Visvesvaraya Technological University, Belagavi
Model Question Paper-2 with effect from 2022
Computer Science & Engg. Stream (CBCS Scheme)
First /Second Semester Engineering Degree Examination

USN: ⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜

Subject Title: Chemistry for computer science & Engineering stream 22CHES12/22

TIME: 03 Hours   **Max. Marks:** 100

Note:Answer FIVE full questions, choosing one full question from each module

			MODULE 1	Marks
1		a	Explain the working principle of potentiometry sensors , and Thermal sensors (Flame photometer)	7
		b	Write a note on Disposable Sensors? Explain its advantages over classical sensors	7
		c	Describe the construction, working and applications of Sodium-ion batteries and mention any four applications	6
			OR	
2		a	Explain the working principle of Electrochemical sensors, and mention its applications	6
		b	What are Actuators & Transducers?Explain about detection of Glyphosate with electrochemical oxidation.	7
		c	What are batteries? Explain the working Principle, Properties and Applications of Quantum Dot sensitized solar cells.	7
			MODULE 2	
3		a	Explain the types of organic memory devices by taking p-type and n-type semiconductor materials	7
		b	What are Memory Devices? Explain the Classification of electronic memory devices with examples	6
		c	What are nanomaterials? Explain any four properties of Poly[9-vinylcarbazole] (PVK) suitable for optoelectronic devices.	7
			OR	
4		a	Explain the types of organic memory devices by taking p-type and n-type semiconductor materials	6
		b	Mention any four properties and applications of LCD-displays	7
		c	Mention any four properties and applications of OLED	7
			MODULE 3	
5		a	Define corrosion? Mention at least six implications of corrosion .	7
		b	Explain: (i) Differential metal corrosion & (ii) Water-line corrosion	6
		c	Explain the construction and working of glass electrode	7
			OR	

6	a	Explain the application of conductometric electrode in estimation of weak acid.	6
	b	Explain: i) corrosion control by Anodization & ii) Sacrificial anodic method.	7
	c	What is CPR? A thick brass sheet of area 100 inch^2 is exposed to moist air. After 1 years of period, it was found to experience a weight loss 75 g due to corrosion. If the density of brass is 2.52 g/cm^3. Calculate CPR in mpy and mmpy.	7

MODULE 4

7	a	A polydisperse sample of polystyrene is prepared by mixing three monodisperse samples in the following proportions. 1g of 10000 molecular weight, 2g of 50000 molecular weight and 2g of 100000 molecular weight. Determine number average and weight average molecular weight. Find the index of polydispersity.	7
	b	Explain the Preparation, properties, and commercial applications of Kevlar.	7
	c	Describe the hydrogen production by photo catalytic water splitting method.	6

OR

8	a	Describe the hydrogen production by photo catalytic water splitting method.	7
	b	Mention the properties of hydrogen pertaining to fuel and its advantages in production of energy.	7
	c	What are green fuels?Explain the advantages & disadvantages of photovoltaic cells.	6

MODULE 5

9	a	What are e-waste and explain the need for e-waste management	7
	b	Explain the health hazard due to exposure to e-waste.	7
	c	Write a brief note on role of stakeholders for example; producers, consumers, recyclers, and statutory bodies.	6

OR

10	a	Which all toxic materials used in manufacturing electrical and electronic products, write there effects on environment.	7
	b	Explain the advantages of recycling and recovery in e-wastes.	6
	c	Explain about sorces, composition and characteristics of e-waste.	7