Note: (a)All questions are compulsory.

(b)Marks are indicated against each question in square brackets.

Q1(a). Name the types of bonds based on the mode of formation. Discuss in brief ionic and covalent bonds with suitable example   3[COI]

(b). Explain different types of ceramics products along with examples.   3[COIV]

Q2(a). Elaborate the controlling measures of air pollution.   3[COVI]

(b). Describe the harmful effects of carbon monoxide.   3[COVI]

Q3(a). Elucidate the important characteristics of Refractories.   3[COIV]

(b). Discuss the applications of Zeolites.   3[COIV]

Q4(a). Equal weights of polymer molecules with molecular weights 20,000 g/mol and 200,000 g/mol are mixed. Calculate Mn and Mw.   3[COV]

(b). Elucidate classification of polymers based upon molecular forces.   3[COV]

(c). Explain the difference between paints, enamels, emulsion paints, lacquers and varnishes.
                                                                            3[COIII]

Q5(a). If a polymer sample has population as
        10 molecules of molecular mass each = 5000
        20 molecules of molecular mass each = 7500
        20 molecules of molecular mass each = 10000
        25 molecules of molecular mass each = 15000
        20 molecules of molecular mass each = 20000
        5 molecules of molecular mass each = 25000

        Calculate the number average and weight average molecular mass of polymer.
                                                                            3[COV]

(b). Differentiate between redox and complexometric titrations.   3[COV]

(c). How radon gas is responsible for degradation of indoor air quality?   2[COVI]