



University of Engineering & Management, Kolkata
2nd Term Examination, November, 2023
Programme Name: B.Tech in CSE / CSE (AIML) / CSE (IOT, CYS, BCT)
Semester: 5th
Course Name: Software Engineering
Course Code: PCCCSE503

Full Marks: 30

Date: 7th November, 2023

Time: 1.30 pm – 2.30 pm

Part - A

Attempt 5 questions

Each question carries 2 Marks (2 X 5)

1.A. Is the feature point metric beneficial over LOC? – Justify.

Or

1.B. Analyse how UFP can be converted to FP.

2.A. What do you mean by sliding window protocol?

Or

2.B. Define “phase containment error”.

3.A. Define the mixed team structure in an organisation.

Or

3.B. Define the democratic team structure in an organisation.

4.A. Define test-suite for a given function. Give example.

Or

4.B. What do you understand by code walkthrough?

5.A. Define MTTR.

Or

5.B. Define ROCOF.

Part - B

Attempt 2 questions

Each question carries 5 Marks (5 X 2)

6.A. Write a C function for bubble sort implementation, draw the CFG and then determine the respective cyclomatic complexity of the sort function.

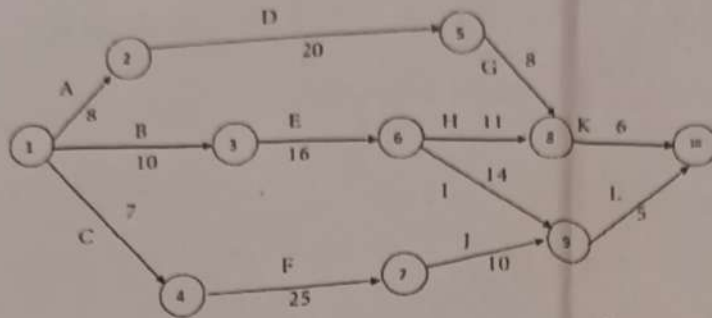
Or

6.B. Write a C function for binary search implementation, draw the CFG and then determine the respective cyclomatic complexity of the sort function.

7.A. Consider a software project with 5 tasks T1–T5. Duration of the 5 tasks in weeks are 3,2,3,5,2 respectively. T2 and T4 can start when T1 is complete. T3 can start when T2 is complete. A T5 can start when both T3 and T4 are complete. When is the latest start date of the task T3? What is the slack time of the task T4. Identify the critical path in the network & respective critical activities.

Or

- 7.B. Consider the following activity network and draw the corresponding Gantt Chart by considering the activity names and their respective durations in weeks:



Part - C

Attempt 1 question

Each question carries 10 Marks (10 X 1)

- 8.A. A project consists of seven activities with the following time estimates. Calculate critical time duration, standard deviation, variance and thus find the probability that the project will be completed in 30 weeks or less.

Activity	Predecessor Activity	Optimistic time estimate (to days)	Most likely time estimate (tm days)	Pessimistic time estimate (tp days)
A	-	2	5	8
B	A	2	3	4
C	A	6	8	10
D	A	2	4	6
E	B	2	6	10
F	C	6	7	8
G	D, E, F	6	8	10

Or

- 8.B. Draw the activity network diagram (AoE) and determine the critical path for the following project by calculation the parameters as ES, EF, LS, LF and ST –

Activity	Time estimate (Weeks)
1 - 2	5
1 - 3	6
1 - 4	3
2 - 5	5
3 - 6	7
3 - 7	10
4 - 7	4
5 - 8	2
6 - 8	5
7 - 9	6
8 - 9	4