

II- SEM/COMMON/2019(W)/(OLD)
BST-102-ENGG. CHEMISTRY

Full Marks: 80

Time: 3 Hours

Answer any Five Questions including Q No. 1& 2

Figures in the right hand margin indicates marks

1.	Answer ALL the questions:	2X10
(a)	Define the term Isotope with suitable example.	
(b)	What is acid radical? Give two examples of divalent monoatomic acid radicals.	
(c)	Calculate the equivalent weight of Na_2SO_4 and CH_3COOH .	
(d)	Convert 10^{-2} M H_2SO_4 solution into its normality.	
(e)	What do you mean by a strong electrolyte? Give two examples of it.	
(f)	Define flux. Give examples of acidic flux and basic flux.	
(g)	C_4H_8 belongs to which homologous series? Write its IUPAC name.	
(h)	What is LDO and HSD? Mention their uses.	
(i)	What is Huckel's Rule?	
(j)	Define contaminant. Give one example of it.	
2.	Answer any SIX questions:	5X6
(a)	Explain the failure of Rutherford's Atomic model.	
(b)	Define chemical bonding. Explain the formation of NaCl and NH_4^+ molecules.	
(c)	All the Arrhenius acids are Bronsted-Lowry acids but all the Arrhenius base are not Bronsted-Lowry base. Justify with suitable examples.	
(d)	How many grams of caustic potash is required to prepare 500mL of its decinormal solution?	
(e)	Distinguish between Calcination and Roasting.	
(f)	How acid rain occurs? What are its effects?	
(g)	Write down the structural formulae of the following organic compounds. (i) Tert-butyl alcohol (ii) But-1-en-3-yne (iii) 3,4- dimethyl pentan-2-ol (iv) 1,1,2,2- tetrafloro ethene (v) 2,3-dibromo-1,4-dichloro but-2-ene	
3.(a)	State and Explain Faraday's 1 st Law of Electrolysis. Find the mass of copper deposited at cathode by passing a current of 0.25A through CuSO_4 solution flowing for 1h. (At. wt. Of Cu= 63)	5
(b)	Explain Magnetic separation method of concentration of ore with a neat and labelled diagram.	5
4.(a)	9.8 grams of H_2SO_4 is present in 2L of its solution having density 1.4 gm/mL. Calculate the molarity, molality and pH of the solution.	5
(b)	Distinguish between saturated and unsaturated hydrocarbons.	5
5.(a)	Define Corrosion. Explain Waterline corrosion.	5
(b)	Define Alloy. Write down the composition and uses of Brass, Bronze, Alnico and Duralumin.	5
6.(a)	Write down the composition and uses of LPG and CNG.	5
(b)	Give a comparison between Thermoplastic and Thermosetting polymer.	5
7.(a)	Explain the process of electroplating with an example.	5
(b)	Explain the process of regeneration of Ion Exchange resin.	5