

5 Sem VI (KT) C-Scheme Winter 2025

11/12/25

ECS - EPD

Marks: 80

Duration: 3hrs

- N.B. : (1) Question No 1 is Compulsory.
 (2) Attempt any three questions out of the remaining five.
 (3) All questions carry equal marks.
 (4) Assume suitable data, if required and state it clearly.

- 1 Attempt any FOUR [20]
 - a Define Prototype, Minimum Viable Product, and Commercial Product with suitable examples. [05]
 - b Explain the concept of the Customer Discovery Process and its importance in product development. [05]
 - c What do you understand by Product-Market Fit? Discuss the main causes of product failure. [05]
 - d Explain the concept of Idea Segmentation and its relevance in defining product features. [05]
 - e Differentiate between a Functional Model and an Architectural Model with suitable examples. [05]
- 2 a Discuss the various stages in the Product Development Life Cycle from concept to commercialization. [10]
- b Explain the classification of electronic products and discuss Indian and International Standards for product compliance and certification. [10]
- 3 a Describe the Hardware Design Process including requirement identification, specification formulation, system partitioning, and architectural design. [10]
- b Explain the important criteria for selection of electronic components in product design. [10]
- 4 a Compare the Waterfall Model and the V-Model used in software development processes. [10]
- b Explain the types of software bugs and various software testing methods used in embedded systems. [05]
- c Discuss the principles of Good Programming Practice and explain their importance in user interface and real-time software design. [05]
- 5 a Explain the techniques of troubleshooting and debugging in analog and digital circuits. [10]
- b Describe in detail the causes and effects of Electromagnetic Interference and Electromagnetic Compatibility in product design and list suitable preventive measures. [10]
- 6 a Define Documentation. Explain the needs, types, and importance of maintaining records, accountability, and liability in electronic product development. [10]
- b Explain in detail Instruction Manuals, Service and Maintenance Manuals, and Fault-Finding Trees used in the documentation process. [10]
