

Registration No.:

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Total Number of Pages: 02

B. Tech
RCS7D001

7th Semester Regular/Back Examination: 2025-26

Software Project Management
CSE, CSEAIML, CSEDS, CST

Time: 3 Hours

Max Marks: 100

Q. Code: U165

Answer Question No.1 (Part-I) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

- Q1** Answer the following questions: (2 x 10)
- a) Define a software project.
 - b) What are the major problems with software projects?
 - c) State any two differences between AON and AOA networks.
 - d) What is crashing in project management?
 - e) Define Earned Value (EV).
 - f) What is agile development?
 - g) State the purpose of ISO 9001.
 - h) What is defect prevention?
 - i) Write the formula for Halstead's program length.
 - j) Who are stakeholders in a project?

Part-II

- Q2** Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)
- a) Explain the key phases in a typical software project life cycle with examples.
 - b) Categorize different types of software projects and discuss their characteristics.
 - c) Apply the COCOMO basic model to estimate effort for a project of size 30 KLOC. (Assume appropriate constants.)
 - d) Compare AON and AOA network diagrams with neat sketches.
 - e) Analyze a given project schedule and identify critical activities in a CPM network. (Network diagram will be provided.) Assume a suitable network.
 - f) Discuss categories of risks in software projects with suitable examples.
 - g) Explain PERT with an example of three-time estimation.
 - h) Describe the concept of resource allocation and its effect on project timelines.
 - i) Analyze team structures used in software organizations.
 - j) Explain earned value analysis and its components with an example.
 - k) Discuss key features of ISO 9000 quality standard.
 - l) Explain the role of reviews and audits in software quality assurance.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3** a) Evaluate the Step-Wise project planning approach and justify its effectiveness for large software projects. (8)
b) Critically analyze the limitations of traditional estimation methods (COCOMO, Putnam, Jensen, Halstead) and propose situations where each is most appropriate. (8)
- Q4** a) A project has the following activities: (Data will be provided.) (8)
• Construct the network,
• Identify the critical path,
• Evaluate the impact of crashing two critical activities.
- b) Develop a complete risk management plan for an e-commerce website development project. (8)
- Q5** a) Evaluate earned value analysis as a monitoring tool and suggest improvements for large-scale agile projects. (8)
b) Design a quality assurance framework for a mid-sized software company by integrating ISO 9001, CMMI, and Six Sigma principles. (8)
- Q6** a) Create a project schedule using Gantt chart and CPM for a mobile app development project. Include resources, milestones, and cost schedule. (8)
b) Propose a software process improvement strategy using PSP and Six Sigma for reducing defect density by 30%. (8)

Activity	Predecessor Activity	Duration (Weeks)
A	-	3
B	A	5
C	A	7
D	B	10
E	C	5
F	D,E	4

Data for 4(a)