

Name:	 UPES <small>UNIVERSITY OF TOMORROW</small>
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES (UPES)
End Semester Examination, May 2023

Course: Business Intelligence
Program: B-Tech – CS (BAO)
Course Code: CSIB 387

Semester: VI
Time 03 hrs.
Max. Marks: 100

Instructions: All questions are compulsory. Options are given for questions 9 and 11.

SECTION A
(5Qx4M=20Marks)
Explain max by 50-60 words wherever required. Attempt all questions from Sec A.

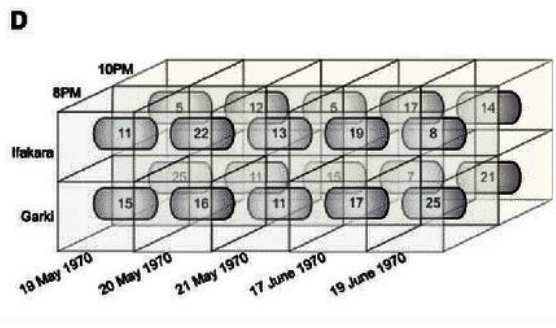
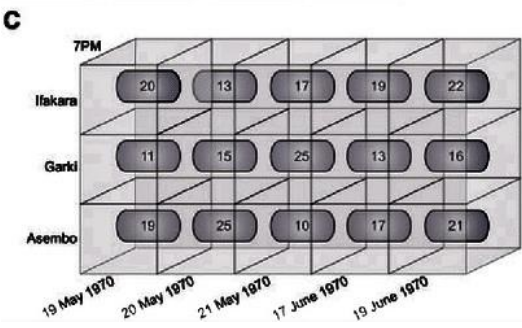
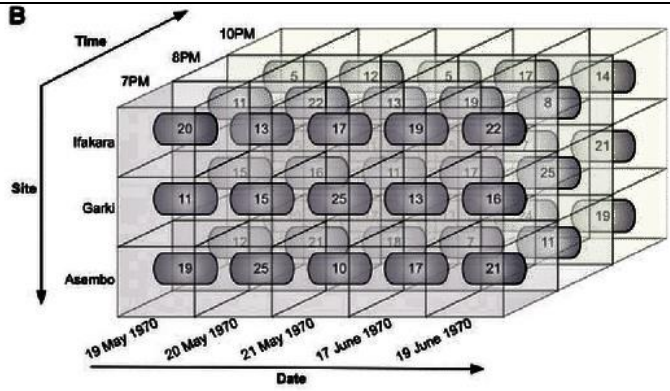
S. No.		Marks	CO
Q 1	Who coined the term BI? Comment on what is the future of BI.	4	CO1
Q 2	Steve Rogers is a Business Analyst and Tony Stark works as a Data Scientist in IBM. Describe how their roles differ. Do you think they will collaborate for any project taken by the company?	4	CO2
Q 3	What is decision support system? What are its three tiers?	4	CO3
Q 4	You got a dataset depicting the popularity of two graphic novels given by a critic which contains three variables. 1) Time of survey (in dd-mm-yy format) 2) Rating of ‘Marvel’ (in range between 0 to 10) 3) Rating of ‘DC’ (in range between 0 to 10) The data is collected every day since 1970. You need to graphically represent the data in a chart. What will you use? And why?	4	CO4
Q 5	Differentiate between OLAP and OLTP.	4	CO1

SECTION B
(4Qx10M= 40 Marks)
Each question will carry 10 marks. Write short / brief notes (Explain max by 100-150 words wherever required).
There is an option for Q8 (attempt i or ii) and also there is an option for Q9 (attempt i or ii).

Q 6	What do you mean by analytics? What are its kinds? Explain each of them with proper examples.	10	CO2
Q 7	Consider the figure given below: Here, Table: A represents a data set and Table: B its corresponding data cube. What does Table: C and Table: D represent? Explain how are the Tables(C and D) are created in your own words.	10	CO4

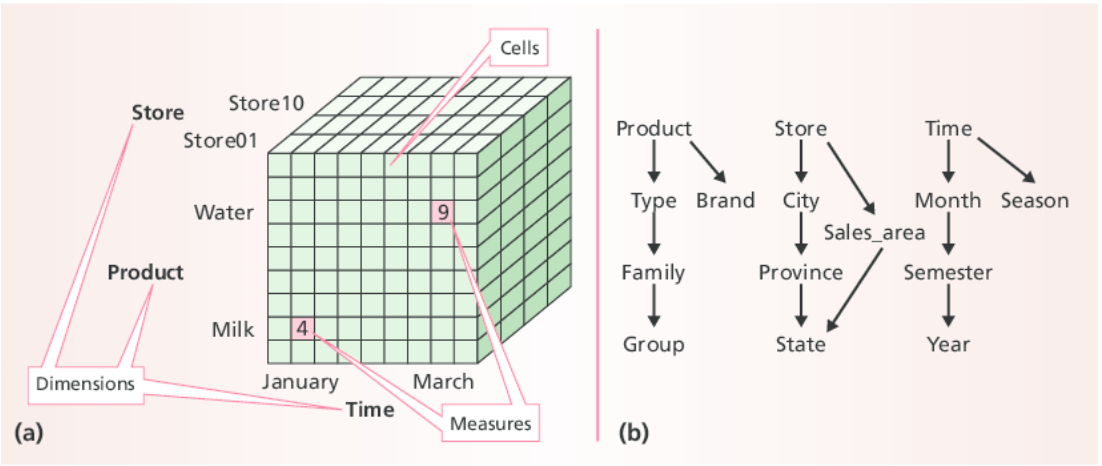
A

Date	Time	Site	Abundance
19 May 1970	7PM	Ifakara	20
20 May 1970	7PM	Ifakara	13
21 May 1970	7PM	Ifakara	17
17 June 1970	7PM	Ifakara	19
19 June 1970	7PM	Ifakara	22
19 May 1970	7PM	Garki	11
20 May 1970	7PM	Garki	15
21 May 1970	7PM	Garki	25
17 June 1970	7PM	Garki	13
19 June 1970	7PM	Garki	16
...
19 May 1970	10PM	Asebo	10
20 May 1970	10PM	Asebo	17
21 May 1970	10PM	Asebo	13
17 June 1970	10PM	Asebo	24
19 June 1970	10PM	Asebo	19



Q 8

(i) Suppose you have been given the following data cube (a) from a company and hierarchies on dimensions (b):



Explain how cross tabulation can help to deal with the different hierarchies?

OR

(ii) Write Short note on : (5+5=10)

- Text Mining.
- SSO (Single Sign on).

10

CO3

Q 9

(i) Suppose an institute offers only one diploma course on machine learning of duration 1 year. They collected some data for the past few years as given below:

10

CO5

	2016	2017	2018	2019
Students admitted	104	116	120	100
Students graduated	87	92	100	75
Research Grants applied	3	7	6	9
Research Grants received	0	3	5	4
Total Classes	72	65	64	70
Total Cost	54000	60000	64000	60000
Faculty Training Sessions	9	7	2	5

To measure the institute's performance, the management decided on some 'Key Performance Indicators' (KPIs) defined as:

- 1) Graduation Rate: How many students graduating in that year.
- 2) Research Grant: Percentage of research grant received over applied.
- 3) Cost per Student: The amount of money required to educate one student.

Compute the KPIs for each year. Where do you think these KPIs will be used in the Kaplan-Norton Balanced Scorecard?

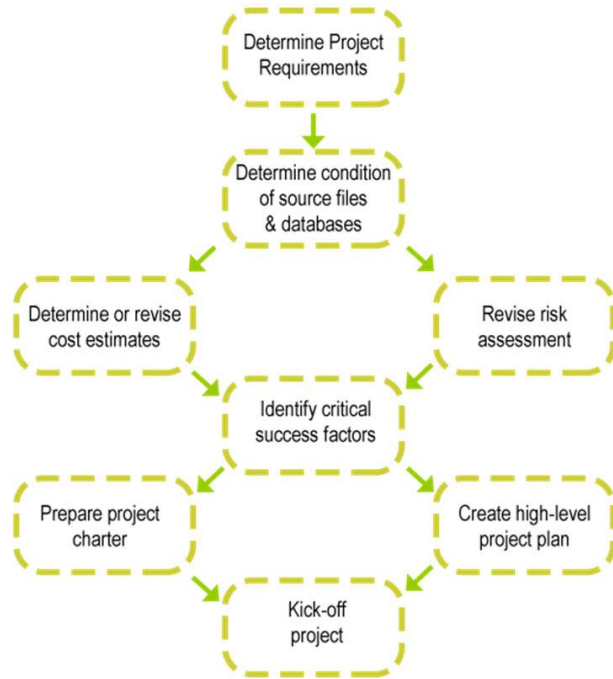
OR

(ii) Discuss the Gestalt's dashboard design principles. Which graphs should be avoided and which should be used when and how.

SECTION-C

(2Qx20M=40 Marks) Each Question carries 20 Marks. Instruction: Write long answer. Explain max by 200 words wherever required. Make diagrams wherever needed.

Q 10	The steps are required to plan a BI project are given in the figure below. The company that you are working for is a stocks investment firm. How are you going forward to implement a BI project, explain the same with a proper case study and your own diagram with any two UML models of your own choice?	20	CO4
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Q 11 Dealing with a BI solution architecture, you are asked to create an architecture of UPES. Explain how Centralized and Decentralized architecture will differ. Explain other alternative architectures. How can you expand UPES BI potential?

OR

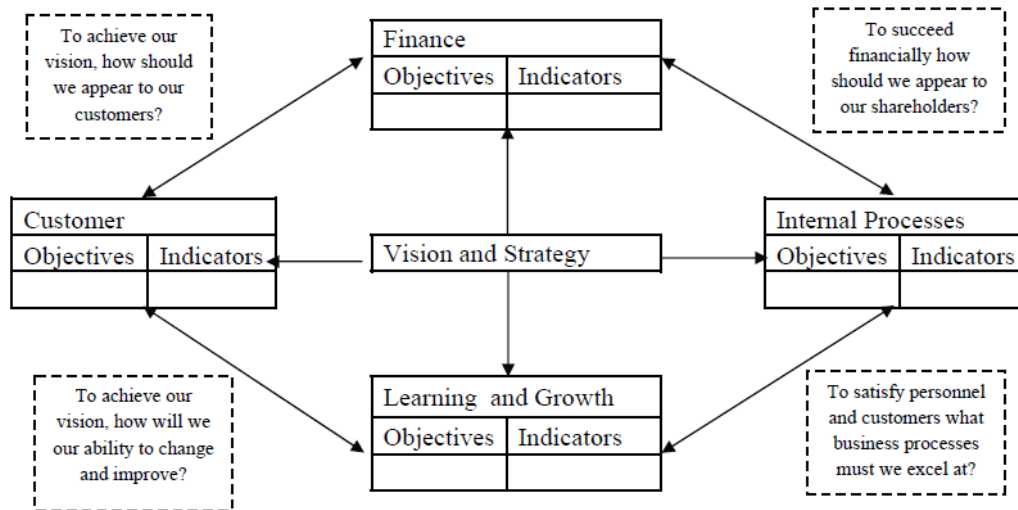
A graphic novel company named ‘Marvel’ looked at its data as shown as below:

Customer complaints	100
Customer complaints resolved	70
Total Customers till last year	10000
Total Customers till today	98000
Printing Cost last year	8000
Printing Cost this year	7000
New characters introduced last year	12
New characters introduced this year	7
Incentives given to cartoonist last year	10000
Incentives given to cartoonist this year	12000
Average cost of one comic last year	95
Average cost of one comic this year	105

Based on the data, you are now asked to fill up the Objectives and Indicators in each of the four sections given below:

20

CO5



What kind of initiatives could you take to increase your target in each section?
(Mention creating another column named Target in each section of the balanced scorecard)