WEST BENGAL UNIVERSITY OF TECHNOLOGY

BCA-403

SOFTWARE PROJECT MANAGEMENT AND QUALITY ASSURANCE

Time Allotted: 3 Hours | Full Marks: 70

The questions are of equal value.
The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.
All symbols are of usual significance.

GROUP A
(Multiple Choice Type Questions)

1. Answer *all* questions. $10 \times 1 = 10$

(i) Which of the following is not a SQA plan for a project?

(A) Evaluations to be performed

(B) Amount of technical work

(C) Audits and reviews to be performed

(D) Documents to be produced by the SQA group

(ii) Who identifies, documents, and verifies that corrections have been made to the software?

(A) Project manager

(B) Project team

(C) SQA group

(D) All of the above

(iii) The primary objective of formal technical reviews is to find _____ during the process so that they do not become defects after release of the software.

(A) errors (B) equivalent faults
(C) failure cause (D) none of the mentioned

(iv) Which type of risk factor is most likely to cause problems for a software project developing commercial software?

(A) Inadequate user documentation (B) Litigation expense
(C) Low productivity (D) Cancellation of project

(v) Which form of software development model is most suited to a system where all the requirements are known at the start of a project and remain stable throughout the project?

(A) Waterfall model (B) Incremental model
(C) Evolutionary model (D) Spiral model

(vi) The number of people required for a software project is determined

(A) after an estimate development effort is made
(B) by the size of the project budget
(C) from an assessment of the technical complexity of the system
(D) all of these

(vii) Alpha testing is done by

(A) customer (B) developer
(C) tester (D) all of these

(viii) COCOMO is a

(A) heuristic estimation technique (B) empirical estimation technique
(C) analytical estimation technique (D) none of these

(ix) The testing process only reveals

(A) failures (B) errors in code
(C) errors in logic (D) none of these

(x) Which is the costliest phase of software development?

(A) Analysis (B) Maintenance
(C) Coding (D) Testing

GROUP B
(Short Answer Type Questions)

Answer any *three* questions. 3×5 = 15

2. What are the roles of a team leader? 5

3. What do you mean by feasibility study? 5

4. What do you know by stub and drivers in integration testing? 2+3

5. What are the four P's of software project management? 5

6. State the advantages and disadvantages of LOC. 5

GROUP C
(Long Answer Type Questions)

Answer any *three* questions. 3×15= 45

7. (a) State the different phases of SDLC.
(b) Distinguish between Quality Control and Quality Assurance. 5+5+5
(c) What are McCall's Quality Factor?

8. (a) What are the different categories of software development projects according to the COCOMO estimation model? 3+8+4
(b) A project size of 350 KLOC is to be developed. Software development team has a moderate experience in developing similar type of projects and the project schedule is not very tight. Compute the effort, nominal development time, productivity and average staff size of the project.
(c) What is the difference between intermediate and advanced COCOMO?

9. Suppose you have the following set of activities and their predecessor, optimistic, pessimistic and most likely time are also given below. 5+5+5

Activity	Predecessor	Optimistic time	Pessimistic time	Most likely time
A	-	2	4	9
B	-	4	4	7
C	A	3	5	8
D	A	4	5	6
E	B,C	4	5	7
F	D	4	6	8
G	E	3	4	8

(i) Find the expected time in each activity and draw the PERT chart.
(ii) What are the earliest and latest start time and earliest completion time for the project?
(iii) Mark the critical path.

10. For how many levels a software product is normally tested? Explain Equivalence Class Partitioning with proper example. Explain Control Flow Diagram with an example. What do you know by Cyclomatic Complexity? 3+5+5+2

11. Write short notes on any *three* of the following: 3×5

(a) Software Quality
(b) Function point Method
(c) Capability Maturity Model
(d) CPM
(e) Gantt Chart