

## 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) State the meaning and principles of software engineering.
  - b) Define process, product, project and quality.
  - c) State the various criteria for completeness in the WBS.
  - d) Justify – ‘Do it twice’.
  - e) Explain the meaning of project costing with an example.
  - f) State the major reasons of delay in a software project.
  - g) What do you mean by the term ‘Payback Analysis’? Why is it carried out?

**(7x4)**
  
2.
  - a) Define the term ‘Software Project’. State the necessary requirements for any quality improvement process to be successful.
  - b) Explain the prototyping model with its advantages and disadvantages.
  - c) What is Project Management Plan? Why is it required?

**(7+7+4)**
  
3.
  - a) Discuss the key risk factors involved in a software project.
  - b) Explain in brief about various activities involved in a software project.
  - c) What is WBS? How does it help in managing a large software project?

**(6+6+6)**
  
4.
  - a) Discuss the role of algorithmic methods and automated estimation tools in software project economics.
  - b) Explain Earn Value Analysis Techniques for project monitoring.
  - c) What is Function-point? How does it help in cost estimation?

**(8+6+4)**
  
5.
  - a) State the role of measures, metrics and indicators. Discuss various metrics related to process and product.
  - b) Explain five basic parameters which are mainly used as a function while estimating software cost.

**(9+9)**

6

- a) Explain the use of PERT charts with an example.
- b) Consider the following activities of a particular software project:

Activity No.	Activity Name	Duration (days)	Immediate predecessor
1.	SRS	15	-
2.	Database Design	25	1
3.	System Design	25	1
4.	Detailed Design	30	3
5.	Coding	75	2, 4
6.	Testing	150	5
7.	Implementation	10	6

Do the following:

- i) Draw activity network representation of the project.
  - ii) Find earliest start (ES) time, earliest finish (EF) time, latest start (LS) time, latest finish (LF) time and slack time (ST) for each activity.
- Find the critical path.
- c) Discuss the meaning of Defect and Defect Density with an example.

**(6+8+4)**

7.

- a) Define the terms risk and risk management. Explain various activities involved in risk management of a software project.
- b) Discuss the issues involved in managing Web-based projects.
- c) Consider a project with the following functional units along with complexity value:

Functional Units	Value of Functional Unit	Weighting Factors
No. of user inputs	35	3
No. of user outputs	25	2
No. of user enquiries	20	5
No. of user files	04	12
No. of external interfaces	03	8

Assume that the value of Complexity Adjustment Factor (CAF) is 1.00. Calculate the value of function point (FP) for the project.

**(6+6+6)**