11/12
30

Sr. No 019301

December 2023

B. Tech (ENV) ~~B.Tech.~~ III SEMESTER

Environmental Chemistry (PCC-EED-201)

Time: 3 Hours Max. Marks:75

Instructions:
1. *It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.*
2. *Answer any four questions from Part -B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART -A

Q1 Write about (a) Radioactivity (1.5)

(b) Kinetics of chemical reactions (1.5)

(c) Acid-base equilibria (1.5)

(d) Precipitation (1.5)

(e) Redox Reactions (1.5)

(f) Base Saturation (1.5)

(g) Stratosphere (1.5)

(h) Sampling (1.5)

(i) Green chemistry (1.5)

(j) Sustainable Materials (1.5)

PART -B

Q2 (a) Convert 140 mg/cc of SO2 concentration into ppm and ppb. (10)

(b) Write about the structure of atmosphere. (5)

Q3 (a) Differentiate between ionic and covalent bonds. (5)

(b) What is the Normality of a 3.75 M H2SO4 solution with a density of 1.230 g/mL? (10)

Q4 Explain about Quality assurance and quality control in environmental analysis in detail. (15)

Q5 (a) Explain sodium absorption ratio. (5)

(b) Write about the role of Organic matter, Nitrogen, Phosphorus and potassium in soil chemistry. (10)

Q6 (a) Calculate the carbonate & non-carbonate hardness of a water sample if the total hardness and alkalinity of sample are 300 mg/L and 100 mg/L (as CaCo3) respectively. (5)

(b) Effluent from an industry 'A' has a pH of 4.2. The effluent from another industry 'B' has double the hydroxyl ions concentration than the effluent from industry A. Calculate the pH of effluent B. (10)

019301 / 30 / III / 550

RP

Q7 Explain the principles of green chemistry and their importance, Life cycle assessment and environmental impact assessment in detail. (15)

****