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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)

- Define a software project.
- What are the major problems with software projects?
- State any two differences between AON and AOA networks.
- What is crashing in project management?
- Define Earned Value (EV).
- What is agile development?
- State the purpose of ISO 9001.
- What is defect prevention?
- Write the formula for Halstead's program length.
- Who are stakeholders in a project?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)

(6 x 8)

- Explain the key phases in a typical software project life cycle with examples.
- Categorize different types of software projects and discuss their characteristics.
- Apply the COCOMO basic model to estimate effort for a project of size 30 KLOC. (Assume appropriate constants.)
- Compare AON and AOA network diagrams with neat sketches.
- Analyze a given project schedule and identify critical activities in a CPM network. (Network diagram will be provided.) Assume a suitable network.
- Discuss categories of risks in software projects with suitable examples.
- Explain PERT with an example of three-time estimation.
- Describe the concept of resource allocation and its effect on project timelines.
- Analyze team structures used in software organizations.
- Explain earned value analysis and its components with an example.
- Discuss key features of ISO 9000 quality standard.
- 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)