**Roll No……..** **Total No. of Printed Pages: 1**

**Total No. of Questions: [09]**

**B.Tech (CSE) (Semester 6th)**
**SOFTWARE ENGINEERING**
**Subject Code: BCSE1626**
**Paper ID: [111117]**

**Time: 03 Hours** **Maximum Marks: 60**

**Instruction for candidates:**

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

**Section – A** **(2 marks each)**

Q1. Attempt the following:
a) What is a Prototyping Model in Software Engineering?
b) What is the significance of risk analysis in the Spiral Model?
c) How is project scheduling done using PERT charts?
d) What is the significance of requirements gathering in software development?
e) What are functional and non-functional requirements in SRS?
f) Define cohesion in software design. How does high cohesion improve software quality?
g) Why is user interface (UI) design important in software development?
h) What is modularity in software design? Explain its importance in system development.
i) Explain the concept of reliability growth modeling in software engineering.
j) What is the SEI CMMI, and how does it help improve software quality?

**Section – B** **(5 marks each)**

Q2. Discuss the software crisis and its challenges in the context of large-scale software development.

Q3. Compare and contrast the Waterfall, Prototyping, Evolutionary, and Spiral models of Software Development.

Q4. What are the key activities involved in project scheduling using PERT and Gantt charts?

Q5. Explain the difference between white-box testing and black-box testing. Discuss their advantages and disadvantages.

Q6. What is Software Configuration Management (SCM), and why is it important in large software projects?

**Section – C** **(10 marks each)**

Q7. What are the different methods of software cost estimation? Explain the use of Function Point Analysis and COCOMO model in estimating software development costs with example.

Q8. Describe the process of function-oriented software design with the use of Data Flow Diagrams (DFD) and Structure Charts. How are these tools used to visualize and document the system's functionality?

Q9. Discuss the principles of Software Quality Management (SQM) in detail. Explain how software quality can be ensured through various techniques such as Risk Management, Quality Assurance (QA), and Quality Control (QC).