Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/M.Tech (MSS)/SEM-2/MSS-202/2010

2010

SOFTWARE PROJECT AND QUALITY MANAGEMENT

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.

Answer any *seven* of the following questions.

7 × 10 = 70

1. a) What are the major project management activities ? Write down the stepwise algorithm of 'WIDE BAND DELPHI MODEL'. 2 + 3

   b) What is the difference between Software project planning and Schedule ? What are the different types of Task dependencies ? 2 + 3

2. a) Name the different software estimation techniques. What is the difference between top-down and bottom-up estimations ? Define software productivity. 2 + 2 + 1

   b) Critically comment on the following :

   "LOC has important role in Software Cost Estimation." 5

3. What is the difference between Function point and Object point ? Briefly describe 'Albrecht Function Point Analysis' technique. Why is Win-Win Spiral Model advantageous for risk analysis. 2 + 4 + 4

4. Compare the advantages and disadvantages of Network Diagram Vs. Gantt Chart. Estimate a project duration using CPM from the following table data : 2 + 8

Activity	**Precedence**	**Duration (days)**
A	—	100
B	A	25
C	B	15
D	G	30
E	D	31
F	A	35
G	C,F	24
H	D	38
I	A	40
J	D,I	55

5. Define and classify different types of Software risk. What are the major components of Software risk management ? How RRL is calculated ? What attributes are stored beside action plan/tracking documentation ? 2 + 4 + 2 + 2

6. What are the major Software Quality Management Activities ? Show with example how external quality attributes are related to internal quality attributes ? What are cyclomatic complexity and fog index ? Does correctness ensure reliability and vice versa ? 2 + 3 + 2 + 3

7. What is Sampling ? What is Sample Mean distribution ? Sate the Central Limit theorem. Explain how control charts are used in quality measure. State the double sampling plan.

1 + 1 + 2 + 3 + 3

8. Find the probability of the following project to be completed between 18 to 26 days using PERT analysis.

[*Z* table will be supplied]

Activity	Preceding Activity	Completion Times (days)		
		Optimistic	Most Likely	Pessimistic
a	—	5	6	7
b	—	4	5	18
c	a	4	15	20
d	b,c	3	4	5
e	a	16	17	18

10

9. Write short notes on any *two* of the following : 5 + 5

a) Project Crashing

b) Software Quality Specifications in ISO 9000 : 2000

c) CMM Level 5 Software Quality

d) Best agile practices

e) Monitoring Real Time Software System.