

(2½ Hours)

[Total Marks: 75]

- N. B.: (1) **All** questions are **compulsory**.
 (2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
 (3) Answers to the **same question** must be **written together**.
 (4) Numbers to the **right** indicate **marks**.
 (5) Draw **neat labeled diagrams** wherever **necessary**.
 (6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt any three of the following:

- Define project. Discuss some characteristics of software project which make them more difficult to manage compared to other projects.
- Name different. Give very brief description of all the phases of Project Management Life Cycle (2 to 3 lines) and explain W5HH principle.
- Define Business Case. Specify the content of business case document.
- Write a short note on Portfolio Management.
- Define Net Profit, Payback Period and Returns on Investment. Calculate these values for the following cash flow forecast of a project.

Year	Cash-flow
0	- 1,00,000
1	20,000
2	30,000
3	20,000
4	30,000
5	60,000

- Outline the general approach that might be taken for project planning in an organized step by step manner.

2. Attempt any three of the following:

- Describe briefly five steps of project analysis.
- Explain Scrum. What do you understand by the term 'ceremonies' in a Scrum project? Explain different types of ceremonies observed in a Scrum Project.
- Discuss eight core Atern principles.
- Discuss Capers Jones estimating rules of thumb.
- What are the problems generally faced during effort estimation?
- Explain briefly Albrecht/IFPUG function points and solve the following :-

For an organization, the following table summarizes the weightings to be used for computing function points measures of a software development project. The organization has undertaken the development of a software having the following characteristics:-

Number of user inputs	- 10(simple)
Number of user outputs	- 7 (simple)
Number of user inquiries	- 3 (average)
Number of files	- 6 (average)
Number of external interfaces	- 1 (complex)

Calculate unadjusted function point measure of the size of the software system?

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3. Attempt **any three** of the following:

15

- a. Using the data in the following table, answer the questions given below

ACTIVITY	DURATION	PREDECESSORS
A	6	-
B	8	-
C	3	A
D	5	B
E	4	C, D

- i) Create a precedence activity network
 ii) What is the total project duration?
 iii) Calculate earliest start date, latest start date and float of all the events.
 iv) Identify the critical path.
- b. Define activity. Discuss three approaches to identify the activities.
- c. Suppose four risks namely R1, R2, R3 and R4 have been identified and assigned the probabilities of occurrence of 0.1, 0.2, 0.3 and 0.4 respectively. The likely damages due to the four risks are Rs. 50, 000; Rs. 1, 00,000; 70,000; 60,000 respectively. Calculate the risk exposure of all the risks.
- d. Define Risk and discuss the ways of dealing with them.
- e. Explain the process of scheduling resources.
- f. Discuss the factors to be taken into account while allocating individuals to task.

4. Attempt **any three** of the following:

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- a Explain the change control process.
- b Define the following:- i) Schedule Variance ii) Cost Variance iii) Earned Value
 iv) Schedule performance index v) Cost performance index
- c Explain briefly all the stages in Contract Placement.
- d Define Contract. Classify contracts on the basis of payment to suppliers.
- e Explain general recruitment process.
- f Discuss the factors of job satisfaction given by Oldham-Hackman. Also state the methods of improving motivation.

5. Attempt **any three** of the following:

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- a What do you mean by team structure? Explain different types of team structures.
- b Explain five basic stages of Team development. Also state the different types of people needed to form a balanced team.
- c What is the importance of Software Quality? Discuss six major external software quality characteristics identified by ISO 9126.
- d State four popular process capability models and explain any one of them.
- e Give a brief explanation of the main activities involved in Software Testing
- f Discuss the main reasons for project closure.