mm mercury. When 100 gM of a substance are dissolved in 500 gm of solvent, the vapor pressure of the solution falls to 423 mm. of mercury. If the molecular
weight of solvent is 74, what is the molecular weight of the solute?8
6. (a) Write the difference between minerals and ores with examples. 3
(b) What are the purpose of making alloys? 3
(c) What do you know about hardness of water? Give types of hardness with chemical equation. 6
(d) Explain with diagram chemical equation the zeolite process for softening the hard water. How zeolite is regenerated? 8

7. (a) Explain Polymer and polymerisation with example. 3
(b) What are ingredients of paints? 3
(c) What are plastics? Explain Thermoplastics and Thermosetting plastics with examples. 6
(d) Write the preparation, properties and uses of Polyvinyl chloride. 8

8. (a) What are the characteristics of a good fuel? 3
(b) How water pollution can be controlled? 3
(c) Write short notes on fire extinguishers. What precautions should be taken for fire protection? 6
(d) What do you know about calorific value of fuel? Explain gross & get calorific value with example. 8