BE6-R3: SOFTWARE PROJECT MANAGEMENT

NOTE:

1. **Answer question 1 and any FOUR questions from 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) Object-oriented software development brings out the scope of improvement in the software project economics – Discuss.

b) Which life cycle model would you follow for developing a decision support system for managers? Enumerate the reasons for your choice.

c) Is it possible to interchange software engineers at any time in the course of a software project?

d) Describe the key processes and outputs of the project closing process.

e) What are the most important functions of software project planning?

f) What are some project-related cost factors of a software cost estimation model?

g) What are some common software defects? Also mention how these defects distributed across different phases of software development.

(7x4)

2.

a) Name the different software production process models. Bring out a comparison of these process models.

b) Do you agree with the statement "All software projects can be managed with the help of evolutionary model of software development". Justify your answer.

(12+6)

3.

a) Define risk in the context of software project management. What are the top 10 risks in software projects?

b) What are the different activities involved in the process of risk analysis and management of software projects? Discuss them in detail.

c) What is a risk management and monitoring plan?

(5+10+3)

4.

a) What purpose does software metrics serve? Define product metrics and process metrics for software.

b) What are some well-known product and process metrics for software? Discuss in detail.

(6+12)

5. A software development project is planned for a small store. The activities, time requirements, and precedence relations are as under:

Activity Number	Name	Duration	Precedence Relationships
A	Find information needs	3 weeks	-
B	Analyse store operations	4 weeks	-
C	Define subsystems	3 weeks	A
D	Develop database	4 weeks	A
E	Identify constraints	1 week	B
F	Develop programs	10 weeks	C,D,E
G	Write manual	10 weeks	B
H	Integration and test	3 weeks	F
I	Implementation	2 weeks	G,H

a) Draw the project network. Find Early and Late Schedule for each of the activities. Find out the project completion time and the critical path.

b) If only one analyst is available to carry out the activities 3 and 4, i.e. activity 4 cannot be started until activity 3 is completed, will there be a change in the network? If so, draw the revised network, find out the revised Early and Late start schedules, and compute the new project completion time.

(10+8)

6.

a) What does COCOMO stand for? What is its use?

b) Two software managers separately estimated a given project to be of 15,000 and 20,000 lines of codes respectively. Bring out the Effort and Schedule time implications of their estimation using COCOMO. For the Effort estimation, use coefficient values of 3.2 and 1.05. For the schedule time estimation use 2.5 and 0.38 respectively. Assume all adjustment multipliers to be equal to unity.

c) Distinguish between ‘Change Control’ and ‘Version Control’.

(6+8+4)

7.

a) What do you mean by software project planning? What broad activities does it include?

b) Identify the role of the project manager in the software planning process.

c) What are the four most important project dimensions? Bring out their importance in the context of software projects.

(6+4+8)