CE1.4-R4: 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) Who is project manager? What are the functions performed by him?

b) What is project planning? What are the steps in project planning?

c) Discuss various methods to estimate the size of the software?

d) Discuss various activities in software configuration management.

e) Discuss various issues with the allocation of resources for undertaking project activities.

f) What is contract management? Discuss various activities performed in contract management.

g) What are critical paths? Discuss how they are useful?

(7x4)

2.
a) What are risks? Discuss various activities involved in risk management.

b) Assume that the software team defines a project risk with 80 % probability of occurrence of risk in the following manner: Only 70 percent of the software components scheduled for reuse will be integrated into the application and the remaining functionality will have to be custom developed. If 60 reusable components were planned with average component size as 100LOC and software engineering cost for each LOC as $14, then calculate the risk exposure.

(9+9)

3.
a) What are various approaches for activity planning discuss using suitable example.

b) How work break down structure and product break down structure differs?

(9+9)

4.
a) Discuss the steps in undertaking the recruitment process?

b) Discuss the various types of organizational structures? Consider that you got a new team of 10 members, with each member belonging to different continent. Discuss the various problems that may arise while leading this group. What activities would you undertake to resolve any conflict that may arise in a group? How will you motivate this group and undertake effective decision making in ever changing software development and external competitive environment?

(6+12)

5.

a) Discuss how the dependencies of the project are represented using network models? What are various representation approaches?

b) Draw network diagram and identify critical path. The activities of project along with their dependencies and duration are given below ("d" represents the days).

Activity	Duration	Predecessor
A	2 d	
B	1 d	A
C	6 d	A
D	6 d	C
E	4 d	B
F	2 d	A
G	3 d	D,E,F,H
H	2 d	

(9+9)

6.

a) Why is Putnam estimation model used? Using this model, derive an expression for number of persons employed at peak, total project cost and delivery time. Using the results of this model, find the peak manning if the project is planned to cost 95 MY in the period of 1 year and 9 months. You can assume the value of constant "e" to be 2.72.

b) Write a short note on COCOMO model.

(9+9)

7.

a) Write generic activities in software quality assurance (SQA).

b) Write a short note on Capability Maturity Model Integration (CMMI).

(9+9)