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)   Why is it important to carry out most software development work in the project mode? How are software project management issues different for in-House project and work on hire project?
b)   Which software process model is being usually followed for the development of software for financial accounting?
c)   What is work breakdown structure? What is its use?
d)   Name some important software project estimation techniques and their limitations.
e)   Discuss, how a software project manager mitigates people related risks.
f)   Do you agree with the statement that an easy and useful way to estimate software efforts and costs is to estimate the lines of code of the software? If not, then illustrate its limitations as related to different type of projects.
g)   How is water fall model different from V-shaped software development model?

(7x4)

2.
a)   What is software planning? Write down main features of good software planning.
b)   What are the principles of Business process re-engineering?
c)   Critically evaluate the reuse of software as a software development option.

(6+6+6)

3.
a)   Define project. Bring out the difference between a construction project and a software project.
b)   There are four important dimensions of a software projects – people, process, product and technology. Discuss the implications of the technology dimension for the success of a software project.
c)   What is software project management life cycle? Explain the prototype model of software development? Which are the cases in which this model is an appropriate model?

(6+6+6)

4.   The following data pertains to a software project:

Activity number	Activity Name	Duration (weeks)	Immediate Predecessor
A1	Get requirements	3	-
A2	Analyse operations	5	-
A3	Define modules	2	A1
A4	Develop database	5	A1
A5	Make decision analysis	4	A2
A6	Identify constraints	2	A5
A7	Build module 1	10	A3, A4, A6
A8	Build module 2	12	A3, A4, A6
A9	Write report	12	A6
A10	Testing and Integration	10	A7, A8
A11	Implementation	4	A9, A10

a) Draw the project network. Find out the project completion time.
b) Find the critical path and the corresponding critical activities of the project.
c) If the activities A7 and A8 cannot be carried out simultaneously because of the availability of inadequate number of software engineers, find out the new project network. What will be the new project completion time? What is the new critical path?

(9+3+6)

5.
a) What do you mean by risks in software projects? How will you identify risks in the context of software projects?
b) What is risk assessment and control? What procedure is usually followed?
c) How will you track project-related risks in a software project?

(8+6+4)

6.
a) Compare and contrast between COCOMO and Function point Model of Software Sizing.
b) A software project, to be developed using C language, is estimated at 400 Function Points. If a software engineer costs Rs. 1,00,000 per month, find out an estimate of the cost and the time of developing the software. Also estimate the number of software engineers required. For software projects developed using C language, assume 1 Function point equals to 50 Lines of Code.
c) How will you monitor the progress of a software project that is already behind the original schedule?

(8+6+4)

7.
a) What purpose does software metrics serve? Define product metrics and process metrics for software.
b) Discuss the key questions important in the context of project closure.
c) What is the relationship between Schedule Pressure and Software Project Management? Discuss.

(6+6+6)