Duration: 3 hours   [Max Marks: 80]

N.B.: (1) Question No 1 is Compulsory.
      (2) Attempt any three questions out of the remaining five.
      (3) All questions carry equal marks.
      (4) Assume suitable data, if required and state it clearly.

			Marks
Q1.		**Attempt any four**	
	a.	Explain Blockchain CAP theorem with relationship diagram of CAP.	5
	b.	Discuss Incentive based Engineering in Bitcoin.	5
	c.	Explain Hyperledger Fabric Channels.	5
	d.	List the key characteristics of ICO.	5
	e.	Enumerate the different advantages of Blockchain with Cybersecurity.	5
Q2.	a.	Explain different node types and their roles in bitcoin. What is the Extended bitcoin network?	10
	b.	Describe the Architecture of Hyperledger Fabric Blockchain.	10
Q3.	a.	How to create an account on Metamask (Ethereum Wallet). List and explain different testnets for deployments.	10
	b	Discuss Bitcoin Mining steps to validate the block. What is the difficulty level and how does it calculate in terms of bitcoin?	10
Q4	a.	What is consensus? List and explain permissioned and permissionless consensus algorithms.	10
	b.	Define Blockchain Technology. Compare different types of blockchain systems.	10
Q5	a.	Differentiate between ERC20 & ERC721. Demonstrate NFT with small code.	10
	b.	Explain different components of Ethereum in detail.	10
Q6	a.	Explain Wallet Technologies in Bitcoin	10
	b.	Discuss Structure of a Block, Genesis Block, Linking Blocks in the Blockchain, Merkle Tree.	10

Paper / Subject Code: 53172 / Big Data Analytics (DLOC - V)

Program Code— IT01238
Q. P. Code— 10082370
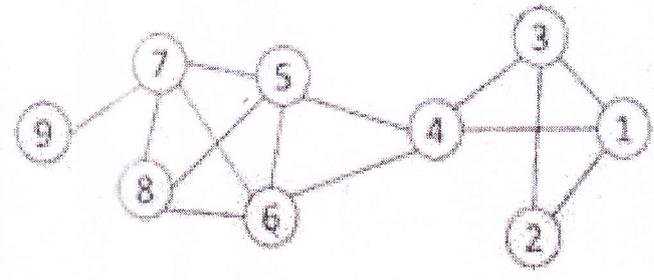
Time: 03 Hours   Marks: 80

Note: 1. Question 1 is compulsory
       2. Answer any three out of the remaining five questions.
       3. Assume any suitable data wherever required and justify the same.

Q1   Explain   [20]
       a) Big Data and its characteristics
       b) Distance measures for Big Data
       c) Similarity measure can be used in an application to find plagiarism in documents
       d) How failures are handled in MapReduce job

Q2   a) Draw and explain Hadoop ecosystem showing all components   [10]
       b) Explain Issues in Data stream query processing   [10]

Q3   a) Write a Map reduce pseudo code to multiply two matrices. Illustrate with an example
          showing all the steps.   [10]
       b) Explain Column family store and Graph Store NoSQL architectural pattern with
          example.   [10]

Q4   a) Explain PCY algorithm and its 2 types with neat labeled diagram.   [10]
       b) Explain HITS algorithm with example.   [10]

Q5   a) Explain Collaborative filtering system. How is it different from content   [10]
       based system.
       b) What is clique percolation method. Write an algorithm on (CPM).   [10]
          Also show how the CPM finds clique for the following graph. Explain with steps.

Q6   a) Explain DGIM algorithm.   [10]
       b) Explain CURE algorithm.   [10]

****

Paper / Subject Code: 53179 / Cloud Computing and Services (DLOC - VI)

Qp: 83521

Duration: 3 hours   [Max Marks: 80]

N.B. : (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required, and state it clearly.

Q.1 Answer any four questions. Each question carries five marks.   [20 M]

    A   Explain the need of Cloud Computing and what are its components.
    B   Explain NIST Architecture of Cloud Computing.
    C   Draw and explain KVM Architecture in details.
    D   Write a short note on DynamoDB.
    E   Describe CloudWatch in Cloud Computing.

Q.2   Answer the following.
    A   What is Virtualization? Explain Characteristics of virtualized   [10 M]
        environment and compare with it cloud computing?
    B   Explain Implementation Levels of Virtualization in detail.?   [10 M]

Q.3   Answer the following.
    A   Explain Everything as a Service (XaaS) along with SPI model of Cloud   [10 M]
        Computing.?
    B   Discuss Analytics as a Service and Backup as a Service with examples.?   [10 M]

Q. 4   Answer the following.
    A   Illustrate the different types of Instances in detail with Instance life   [10 M]
        cycle?
    B   Describe EBS and S3 Storage services and state how they differ?   [10 M]

Q. 5   Answer the following.
    A   Evaluate Serverless Computing with AWS Lambda?   [10 M]
    B   Describe OpenStack Architecture with its components in detail?   [10 M]

Q. 6   Answer the following.
    A   Explain Privacy Concerns in the cloud with Legal and Regulatory   [10 M]
        Implications?
    B   Explain Different types of security in cloud, attacks, and vulnerabilities?   [10 M]

X822Y5A4E8CX822Y5A4E8CX822Y5A4E8CX822Y5A4E8C

Paper / Subject Code: 53180 / Institute Optional Course-2: Project Management

Time: 3-hour

Max. Marks: 80

N.B.: (1) Question **NO. 1** is Compulsory.
(2) Attempt any **THREE** questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required, and state it clearly.
(5) Notations carry the usual meaning.

Q. 1   Answer any **FOUR.**   20
   a. Explain the necessity of project management in achieving organizational goals.
   b. What is Goldratt's critical chain method?
   c. What are the numeric and non-numeric models of project selection?
   d. What is concurrent engineering?
   e. Explain various Reasons for project termination.
   f. Define scope creep. What are two ways to control it in a project?

Q.2   a. Describe the typical and atypical project life cycles, highlighting the stages in the   10
         stage-gate process.

      b. Assume that ABC Inc. is considering two projects, namely Project X and Project   10
         Y, and wants to calculate the NPV for each project. Both project X and project Y
         are four-year projects, and the cash flows of both projects for four years are given
         below:

Year	Project A Cash Flows in Rs.	Project B Cash Flows in Rs.
1	5000	1000
2	4000	3000
3	3000	4000
4	1000	6750

         The firm's cost of capital is 10% for each project, and the initial investment
         amount is Rs.10,000. Calculate the NPV of each project and determine in which
         project the firm should invest.

Q.3   a. What are the advantages and risks of outsourcing in project management?   05

      b. List the key components of a project communication plan.   05
      c. Describe the methods of project cost estimation and differentiate between top-   10
         down and bottom-up budgeting approaches.

Q.4   a. What are the different types of contracts? Draw the graph showing risk exposure   10
         to the buyer and seller in various contract types.

10

b. A small project consisting of ten activities has the following characteristics:

Activity	Preceding Activity	Time Estimate weeks		
		Optimistic	Most likely	Pessimestic
A	–	4	5	12
B	–	1	1.5	5
C	A	2	3	4
D	A	3	4	11
E	A	2	3	4
F	C	1.5	2	2.5
G	D	1.5	3	4.5
H	B,E	2.5	3.5	7.5
I	H	1.5	2	2.5
J	F,G,I	1	2	3

Determine the critical path.

Q.5   a. Explain the Probability and impact matrix. What are the risk response strategies for negative risks(threats) and positive risks(opportunities).   10

       b. Explain the four stages of team development and growth.   10

Q.6   a. Discuss the various reasons for project termination and explain different types of project termination.   10

       b. Explain the importance of ethics in projects.   05

       c. Explain the Triple constraint of project management in brief.   05

X822YF0E8C9X822YF0E8C9X822YF0E8C9X822YF0E8C9