Name : ....

Roll No. : ....

Invigilator's Signature : ....

2010
SOFTWARE PROJECT MANAGEMENT AND 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 × 1 = 10

   i)   Estimation of development effort for organic is

      a) $2.4\ (\ KLOC\ )^{1.05}$ pm   b) $3.0\ (\ KLOC\ )^{1.12}$ pm

      c) $3.6\ (\ KLOC\ )^{1.20}$ pm   d)   none of these.

   ii)   COCOMO is a/an

      a)   empirical estimation technique

      b)   heuristic technique

      c)   both (a) & (b)

      d)   none of these.

   iii)   To allocate resource to activities we use

      a)   Gantt Chart   b)   PERT Chart

      c)   CPM   d)   none of these.

   iv)   Different phases of risk management are

      a)   risk identification   b)   risk analysis

      c)   risk monitoring   d)   all of these.

v) Type(s) of Project plans is are

    a) configuration management plan

    b) testing plan

    c) staff development plan

    d) all of these

vi) Project size estimation metric is

    a) LOC   b) function point

    c) feature point   d) all of these.

vii) Contingency plan is a risk .... strategy.

    a) planning   b) monitoring

    c) analysis   d) none of these.

viii) Delphi cost estimation is a type of

    a) heuristic technique

    b) analytical estimation technique

    c) empirical estimation technique

    d) all of these.

ix) Alpha testing is done by

    a) Customer   b) Tester

    c) Developer   d) all of these.

x) Prototype is a

    a) mini model of the existing system

    b) mini model of the proposed system

    c) working model of the existing system

    d) none of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following.   3 x 5 = 15

2. What are the important activities that are carried out during Feasibility study ?

3. State the advantages & disadvantages of LOC.

4. What is SPMP ? Why is it essential in s/w engineering ? What do you mean by project planning ?

5. Compare spiral and waterfall models.

6. What are McCall's quality factors ? Distinguish between verification and validation.

GROUP – C

(Long Answer Type Questions)

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

7. a) What is SDLC model ?

   b) What is called meta model and why ? Describe the different activities involved in this model.

   c) State the advantages and disadvantages of evolutionary model. Why is it called incremental model ?

   d) What is phase containment of errors ?

   $$1 + (1 + 1 + 5) + (3 + 2) + 2$$

8. 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. $4 + 11$

9. a) What is COCOMO model ?

b) What are the different categories in which a product can be classified based on its development complexity ?

c) Assume that the size of an organic software product has been estimated to be 32,000 lines of source code. Assume that the average salary of each of software engineers is Rs. 15,000 per month. Determine the effort required to develop the software product and the nominal development time.

d) Explain when to use PERT chart and when to use Gantt chart.   1 + 7 + 4 + 3

10. a) What are the software reliability metrics ?

b) Compare between ISO 9000 certification and SEI/CMM.

11 + 4

11. a) What are the functions of Quality Assurance Group (QAG) ?

b) What are External Quality Assurance (EQA) and Final Inspection (FI) ?

c) Distinguish between quality control and quality assurance.   4 + (3 + 3) + 5