BE/IT/sem-VIII/CBCGS/FM/FH-2022 30/05/2022

QP-94072

University of Mumbai
Examination June 2021
Examinations Commencing from 15th May 2022
Program: **_B.E (Mechanical Engineering)__**
Curriculum Scheme: **Rev2016**
Examination: **BE Semester VIII**
Course Code: **_ILEC II_** and Course Name: **_Finance Management__**
Time: 2 hour 30 minutes Max. Marks: 80

Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	The long-run objective of financial management is to
Option A:	Maximize earnings per share
Option B:	Maximize the value of the firm's common stock
Option C:	Maximize return on investment
Option D:	Maximize market share
2.	The regulator for Primary and secondary market is
Option A:	IRDA
Option B:	SEBI
Option C:	RBI
Option D:	CRISIL
3.	A low risk-taking individual will most probably invest in which of these instruments:
Option A:	Equity
Option B:	Debt
Option C:	Fixed Deposits
Option D:	Mutual Funds
4.	Axis Bank, PNB, SBI, ICICI are:
Option A:	Foreign Banks
Option B:	Public Sector Banks
Option C:	Commercial Banks
Option D:	Private Sector Banks
5.	With a well-diversified portfolio, an investor can reduce
Option A:	Unsystematic risk
Option B:	systematic risk
Option C:	Market Risk
Option D:	finance risk
6.	Relationship between annual nominal rate of interest and annual effective rate of interest, if frequency of compounding is greater than one

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Option A:	Effective rate < Nominal rate
Option B:	Effective rate = Nominal rate
Option C:	Effective rate > Nominal rate
Option D:	can't be determined
7.	Patents, Copyrights and Trademarks are
Option A:	Current assets
Option B:	Fixed assets
Option C:	Intangible assets
Option D:	Investments
8.	Working capital management is concerned with the inter-relationship existing between
Option A:	Total assets and total liabilities
Option B:	Total assets and current liabilities
Option C:	Current assets and total liabilities
Option D:	Current assets and current liabilities
9.	The Internal Rate of Return is defined as
Option A:	the discount rate which causes the payback to equal one year.
Option B:	the discount rate which causes the NPV to equal zero.
Option C:	the ROE when the NPV equals 0
Option D:	the ROE associated with project maximization
10.	Which of the following are NOT functions of a financial system?
Option A:	The operation of a payments system.
Option B:	Providing the means of portfolio adjustment.
Option C:	Helping to reduce unemployment.
Option D:	Channelling funds between lenders and borrowers.

Q2	**Attempt any two 10 marks each**
a).	Distinguish between equity & debt instruments. (10 marks)
b).	The expected cash flows of a project are as follows

Year	0	1	2	3	4	5
Cash flow	-100000	20000	30000	40000	50000	30000

The cost of the capital is 12 percent. Calculate the NPV and IRR of the project (10 marks)

c).	What are leverage ratios? Explain any two types of the same.
Q3	**Attempt any two 10 marks each**
a).	Financial statements of XYZ company reveals following information. Balance sheet (10 marks)

Liabilities	2019	Assets	2019
Current Liabilities		Current Assets	

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Accounts payable	60	cash and equivalents	10
Accruals	140	Accounts Receivble	375
Notes Payable	110	Inventories	615
Total CL	**310**	**Total CA**	**1000**
Long Term Bonds	750	Net Fixed Assets	
Total Liabilities	**1060**	Plant and equipment	1000
Common equity		less depri	0
Common stock(50 million shares)	130	Other assets	0
Retained Earnings	810	**Total Assets**	**2000**
Total Common Equity	940		
Total Liabilities and equity	**2000**		

P & L statement

	2019
Net Sales	**3000**
Operating cost except depreciation and amortization	2616.2
Depreciation and Amortization	100
Total operating cost	**2716.2**
Operating income EBIT	**283.8**
less Interest	88
EBT	**195.8**
Less Tax(40%)	78.32
Net Income	**117.48**
less Retained earnings	60
Total Dividend	57.48

Find out following ratios from the given data.

a) Current Ratio
b) Inventory Turn Over Ratio
c) Debt – Equity Ratio.
d) Net Profit Margin Ratio
e) Interest coverage Ratio.

b).	Briefly explain the types of financial services
c).	Differentiate between ordinary annuity and annuity due with examples.
Q4	**Attempt any two** **10 marks each**
a).	Explain various Financial Instruments in detail
b).	Define risk and return. Explain Measurement of Historical Returns and Expected Returns of a Single Security and a Two-security Portfolio
c).	What is Capital Budgeting? Discuss the various factors that influence the capital budgeting decisions.

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BE | IT | sem-VIII / CBCGS / PM / FH-2022 30/05/2022

QP-93987

University of Mumbai

Examinations Summer 2022

Time: 2 hour 30 minutes

Max. Marks: 80

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Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	Which is an example of Triple Constraint?
Option A:	Scope, Human Resource, Time
Option B:	Quality, Scope, Human Resource
Option C:	Cost, Human Resource, Time
Option D:	Scope, Cost, Time
2.	You are responsible for a project with high risks particularly during the early phases - your sponsor has asked for performance reports on a monthly basis. At the end of the first month you report a CPI greater than 1 and also the SPI greater than 1. What would this mean?
Option A:	The project is behind schedule and over budget
Option B:	The project is ahead of schedule and under budget
Option C:	The project is ahead of schedule but over budget
Option D:	The project is behind schedule but under budget
3.	Why does activities on critical path of a CPM network are called critical
Option A:	They represent maximum project completion time
Option B:	They cannot tolerate any delay in completion
Option C:	They consume maximum resources
Option D:	These are most complex activities on project
4.	A risk is known as Positive risk or opportunity if-
Option A:	Impact is negative which you want to lessen its impact
Option B:	Impact is positive which you want to lessen its impact
Option C:	Impact is negative which you may want to actualize
Option D:	Impact is positive which you may want to actualize
5.	The lowest element in the hierarchical breakdown of the WBS is
Option A:	Deliverable
Option B:	Work package
Option C:	Responsibility matrix
Option D:	Bottoms up budget
6.	When many activities are planned to start at the same time in project schedule, the project is likely to be following
Option A:	Concurrent Engineering
Option B:	Research and Development Project
Option C:	Goldratt's Critical Chain
Option D:	laddering approach
7.	The payback period for a project
Option A:	is the internal rate of return that is the discount rate that equates the present values of the two sets of flows.
Option B:	is the discounted cash flow method determines the net present value of all cash flows by discounting them by the required rate of return
Option C:	is the initial fixed investment in the project divided by the estimated annual net cash

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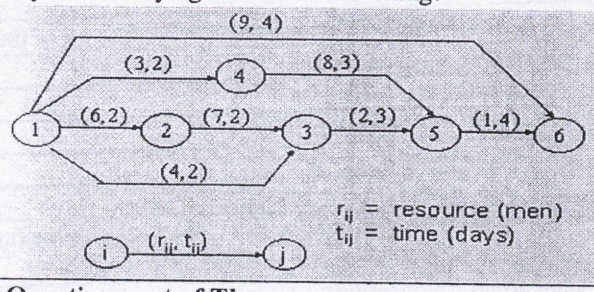
	inflows from the project.
Option D:	is also known as the benefit–cost ratio
8.	A project is over budget when
Option A:	CPI > 1
Option B:	SPI > 1
Option C:	CPI and SPI > 1
Option D:	CPI less than 1
9.	Select the correct statement from the following
Option A:	There is always only one critical path in the network
Option B:	A path is called a critical path if it is the longest path in a project network
Option C:	Slack or float of dummy activity is always equal to zero
Option D:	Crashing cost linearly increases with no of days crashed
10.	Project closure when the project is completed as planned is
Option A:	Failed projects
Option B:	Premature closure
Option C:	Abnormal closure
Option D:	Normal closure

Q2	**Solve any Two Questions out of Three**	**10 marks each**
A	Explain stages of team development and growth? What are advantages of and barriers to team effectiveness?	
B	Explain Probability and impact matrix. What are the risk response strategies for negative risks (threats) and positive risks(opportunities)?	
C	List and briefly describe the ways projects may be terminated. What are some non-technical reasons for project termination?	
Q3	**Solve any Two Questions out of Three**	**10 marks each**
A	Differentiate between the Functional, Pure Project and Matrix organizations.	
B	What is crashing of the project? Explain with a small example the process of crashing	
C	Draw resource loading diagram for the following project. Adjusting the activity floats, and level the resources to the best possible loading. How many men are required to complete this project in 11 days after carrying out resource levelling? 	
Q4	**Solve any Two Questions out of Three**	**10 marks each**
A	A project in its 26th week has an actual cost of Rs.270,000/-. It was scheduled to have spent Rs.260,000/-. For the work performed the budgeted value is Rs. 272,000/-. What are cost and schedule variances for the project? What is the SPI, CPI and CSI? Comment on the status of the project based on your earned value analysis.	
B	Why negotiations are important in Project Management? Why Win-Win strategy is adopted in project management for negotiations	
C	What does project audit tries to find out? How do project audit recommendations help the project? What are types of project audits based on the depth of audit?	

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University of Mumbai

Examinations Summer 2022
Program: IT01028
Curriculum Scheme: Rev2016
Examination: BE Semester VIII
Course Code: 52965 and Course Name: Environmental Management

QP-93764

Time: 2 hour 30 minutes **Max. Marks: 80**

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	The Bhopal gas Tragedy in 1984 is related to--
Option A:	Nuclear disaster
Option B:	Earthquake disaster
Option C:	Man-made disaster
Option D:	Floods
2.	The government of India enacted EPA of 1986 under article___ of the constitution
Option A:	253
Option B:	251
Option C:	249
Option D:	51A
3.	The primary agenda of the Kyoto protocol is:
Option A:	Regulation of hazardous wastes
Option B:	Regulate the production of nuclear energy
Option C:	Control anthropogenic sources of greenhouse gases
Option D:	Control of the worldwide Energy consumption
4.	Which of the following is a prime health risks associated with greater UV radiation through the atmosphere due to depletion of ozone layer?
Option A:	Damage to digestive system
Option B:	Increased liver cancer
Option C:	Increased skin cancer

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Option D:	Neurological disorder
5.	P-D-C-A stands for:
Option A:	Plan-Do-Check-Act
Option B:	Plan-Do-Correct-Act
Option C:	Proceed-Do-Check-Act
Option D:	Proceed-Do-Correct-Act
6.	The combination of all factors that act to limit the growth of a population is:
Option A:	Carrying capacity
Option B:	Environmental resistance
Option C:	Biotic potential
Option D:	Logistic growth
7.	In acid rain PH of water is:
Option A:	Less than 5.6
Option B:	Around 7
Option C:	More than 7
Option D:	around 14
8.	Environment Impact assessment (EIA) is done
Option A:	Before the project
Option B:	After the project
Option C:	During the project
Option D:	Any time in life cycle of project
9.	Energy conversation act was formed in year
Option A:	1997
Option B:	2000

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Option C:	2001
Option D:	1999
10.	The Minamata Disease was caused due to:
Option A:	Methyl Isocyanate
Option B:	Mercury
Option C:	Benzene
Option D:	Lead

Q.2 (A)	**Solve any two of the following:**	**(10M)**
i)	*What are the aspects of Environment Management & challenges faced in it?*	
ii)	*Write a note on loss of Bio-diversity.*	
iii)	*Discuss the EMS certification.*	
(B)	**Solve any one of the following:**	**(10M)**
i)	Discuss the Environmental issues relevant to India.	
ii)	Write a note on the role of government as a planning & regulating agency.	

Q3 (A)	**Solve any two of the following:**	**(10M)**
i)	*Define: Limiting factors & Carrying capacity. Discuss their relation with the environment.*	
ii)	*What are the features of Environment Protection Act, 1986.*	
iii)	Discuss the role of Central Pollution Control Board (CPCB) in pollution monitoring.	
(B)	**Solve any one of the following:**	**(10M)**
i)	*What is ISO-14000? How does adoption of ISO-14000 practices benefit the Industries as well as the Environment?*	
ii)	*What is Hazardous Waste? Note the different health risk caused by it. How does it affect the environment?*	

Q4. (A)	**Solve any two of the following:**	**(10M)**
i.	*Write a note on the Water(Prevention& control of Pollution)Act.*	
ii.	*Define Ecosystem. What are the components of Ecosystem?*	
iii.	Differentiate between: Industrial Disasters & Man-made disasters	
B	**Solve any One**	**(10M)**
i.	*What is sustainable development? Is sustainable development necessary? What are the parameters affecting it?*	
ii.	*Write a note on; Total Quality Environmental Management & Corporate Environment Responsibility.*	

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QP-93946

University of Mumbai

Examinations Summer 2022

Time: 2 hour 30 minutes

Max. Marks: 80

Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	The Design Council of the UK proposed the double-diamond of design which has four phases. Their sequential steps are
Option A:	Define -> Discover -> Develop -> Deliver
Option B:	Discover -> Define -> Develop -> Deliver
Option C:	Discover -> Develop -> Define -> Deliver
Option D:	Define -> Develop -> Discover -> Deliver
2.	Which of these is not a usability goal?
Option A:	Effectiveness
Option B:	Safety
Option C:	Learnability
Option D:	Portability
3.	An outline of what people can do with a product and which concepts are needed for the user to understand how to interact with it is known as:
Option A:	Concept
Option B:	Conceptual Design
Option C:	Conceptual Model
Option D:	Conceptual list
4.	_____ is what goes on in our heads when we carry out our everyday activities.
Option A:	Interaction
Option B:	Cognition
Option C:	Motivation
Option D:	Conceptualization
5.	Operations like Selecting, dragging, opening, closing, zooming in and out using touch gestures on a smartphone are all examples of which type of interaction
Option A:	Instructing
Option B:	Manipulation
Option C:	Conversing
Option D:	Exploring
6.	According to UID Theory, What is pilot study?
Option A:	study done before the main study
Option B:	study done after main study
Option C:	study done with main study
Option D:	study done after feedback
7.	_____ means to employ different data gathering techniques.
Option A:	Triangulation of data
Option B:	Investigator triangulation
Option C:	Triangulation of theories
Option D:	Methodological triangulation

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8.	A Prototype is important as it provides a .....
Option A:	Mini-Model of existing System
Option B:	Manifestation of a design that allows stakeholders to interact with it and to explore its suitability
Option C:	Working Model of existing System
Option D:	can be applied only to the newly created product
9.	Which of the following does not include in Shneiderman's 8 golden rules?
Option A:	Support internal locus of control
Option B:	Permit easy reversal actions
Option C:	Offer informative feedback
Option D:	Maintain the System frequently
10.	In a heuristic evaluation:
Option A:	A group of psychologists administer a questionnaire
Option B:	A group of usability experts review a user interface according to a small set of principles
Option C:	A group of test users conduct a formal experiment
Option D:	A group of usability experts judge an interface with a detailed checklist of guidelines

Q2. (20 Marks)	**Solve any Two Questions out of Three** **10 marks each**
A	Describe four basic activities of Interaction Design.
B	Compare Controlled Setting, Natural Setting, and Any Setting Evaluation.
C	What do you mean by low-fidelity and high-fidelity prototyping? Explain with examples.

Q3. (20 Marks)	**Solve any Two Questions out of Three** **10 marks each**
A	Write a note on 10 heuristics by Nielsen.
B	List various usability inspection methods and summarize cognitive walkthrough techniques.
C	Describe in detail Cognitive Frameworks.

Q4 (20 Marks Each)	
A	**Solve any Two** **5 marks each**
i.	Write a note on Good Error Messages with examples
ii.	Explain Wireframe with suitable example.
iii.	What is DECIDE framework? Explain.
B	**Solve any One** **10 marks each**
i.	Define usability and identify the most relevant usability goals for Ecommerce website. Also Justify.
ii.	Write a note on different interview styles.

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BE|IT|Sem-VIII/CBCGS|IOE|FH-2022 20/05/2022

QP - 93285

University of Mumbai
Examination 2022
Program: Information Technology
Examination: BE Semester VIII
Course Code: ITC802 and Course Name: **Internet of Everything**
Time: 2 hour 30 minutes Max. Marks: 80

Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	---------- act as primary devices to collect data from the environment.
Option A:	Machines
Option B:	Antenna
Option C:	Sensors
Option D:	Switch
2.	Which RFID tag does not need an embedded power?
Option A:	Active
Option B:	Passive
Option C:	Semi-Passive
Option D:	Semi-Active
3.	Pure ALOHA is based on
Option A:	CDMA
Option B:	TDMA
Option C:	FDMA
Option D:	SDMA
4.	MQTT topics are
Option A:	Simple floating point
Option B:	Simple integer
Option C:	Simple symbol
Option D:	Simple string
5.	CoAP provides which of the following requirements?
Option A:	Multicast support, Low overhead and Simplicity
Option B:	Low overhead and multicast support
Option C:	Simplicity and low overhead
Option D:	Multicast support and simplicity
6.	X-MAC differs MFP – Micro frame preambling with respect to:
Option A:	Receiver cuts the preamble into micro-frames, and listens between each micro-frame.
Option B:	S (sender) cuts the preamble into a series of micro frames.
Option C:	S (sender) cuts the preamble into micro-frames, and listens between each micro-frame.
Option D:	Senders listen to the remainder of the preamble, which costs energy and Increases collision probability.

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7.	_____ localization algorithm works according to the last known or estimated location by using velocity or acceleration.
Option A:	Dead reckoning
Option B:	Scene analysis
Option C:	Proximity
Option D:	Hybrid
8.	Link-Layer Handover process follows three steps: two modes of scanning:
Option A:	active and passive
Option B:	active and semi-passive
Option C:	semi-active and passive
Option D:	semi active and semi passive
9.	Oozie workflow jobs are directed _____ graphs of actions.
Option A:	Linear
Option B:	Elliptical
Option C:	Cyclic
Option D:	Acyclic
10.	Hadoop Ecosystem does not include ----------.
Option A:	Oozie
Option B:	Yarn
Option C:	Hive
Option D:	Zoo

Q2.	
A	**Solve any Two** **5 marks each**
i.	Discuss the technical challenges in RFID.
ii.	Sketch the Hadoop architecture and explain its different components.
iii.	Explain 10 most emerging technologies in IoT
B	**Solve any One** **10 marks each**
i.	List the features of CoAP and explain the different messaging modes of CoAP.
ii.	Draw the RFID based architecture for supply chain management application.

Q3.	
A	**Solve any Two** **5 marks each**
i.	Explain the architecture of MQTT protocol with its selection criteria.
ii.	Explain different Identifiers in IOT.
iii.	Explain the Types of Wireless Sensor Network?
B	**Solve any One** **10 marks each**
i.	What does NETCONF-YANG mean, explain the device managements of the same.
ii.	Discuss the RFID enabled handoff management process in Localization and Mobility management.

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Q4.	
A	**Solve any Two** **5 marks each**
i.	List and explain the components of RFID
ii.	Illustrate how Energy-efficiency in MAC protocols is maintained.
iii.	Suggest the IoT Framework for Home Automation application.
B	**Solve any One** **10 marks each**
i.	Differentiate between the various conventional localization techniques. Explain any one detail.
ii.	Discuss the need of the Chef and Puppet tools with their benefits. List the industries using them.

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B.E/IT/Sem-VIII/BDA/F.H.2022 17/05/2022

05

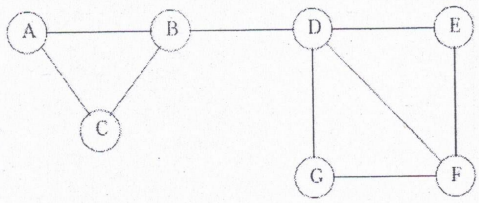
University of Mumbai
Examinations: Summer 2022

Time: **2 hour 30 minutes** Max. Marks: 80

Q1	**Choose the correct option for following questions. All the Questions carry equal marks. (2 Marks each) Total Marks - 20**
1	Vertical scaling means
Option A:	Adding computers serially
Option B:	Adding computers in parallel
Option C:	Adding computers serially as well as parallel
Option D:	Adding more processors, more memory and faster hardware typically within a single server
2	The original purpose of creation of Google implementation of MapReduce was to
Option A:	Perform matrix-vector multiplications for calculating PageRank
Option B:	Count number of keywords on webpages
Option C:	Count maximum number of keywords
Option D:	Find minimum keywords required on web page
3	Which of the following phases occur simultaneously?
Option A:	Map and combining
Option B:	Reduce and partitioning
Option C:	Shuffle and sort
Option D:	Map and Reduce
4	In DGIM algorithm, bucket cannot _____ in size as we move to the left (back in time).
Option A:	increase
Option B:	decrease
Option C:	big
Option D:	small
5	Taxation assumes:
Option A:	A random surfer has a finite probability of leaving the Web at any step
Option B:	A random surfer has an infinite probability of leaving the Web at any step
Option C:	A random surfer has zero probability of leaving the Web at any step
Option D:	A random surfer has 50% probability of leaving the Web at any step
6	Following are the NoSql Business Drivers
Option A:	Data, Supply, Information, Idea
Option B:	Demand, Supply, Trends, Data
Option C:	Volume, Velocity, Agility, Variability
Option D:	Data, Information, Knowledge, Idea
7	Multistage algorithm uses
Option A:	1 hash functions in 2 different passes

Option B:	1 hash functions in 1pass
Option C:	2 hash functions in 1pass
Option D:	2 hash functions in 2 different passes
8	Two k-cliques are adjacent when they share
Option A:	2*k nodes
Option B:	k+1 nodes
Option C:	k-1 nodes
Option D:	k nodes
9	Assume that a text file contains the following text. In a map-reduce logic of finding frequency of occurrence of each word in this file, what is the output of map function? This is a exam Yes it is exam
Option A:	(This,1), (is, 2), (a, 1), (exam, 2), (Yes, 1), (it, 1)
Option B:	(This,1), (is, 1), (a, 1), (exam, 1), (Yes, 1), (it, 1), (is, 1), (exam,1)
Option C:	(This,1), (is, 1), (a, 1), (exam,1)
Option D:	(This,1), (is, 1), (a, 1), (exam, 2), (Yes, 1), (it, 1), (is, 1)
10	In a map-reduce logic of finding Matrix-Vector Multiplication, what is the output of the map function? 3 4 1 5 6 * 2 7 8
Option A:	(1,11), (2,17), (3,23)
Option B:	(1,1,3), (1,2,4), (2,1,5), (2,2,6), (3,1,7),(3,2,8)
Option C:	(1,1,3), (1,2,4), (2,1,5), (2,2,6), (3,1,7),(3,2,8), (1, 1), (2, 2)
Option D:	(1, 3), (1, 8), (2, 5), (2, 12), (3, 7), (3, 16)

Q 2.		**Attempt ANY TWO QUESTIONS out of THREE** **Each question is for 10 marks**
	A	Recall all NoSQL design patterns with examples. Justify CAP with suitable examples.
	B	Explain with example Collaborative based filtering in a recommendation system.
	C	Apply Matrix - Matrix Multiplication using MapReduce model and solve the following example 1 2 3 4 1 2 * 3 4
Q 3.		**Attempt ANY TWO QUESTIONS out of THREE** **Each question is for 10 marks**
	A	Apply PCY algorithm to find frequent itemset for the given dataset with minimum support 50% with hash function h(ij)= i*j % 8 T1-- 1,2,4,5 T2-- 2,4,5

		T3-- 1,2,4 T4-- 1,2,5
	B	Figure is an example of a social-network graph. Use the Girvan-Newman approach to find the between-ness of every edge. 
	C	Discuss all phases of the CURE algorithm for clustering with suitable example.
Q 4.		**Attempt any FOUR Questions out of SIX** **Each question is for 5 marks**
	A	What are the five Vs of Big Data? Explain.
	B	Recall Hadoop architecture with diagrams and give its advantages.
	C	Discuss any 5 different relational algebra operations with examples.
	D	Mention problems of PageRank along with its solution.
	E	State Bloom filter and explain with the help of an example.
	F	Explain KNN with proper example.

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