

Name : *(Signature)*

Roll No. :

Invigilator's Signature : *(Signature)*

CS/BCA/SEM-4/BCA-403/2012

2012

**SOFTWARE PROJECT MANAGEMENT &
QUALITY ASSURANCE**

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following :

$10 \times 1 = 10$

- i) Two tools for computing critical path and project completion times from activity networks are
 - a) CPM and PERT
 - b) DRE and SQA
 - c) FP and LOC
 - d) none of these.

- ii) The linear sequential model of software development is also known as the
 - a) Classical life cycle model
 - b) Spiral model
 - c) Waterfall model
 - d) both (a) and (c).

- iii) The number of people required for a software project is determined
 - a) after an estimate of the 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.
- iv) Which of the following items are not measured by software project metrics ?
 - a) inputs
 - b) markets
 - c) outputs
 - d) none of these.
- v) Software reliability problems can almost always be traced to
 - a) errors in requirements gathering
 - b) errors in design and implementation
 - c) human error
 - d) errors in operation.
- vi) Outcome of requirement specification phase is
 - a) design document
 - b) develop an SRS
 - c) test the document
 - d) hand over the document.
- vii) Alpha testing is done by
 - a) customer
 - b) developer
 - c) tester
 - d) all of these.
- viii) PERT stands for
 - a) Project Evaluation and Review Technique
 - b) People Evaluation and Review Technique
 - c) Project Estimation and Review Technique
 - d) Product Evaluation and Review Technique.

- ix) Risk identification involves
- Project Risk
 - Technical Risk
 - Business Risk
 - all of these.
- x) Prototype is a
- mini model of the existing system
 - mini model of the proposed system
 - working model of the existing system
 - none of these.

GROUP - B**(Short Answer Type Questions)**

Answer any *three* of the following. $3 \times 5 = 15$

- a) Compare and contrast waterfall model and spiral model.
- b) What do you mean by perfective maintenance ? $3 + 2$
- a) What do you mean by work breakdown structure ?
- b) Describe Gantt charts briefly. $2 + 3$
- What are the hierarchical orders of "peoples" involved in a software project ? Describe the tasks performed by each type of people in brief. $2 + 3$
- What is SPMP ? Why is it essential in S/W engineering ? $2 + 3$
- What are the 4Ps of Software Project Management ?

GROUP - C**(Long Answer Type Questions)**

Answer any *three* of the following. $3 \times 15 = 45$

- a) What do you mean by software quality ? Explain.
- b) Briefly discuss Mc call's Quality factors.
- c) What are the main functions of Quality Assurance Group (QAG) ? $5 + 5 + 5$

8. a) What is COCOMO model ?
 b) What are the different categories in which product can be classified based on its development complexity ? Explain them in brief.
 c) Write the formulae for development effort and time estimation with respect to basic COCOMO Model.
 d) Assume that the size of an organic software product has been estimated to be 50,000 lines of source code. Assume that the average salary of each software engineer is 18,000 per month. Determine the effort required to develop the software product and the nominal development time.

1 + 6 + 4 + 4

9. Suppose you are project manager of a software project that consists of the following activities :

Activity no.	Activity name	Duration (days)	Immediate predecessor
1	specification	15	-
2	Design database part	45	1
3	Design GUI part	30	1
4	Code database part	105	2
5	Code GUI part	45	3
6	Integrate and Test	120	4, 5
7	Write User Manual	60	1

Draw the Activity Network representation of the project and Gantt chart representation of the project.

4 + 11

10. a) Explain Integration testing. Which types of defects are uncovered during Integration testing ?
 b) Distinguish software verification and validation. When do you perform verification validation in the context of software life cycle ?
 c) Compare and contrast between black box and white box testing of software.

5 + 5 + 5

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

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|-------------|-----------------------|
| a) ISO 9000 | b) Risk management |
| c) PERT | d) Evolutionary Model |
| e) LOC. | |