Name:

Enrolment No:

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Program: MBA –BA | **Semester : II**
Subject (Course): Business Intelligence | **Max. Marks : 100**
Course Code : DSBA 7006 | **Duration : 3 Hrs**
No. of page/s: 3

SET 1

Instructions: Section A is of 20 Marks, Section B is of 20 Marks, Section C is of 30 Marks, Section D is of 30 Marks (Section D is compulsory)

SECTION A

S. No.	Mention True / False or Fill in the blanks against each question	Marks	CO
1	Information Processing are of two types _____ & _____	2	
2	Business Intelligence is a set of methods, processes, architectures, applications, and technologies.	2	
3	In _____ phase of BI the refined data is modeled and stored in a particular data management systems for quality management, easy and fast access, and data profiling.	2	
4	BI produces actionable insights rather than only investigative data.	2	
5	BI -Streamline a controlled and managed process of data driven decision making.	2	CO1
6	_____ Queries are inexpensive simple queries, e.g., over banking or airline systems.	2	
7	_____ Queries facilitate when users need to check other similar applicants (age, gender, income, etc…) and observe how they perform, then do prediction for new applicant.	2	
8	The cube is not comparable to a table in a relational database.	2	
9	_____ possesses consolidated historical data, which helps the organization to analyze its business.	2	
10	_____ process is essential before the data is ingested into datawarehouse		

SECTION B

Answer any four of the following questions. Be brief in your answers.			
Q 1	Define Business Intelligence.	**5**	**CO2**
Q 2	Mention the General processing steps of ETL.	**5**	**CO2**
Q 3	What does data mining help us to do with data?	**5**	**CO1**
Q 4	What is slicing and dicing?	**5**	**CO1**
Q 5	Why data warehouse is required for BI.	**5**	**CO2**
SECTION-C **(Answer any two of the questions. Answer in points only)**			
Q 1	Design a BI system for fraud detection by describing all the steps from Data Collection to Decision Making.	**15**	**CO2**
Q 2	Explain the modelling steps with example.	**15**	**CO2**
Q 3	How do business intelligence and business analytics support decision making?	**15**	**CO2**
SECTION-D			
Q	**Answer the following question.**		
Q1.	A bank wants to build a data warehouse for storing and analyzing data about all loans issued by them. Every loan has one or more borrowers, a starting date, a type (e.g., fixed rate or one of different types of variable rate), the branch of the bank where the loan was issued, the interest rate at the start of the loan, and the amount. For every loan the purpose of the loan is recorded; e.g., to buy a car, a house, a personal loan. When a borrower applies for the loan, different discounts on the interest rate may be awarded; e.g., fidelity discount, discount because the borrower also bought some additional insurances, VIP discount, etc. For one loan, multiple discounts may apply. The amount of discount is independent of the branch. Every discount that has been awarded needs to be stored. When the loan ends, this is stored as well, together with an indication if the loan was Fully repaid or the borrower defaulted. For the borrowers, their date of birth, family status, monthly income, number of children and address is stored. The following questions are prototypical for the type of query analysts want to answer based on the data warehouse:	**30**	**CO3**

.	• Give the average interest rate before discount at the start of the loan, per loan type and branch. • For all branches, give the minimum, maximum and average interest rate per loan type and purpose. • Give the number of loans per branch and per amount category. The amount category depends on predefined thresholds; amounts are divided into the following classes: very high, high, medium, low, and very low. • Give the percentage of defaulted loans per year and per city of the branch where the loan was issued. **Q. Make a dimensional star schema model for a data warehouse according to the above description**		

Name:

Enrolment No:

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Program: MBA –BA | **Semester : II**
Subject (Course): Business Intelligence | **Max. Marks : 100**
Course Code : DSBA 7006 | **Duration : 3 Hrs**
No. of page/s: 3

SET 2

Instructions: Section A is of 20 Marks, Section B is of 20 Marks, Section C is of 30 Marks, Section D is of 30 Marks (Section D is compulsory)

SECTION A

S. No.	Mention True / False or Fill in the blanks against each question	Marks	CO
1	Information Processing are of two types _____ & _____	2	
2	Business Intelligence is a set of methods, processes, architectures, applications, and technologies.	2	
3	In _____ phase of BI the refined data is modeled and stored in a particular data management systems for quality management, easy and fast access, and data profiling.	2	
4	BI produces actionable insights rather than only investigative data.	2	
5	BI -Streamline a controlled and managed process of data driven decision making.	2	CO1
6	_____ Queries are inexpensive simple queries, e.g., over banking or airline systems.	2	
7	_____ Queries facilitate when users need to check other similar applicants (age, gender, income, etc…) and observe how they perform, then do prediction for new applicant.	2	
8	The cube is not comparable to a table in a relational database.	2	
9	_____ possesses consolidated historical data, which helps the organization to analyze its business.	2	
10	_____ process is essential before the data is ingested into datawarehouse		

SECTION B

Answer any four of the following questions. Be brief in your answers.			
Q 1	Define Business Intelligence.	**5**	**CO2**
Q 2	Mention the General processing steps of ETL.	**5**	**CO2**
Q 3	What does data mining help us to do with data?	**5**	**CO1**
Q 4	What is slicing and dicing?	**5**	**CO1**
Q 5	Why data warehouse is required for BI.	**5**	**CO2**
SECTION-C **(Answer any two of the questions. Answer in points only)**			
Q 1	Explain the components of BI system	**15**	**CO2**
Q 2	Explain the dimension modelling steps with example.	**15**	**CO2**
Q 3	How do business intelligence and business analytics support decision making?	**15**	**CO2**
SECTION-D			
Q	**Answer the following question.**		
Q1.	A record label wants to keep track of all contracts they have with bands, records they are producing and the sales of these records. Currently they are only keeping data of their ongoing contracts; no historical information is kept. Therefore it is decided to construct a data warehouse for collecting and storing historical information. With the data warehouse the company wants to analyze its sales. Based on conversations with the managers of the company, you were able to compile the following description of the available data. The record label has several bands under contract. Each band has a name, a main category of music it plays, and one or more artists. A band may have a manager, but does not have to. Bands without a manager must have one of the artists as their main representative. An artist has one main instrument, which can also be his/her voice. Over time, bands can split and attract or replace group members. Bands make records which are physically produced and distributed by the record label. Records, including those that are not yet finished, have a title and are identified by a special international code. For every record the price to produce it and its release date are stored. The record label has contracts with the bands. For every contract start and end data are registered as well as for which records it holds, what percentage of sales goes to the manager of	**30**	**CO3**

.	the group (if present), how much to the group, and how much to the record label. A contract can apply to multiple records, but every record falls under exactly one contract. Shops can order records at the record label. The date, amount, and agreed price of these orders are recorded, as well as the number of records that were sent to the shop in the end (sometimes demand outweighs supply) and the date on which the order was fulfilled. For every shop, the record label has information about the spatial location, including: city, country, and region of the shop. Some examples of the types of analyses the record label wants to perform based on the data warehouse are the following: • Which record/group/artist has given the record label the highest/lowest gain/return on investment per week/month/year. • What seller/city/country has the highest number of demands that could not be met? • Which record/group/artist has the highest number of demands? **Q. Make a dimensional star schema model for a data warehouse according to the above description.**		