Reg. No: ..... Name : .....

VISWAJYOTHI COLLEGE OF ENGINEERING AND TECHNOLOGY (Autonomous)
FIRST SEMESTER B.TECH DEGREE EXAMINATION DECEMBER 2025 (2025 SCHEME)
Course Code: 25VJGXCYT122
Course Name: CHEMISTRY FOR INFORMATION SCIENCE / ELECTRICAL SCIENCE

Max. Marks: 60 **Duration: 2 Hours 30 Minutes**

PART A

Q.No.	*Answer all questions. Each question carries 3 marks*	*CO*	*Marks*
1	Which are the advantages and disadvantages of SHE?	CO1	(3)
2	What is cathodic protection?	CO1	(3)
3	Discuss the structure of Graphene.	CO2	(3)
4	Write any three advantages of Super capacitors.	CO2	(3)
5	What is the principle of DETA?	CO3	(3)
6	Give any three applications of IR spectroscopy.	CO3	(3)
7	What do you mean by sustainable development goals? List any two SDGs.	CO4	(3)
8	Explain disinfection by chlorination.	CO4	(3)

PART B

Answer any one full question from each module. Each question carries 9 marks

Module 1

9	a) Explain the conductivity measurment using Digital conductivitymeter. (6 marks) b) Calculate the conductivity of given sample of water at 298K, which shows a conductance of 560μS in the given cell at 298K. A standard solution of 0.1 M KCl shows a conductance of 12.34 mS in that cell. (Given that conductivity of 0.1M KCl at 298K is 0.01288S/cm) (3marks)	CO1	(9)
10	Explain the mechanism of electrochemical corrosion of iron in acidic and alkaline environmental conditions .	CO1	(9)

Module 2

11	What are nanomaterials? Explain the classification based on materials and dimension.	CO2	(9)
12	Explain the preparation of Polypyrolle. Write any three properties and applications of Polypyrolle.	CO2	(9)

Module 3

13	Explain the principle, instrumentation and applications of Scanning Electron Microscopy.	CO3	(9)
14	a) Explain the instrumentation of UV-Visible Spectrophotometer. (6 marks) b) Give any three applications of UV-Visible spectroscopy. (3 marks)	CO3	(9)

Module 4

15	a) What are Ion exchange resins? How exhausted resins are regenerated? (3 marks) b) With a labelled diagram, explain the Ion exchange process used for demineralization of Hard Water. (6 marks)	CO4	(9)
16	Explain different stages in sewage water treatment with a flow diagram.	CO4	(9)

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