B5.1-R4: SOFTWARE PROJECT MANAGEMENT

NOTE:

1. **Answer question 1 and any FOUR from questions 2 to 7.**
2. **Parts of the same question should be answered together and in the same sequence.**

Time: 3 Hours **Total Marks: 100**

1.

a) Listed below are some project management activities in alphabetic sequence. Indicate in what sequence they should be done by writing their number into the PERT chart.
   i) assignment specific individuals to the project
   ii) choose a system development life cycle
   iii) create a project plan
   iv) establish management procedures
   v) estimate the benefits for the project
   vi) identify and assess risks is project management?

b) What is meant by planning? What are the problems with software project from manager's point of view?

c) Match each lifecycle model with its definition given in table below:

(a) code-and-fix	(i) assess risks at each step; do most critical action first
(b) evolutionary prototyping	(ii) build an initial small requirement spec, code it, then "evolve" the spec and code as needed
(c) spiral	(iii) build initial requirement specs for several releases, then design-and-code each in sequence
(d) staged delivery	(iv) standard phases (requirements, design, code, test) in order
(e) waterfall	(v) write some code, debug it, repeat (i.e. ad-hoc)

d) Define Risk Identification. What are the three activities of risk assessment?

e) Compare the Organic and Semi detached COCOMO modes.

f) List the circumstances that can lead to scheduled project delays. What should be the role of project manager in such a situation?

g) Draw a diagram of a typical project life cycle showing all the phases. State advantages for developing a project life cycle.

(7x4)

2.

a) Explain what steps a project manager must take to ensure a smooth project close out and handover.

b) Why is project estimation so hard? Explain in short following project estimation techniques: expert judgement, bottom up and top down.

(9+9)

3.

a) What is a project plan and what does it involve?

b) What is the advantage of using prototype software development model instead of waterfall model? Also explain the effect of defining a prototype on the overall cost of the software project?

c) Define a software process. How do software myths affect a software process?

(6+6+6)

4.

a) Using the information in Table 1, assuming that the project team will work a standard working week (5 working days in 1 week) and that all tasks will start as soon as possible:

Table 1

Tasks	Description	Duration (Working days)	Predecessor(s)
A	Requirement Analysis	5	
B	System Design	15	A
C	Programming	25	B
D	Telecoms	15	B
E	Hardware Installation	30	B
F	Integration	10	C , D
G	System Testing	10	E, F
H	Training/Support	5	G
I	Handover and Go-live	5	H

i) Draw the network diagram.
ii) Determine the critical path of the project.
iii) Calculate the planned duration of the project in weeks.
iv) Identify any non-critical tasks and the float (free slack) on each.

b) Describe a project close out report.

([4+3+3+3]+5)

5.

a) Explain the following:
i) Span and average span size for a program.
ii) Process and project metrics.

b) Compute function point value for a project with the following domain characteristics:
No. of I/P = 30
No. of O/P = 62
No. of user Inquiries = 24
No. of files = 8
No. of external interfaces = 2
Assume that all the complexity adjustment values are average. Assume that 14 algorithms have been counted.

([5+5]+8)

6.

a) Software project planning entails what activities? What are the difficulties faced in measuring the Software Costs?

b) Explain the relationship between:
i) Productivity and difficulty
ii) Time and cost.

(6+[6+6])

7.

a) What do you understand by risk management plan?

b) Explain the risk management process in details. Also discuss what is risk register or log and what it contains.

(6+12)