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KAKATIYA UNIVERSITY
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Date: 15-02-2022

To
The Registrar,
Kakatiya University,
Warangal.

Sub: UG – B.Com. (Business Analytics **CBCS Semester - I W.E.F.2020-21**
- Submission of Practical Question Bank to upload in Website – Reg.

Sir,

With reference to the subject cited above, I am herewith submitting a copy of B.Com. (Business Analytics) Practical Question Bank of I Semester to III Semester, which is to be uploaded in the University Website at the earliest. The details of the papers with subject codes are as follows:

Sl. No.	Semester	Title of the Paper	Paper Code
1	I	**Data Driven Decision-Making**	103
2	II	**Data Analytics Essentials**	203
3	III	**Data Analytics Modeling**	303

Thanking you sir,

Encl: Practical Question Bank

FACULTY OF COMMERCE & BUSINESS MANAGEMENT
KAKATIYA UNIVERSITY, WARANGAL

B.Com (Business Analytics) CBCS Semester - I W.E.F.2020-21

Data Driven Decision-Making - Paper: 103

Time: 60 Minutes	*Record*	*10*
Viva-voce		*10*
Skill Test		*: 15*
Total Marks		*: 35*

1. Identify data sets published by industry association or other body in public domain that specifically help in "setting up a business in new geography".

2. Identify data sets published by industry association or other body in public domain that specifically help in "releasing a new product line".

3. Identify data sets published by industry association or other body in public domain that specifically help in "exiting the business".

4. Identify data sets published by industry association or other body in public domain that specifically help in "serving a new market segment".

5. Identify in what way the data can benefit the organisation with special reference to any company's case study.

6. Narrate the importance of Data Science with the help of a diagram.

7. Build an analytics team for an organisation with a diagram and explain.

8. Identify the categories of Analytical people and explain skills of Analytical people.

9. Draw the diagram "Data Driven Decision Making process" and explain.

10. Draw the data-driven decision making model and explain.

11. Explain the role of Power BI in data analytics. With special reference to a company.

12. Explain the Operational and Analytical Big Data with examples.

13. List the various shortcut keys along with their utility.

14. Draw the diagram "machine learning algorithm" and explain.

15. Draw the diagram "tools of visualization" and explain.

16. "The data lifecycle is the sequence of stages a data unit goes through from its initial generation to its eventual archival and/or deletion at the end of its useful life". Identify the stages in the Data Lifecycle.

17. Explain with diagram the three main goals of data lifecycle management.

18. Identify the forms data takes as it is stored and used within the organization.

19. List the steps for crafting the best map to help your company and customers prosper. What is the best practice you should follow while designing your customer journey map.

20. Draw a diagram "cloud storage" and explain its working

21. Visit a company (online) and collect the information and show how they are applying the data analytics tools in their decision making?

22. Pick a data set and report the sources of data

23. Pick a data set and report data definitions

24. Pick a data set and report data Storage.

25. Pick a data set and report data cleansing.

26. Pick a data set and report data analysis.

27. Download the data set of any organization and discuss the hurdles of that organization in becoming a data driven organization

28. Download the data set of any organization and analyse the data practices.

29. Download the data set in any organization and identify the stages in the data lifecycle.

30. Analyse why requirement gathering process is critical to proper analysis.

Python:

31. Prepare a list of rainbow colors and assign a name "Rainbow" to it. Print the second item in the "Rainbow" list.

32. India = 381, England = 259. Print "India won against England" if India score is greater than England score.

33. Create a program that asks the user to enter their name and their age. Print out a message addressed to them that tells them the year that they will turn 100 years old.

34. Ask the user for a number. If the number is even, print "You picked an Even number" and if it is odd print "You picked an Odd number"

35. Write a Python Pandas program to import excel data into a Pandas data frame and print first 5 records

36. Write a Python Pandas program to read specific columns from a given excel file like read 1,2 and 4th columns and print them

37. Write a Python Pandas program to find and print the sum, mean, max, min value of a sample column which has numbers

38. Write a Python Pandas program to import employees excel data into a Pandas data frame and find a list of employees where hire date> 01-01-07

39. Write a Python Pandas program to import employees excel data into a Pandas data frame and to sort the records by the hire date column.

40. Write a Python Pandas program to import three datasheets from a given excel data and combine in to a single data frame.

    Note: Structure of the three datasheets are same.

    SQL: Load given Customers.csv file and work on below tasks

    Customers.csv

41. Select all the different values from the Country column in the Customers table.

42. Select all records where the City column has the value "Berlin".

43. Select all records where the City column has the value 'Berlin' and the Postal code column has the value 12209

44. Select all records from the Customers table; sort the result alphabetically by the Column City.

45. Select all records where the City column has the value 'Berlin' or 'London'.

46. Select all records from the Customers table, sort the result alphabetically, first by the column Country, then, by the column City

47. Insert a new record in the Customers table.

48. List the number of customers in each country.

49. Select all records from the Customers table, sort the result reversed alphabetically by the Column City.

50. Select all records from the Customers where the Postal code column is empty.

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FACULTY OF COMMERCE & BUSINESS MANAGEMENT
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B.Com (Business Analytics) CBCS Semester - II w.e.f. 2020-21

DATA ANALYTICS ESSENTIALS - Paper: 203

Time: 60 Minutes

Record	: 10
Viva-voce	: 10
Skill Test	: 15
Total Marks	: 35

Unit - I

VARIABLES FOR DATA ANALYTICS

1. Draw the diagram showing the types of Variables with examples.
2. Differentiate between Numerical and Categorical Variables.
3. What are Named variables? Using Ms-Excel, create a list of 10 named variables and add the numbers automatically.
4. What is a Ratio Variable? State the importance of Ratio Variable in Data Analytics.
5. Explain Data Table in Excel. Create a One Variable Data Table in Excel.
6. What is a two Variable Data Table? Write steps to create a Two Variable Data Table.
7. Write steps for analysing a Data Table with Multiple Formulas in Excel.
8. How do you Create, Rename, Recode and Merge Variables in R?
9. Write steps to create Your Name, Age, Class, and College Name in R.
10. Draw a Chart for R- Variables.

UNIT – II

11. Find the Average Price of given items using MS-Excel.

Rice Bag Ashirwad	1450
Rice Bag India Gate	1200
Sona's Sona Masurie	1300
Kohinoor Rice	1100
Aabida Basmati Rice	1400
Indian Valley	1250
Mannat Rice	1200
Shaalimaar Rice	1425

12. Using Ms-Excel, find the Median Value of the following items.

Items	Status	Amount Rs.
Banana	Delivered	758
Apple	Cancelled	258
Cherry	In-transit	587
Banana	Delivered	495
Banana	Cancelled	687
Apple	Delivered	258
Cherry	Delivered	684

13. Find the most frequently ordered Quantity from a supermarket store in MS-Excel.

Products	Quantity	MRP Rs.
Tang Orange Flavour	5	1050
Rasna Orange	6	1200
RoohAfza	5	1800
Tang Apple	10	1200
Rasna Green Apple	5	1700
Tang Cocktail	5	1400
Jaljeera	15	120

14. Find the Highest and Lowest Marks of Students obtained in English using Ms-Excel.

Himabindu	85
Karthik	15
Renuka	78
Mallika .S	15
Ashok Jaiswal	100
Billu Yadav	75
Girish J.	50
Sarika	05

15. Find the Geometric and Harmonic Mean Wages from the following data using Ms-Excel.

Job	Wages Rs.
Electrician	200
Nurse	500
Sales Manager	540
Manufacturing Engineer	540
Celebrity	450
Beautician	480
Data entry operator	350
Plumber	240

16. Using Ms-Excel, calculate Standard Deviation of total sales from the given data.

Total Sales (Rs.)	Branch
258000	Delhi
485220	Mumbai
875010	Kolkata
235461	Hyderabad
875212	Indore
785223	Surat
345621	Pune

17. Find Q1 and Q3 and also Quartile Deviation from the following information in Ms-Excel.

S.No.	Value
1	145
2	254
3	156
4	354
5	253
6	253
7	245
8	892
9	242
10	268

18. Find the Quartiles from the following data in Ms-Excel.

Height (in inches)	58	59	60	61	62	63	64	65	66
No. of Persons	2	3	6	15	10	5	4	3	1

19. Compare and find the Range of 10 Students' marks in Mathematics and Statistics using Ms-Excel.

Maths	25	40	30	35	21	45	23	33	10
Statistics	30	39	23	42	2	40	25	30	18

20. Calculate Variance from the following data in MS-Excel.

X: 10, 11, 17, 25, 7, 13, 21, 10, 12, 14

UNIT – III

21. Calculate the Mean and Standard Deviation of the Probability Distribution in Ms-Excel. Number of Persons (X) 2,3,4,5 Probability (P(x)) 0.22; 0.48; 0.25; and 0.05

22. One ticket is drawn at random from a bag containing 30 tickets numbered from 1 to 30. Find the probability that it is a multiple of 5 or 7 using Ms-Excel.

23. In a class with 5 students, the medical check-up take place wherein they were weighed, the following data w captured. Calculate the variance of the data set based on the given information.

Students	Weight in Kgs (X)
1	30
2	33
3	39
4	29
5	34

24. Show VEN Diagrams by taking a master data from the college in a particular course.

25. Analyze "this" OR "that" and also "this" AND "that" diagram with the help of an example data.

26. The probability that A will live upto 60 years is ¾ and probability of B will live upto 60 years is 2/3. What is the probability that both A and B live upto 60 years. Show the calculation in Ms-Excel.

27. A husband and a wife appear in an interview for two vacancies in the same post. The probability of husband selection is 1/7 and that of wife is 1/5. What is the probability that only one of them will be selected? Show the steps in Ms-excel.

28. Calculate P using a Contingency Table for a master data.

29. Calculate Bayes' Theorem for a dummy data.

30. What is the probability that a boy will get a scholarship is 0.90 and a girl will get is 0.80. Write steps how you will calculate the probability that at least one of them get scholarship?

UNIT – IV

31. Analyse the types of Distributions.

32. A pair of fair dice is rolled. Let `X' denote the sum of the number of dots on the top faces. Construct the probability distribution of X for a pair of fair dice along with a histogram diagram in Ms Excel.

33. A coin is flipped 10 times. Calculate the probability of getting 5 heads using a Binomial Distribution formula using Ms-Excel.

34. Given information: Value for which we need distribution 52

Arithmetic mean of the distribution 50 Standard Deviation of the distribution 2.5

Using Ms-Excel, calculate Normal Distribution and write steps.

35. The distribution of heights of Indian Women aged 18 to 24 is approximately normally distributed with a mean of 65.5 inches and a standard deviation of 2.5 inches. What percentage of these women is taller than 68 inches? Show the steps in Ms-Excel to calculate Normal Distribution using NORM.S.DIST function.

36. The golf scores for a school team were normally distributed with a mean of 68 and a standard deviation of 3. Find the probability that a golfer scored between 66 and 70 in Ms-Excel.

37. The number of complaints lodged against the robbery of the vehicles in a day was calculated for the next 10 days as given below. Calculate the quartile deviation and its coefficient for the given discrete distribution case in Ms-Excel.

Day	Frequency
1	20
2	35
3	25
4	12
5	10
6	23
7	18
8	14
9	30
10	40

38. Discuss the procedure to calculate Probability through Normal Distribution.

39. Compare Quartiles and Normal Distributions.

40. Make a note on Skewness and discuss the procedure to identify Positive Skew and Negative Skew.

UNIT – V

41. How you Apply Vectors? Use Data Frames in R. Also discuss the process to use data from an external file in R.

42. Discuss the procedure to apply Mean / Median / Standard Deviation in R-Distributions in R Case Study.

43. How do you use Normal Distribution Function and Poisson Distribution Function in R?

44. Write navigation to Apply Scatter Plot, Box Plot and Histogram in R.

45. Explain Fraud Detection Case Study.

46. What is Bayes' Theorem? How to Use Bayes' Theorem in R?

47. Assign a message "Hello" to a variable `X' and display it on the screen using R software.

48. Display numbers 1 to 30 in R.

49. Display any 5 cities names in R using objects.

50. Write a R program to create a data frame from two given Vectors like Names:

Aliya	Dany	Katherine	Sudha
23.4	13.5	19.2	54.2

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B.Com (Business Analytics) CBCS Semester - III W.E.F.2020-21

Data Analytics Modeling - Paper: 303

Time: 60 Minutes

Record	*10*	
Viva-voce	*10*	
Skill Test	*: 15*	
Total Marks	*: 35*	

MS Excel or Power query and SQL:

Questions from 1 to 25 :: Ms Excel/Power Query
Table for Question No. 1-5

Employee ID	Employee Name	Gender	Age	Date of Hiring	Salary
D-45001	Laxman	f	45	6th jan 2006	4,50,000
	Shastry				
D-45001	Ram	m	23	1st feb2007	1,25,000
D-45203	SHYAM	m	35	01-08-2005	2,15,000
D-45932	Riya Sharma	f	29	01-03-2010	2,12,000
	Madhavi				
D-45006	Madhuri	f	38	01-09-2005	3,10,000

1. Remove blank rows from the above table.
2. Format date from the above table.
3. Using Excel, insert currency in salary column.
4. Using Excel, format employee name to proper case letters.
5. Using Excel, change the letters to Upper case in gender column.

Table for Question No. 6-10

Customer ID	Customer Name	Contact Name	Street Name	City	Postal Code	Country
3124	Alfreds Futterkiste	Maria Anders	Obere Str. 57,	Berlin	12209	Germany
1238	Ana Trujillo helados	Ana Trujillo	avda. de la Constituci¢n 2222	Mexico city	5021	Mexico
4562	Antonio Moreno Taquer¡a	antonio moreno	mataderos 2312	Mexico city	5023	Mexico
5678	Around the Horn	thomas hardy	120 Hanover Sq.	NY	WA1 1DP	USA
2314	Berglunds snabola	Christina Berglund	Berguvsv„gen 8	Sydney	33-22	Australia
365	Amit Mishra	Maria Anders	Obere Str. 57	Sydney	65-332-3	Australia
7890	williami sanuo	Ana Trujillo	Avda. de la Constituci¢n 2222	Sydney	43433	Australia
56789	Sonio Moreno	Antonio Moreno	120 Jefferson St.,Riverside	NJ	8075	US
3657	Amit Mishra	Maria Anders	Obere Str. 57	Sydney	65-332-3	Australia
2314	Berglunds snabbkp	Christina Berglund	Berguvsv„gen 8	Sydney	33-22	Australia

6. Using Excel, concatenate the columns Street name and city.
7. Insert "C-" in the left side of the customer Id in customer name column of the above data.
8. Using Excel, remove the leading spaces and extra spaces in Customer name and contact name columns.
9. From the above table remove the duplicate rows.
10. From the above table remove the customer whose customer ID is not a 4 digit number

Table for Question No. 11-15

Employee ID	Employee	Gender	Age	Year of	Date of	Salary
ID	Name	M/F	As on date	Graduation	Hiring	In Rupees
D45078	Somya Rao	F	50	1975	01-10-1990	6,50,000
S45039	Raju Budda	M	43	2000	02-08-1999	4,23,000
M45020	Jai Raj	M	48	1993	08-10-2000	4,65,000
M45038	Kalyani Kumari	F	37	2004		3,12,000
M45037	Sam Joes	M	36	2005	04-02-2006	3,20,000
S45059	Poter Michel	M	39	2004	03-10-2008	2,89,000
F45012	Siddu kommnani	M	42	2000	15-10-2007	4,12,000
F45023	Geeta Chowdari	F	46	1996	12-10-2005	4,34,000
D45078	Lavanya Koppula	F	49	1994	31-10-2004	
	Hema Sarvani	F	50	1992	25-10-2000	5,69,000
S45060	Gopal Das	M	54	1998	12-09-2001	6,32,000
F45062	Siya Paul	F	51		19-06-2003	5,90,000
M45026	Hari Krishna	M	38	2003	25-04-2003	
O45029	Priya Dixit	F		2005	12-07-2006	3,45,000
A45037	Anu Devara	F	58	1985	12-09-2008	6,95,000

11. From the above data in Excel, Concatenate the Headers.
12. From the above data in Excel, convert the numerals in Year column to text format.
13. From the above table in Excel, highlight the blank spaces and fill it with "Not Available".
14. From the above table in Excel, select only the first name from the Employee name and paste in another column.
15. From the above table, select the Date of Hiring column and change the format to YY-MM-DD

Table for Question No. 16-20

Customer Name	Company Name	PHONE NUMBER	Address, City, State, and ZIP	Amount	Shipment Date	Order date	Sales Rep ID	Commissions
Fausto Wells	Hansen-Block	3574999014	p.o. box 52367, wamac, ga, 38940	5,31,950	2020-01-18	2019-08-18	8	
Lon van Batenburg	Stracke-Kirlin	7684940151	p.o. box 55222, texas, vt, 21681	6,76,359	2020-08-03	2020-02-03	3	
Cordie Henckes	Rohan PLC	6569415846	985 quiet second motorway, christiana borough, nv, 38006	5,34,680	2019-09-21	2019-10-21	1	
Geraldo Roeder	Smith PLC	6159714872	476 rustic underpass, algood, nc, 97098	5,83,679	2020-04-22	2020-04-22	9	
Debora Dekker	Hyatt-Durgan	9759057307	389 broad oval, south palm beach, az, 58103	6,45,572	2021-02-11	2021-03-11	6	
Dionne Kalt	Hansen-Block	4803299394	p.o. box 33125, elm springs, ny, 21979	6,05,863	2020-05-06	2020-04-06	7	

16. Format the above table in proper format.
17. From the above table format the phone number in US form Ex: +1(123)345-6758
18. From the above table separate the address, city, state and zip into different columns
19. Check the inconsistencies in the table and highlight them.
20. Insert "$" in for the amount in the Amount column of the above table.

Table for Question No. 21-25

Customer Name	Company Name	PHONE NUMBER	Address, City, State, and ZIP	Amount	Shipment Date	Order date	Mail Id	Sales Rep ID	Commissions
faUsto wElls wORrgo	Hansen-Block	3574999014	p.o. box 52367, wamac, ga, 38940	5,31,950	2020-01-18	2019-08-18	fausto&worng@gmail.com	8	
Lon vAn bateVburg	Stracke-Kirlin	7684940151	p.o. box 55222, texas, vt, 21681	6,76,359	2020-08-03	2020-02-03	Lonvan.gmail.com	3	
Cordie henckes dickens	Rohan PLC	656941#846	985 quiet second motorway, christiana borough, nv, 38006	5,34,680	2019-09-21	2019-10-21	CORDIE-@gmail.com	1	
geraldo roERDder dugoe	Smith PLC	615971487	476 rustic underpass, algood, nc, 97098	5,83,679	2020-04-22	2020-04-22	geraldo@gmail.com	9	
Debora Dekker Kilin	Hyatt-Durgan	9759057307	389 broad oval, south palm beach, az, 58103	6,45,572	2021-02-11	2021-03-11	deboradekker@yahoo.in	6	
DioNNE Kalt HEnse	Hansen-Block	4803299394	p.o. box 33125, elm springs, ny, 21979	6,05,863	2020-05-06	2020-04-06	Kalthense@c.in	7	

21. From the above table, remove the invalid phone number which are not in the proper format of having 10 digits, no characters and the phone numbers which are starting with 9/8/7/6
22. From the above table, put the phone numbers in US format.
23. From the above table, format the customer name.
24. From the above table, select only the middle name from customer name
25. From the above table, format/ validate the mail IDs

Questions from 26 to 35 :: SQL

A. Create a **Supplier** table as shown below : (for questions from 26 to 35)

Sup_No (Primary Key)	Sup_Name	Item_Supplied	Item_Price	City
S1	Suresh	Keyboard	400	Hyderabad
S2	Kiran	Processor	8000	Delhi
S3	Mohan	Mouse	350	Delhi
S4	Ramesh	Processor	9000	Bangalore
S5	Manish	Printer	6000	Mumbai
S6	Srikanth	Processor	8500	Chennai

26. Write sql query to display Suplier numbers and Supplier names whose name starts with 'R'
27. Write sql query to display the name of suppliers who supply Processors and whose city is Delhi.
28. Write sql query to display the names of suppliers who supply the same items as supplied by Ramesh.
29. Write sql query to increase the price of Keyboard by 200.
30. Write sql query to display supplier numbers, Suplier names and itemprice for suppliers in delhi in the ascending order of itemprice.
31. Write sql query to add a new column called CONTACTNO.
32. Write sql query to delete the record whose itemprice is the lowest of all the items supplied.
33. Create a view on the table which displays only supplier numbers and supplier names.
34. Write sql query to display the records in the descending order of itemprice for each itemsupplied.
35. Write sql query to display the records of suppliers who supply items other than Processor or Keyboard.

Below are the details of Employees working for a software Company.
(For questions from 36 to 45)
Create the table called **EmpDetails** with the below mentioned details.

Eid (Primary Key)	Ename	DOB	Designation	Salary	DOJ
E101	Suma	29-Dec-89	Designer	20000	01-Apr-10
E102	Amit	10-Jan-95	Programmer	25000	18-Feb-18
E103	Payal	15-Aug-85	Tester	35000	13-Jun-11
E104	Kiran	20-Apr-90	Programmer	40000	7-Mar-14
E105	Meenal	29-May-83	DBA	50000	9-Dec-11
E106	Sheila	1-May-70	Analyst	60000	25-Sep-18
E107	Swamy	13-Jan-85	Programmer	45000	14-Feb-16
E108	Sushma	22-Dec-76	DBA	45000	31-Jan-12

36. Write sql query to display all the employees whose designation is Programmer.
37. Write sql query to display employees who have joined after 2014.
38. Write sql query to display all the employees whose name ends with 'a'.
39. Write sql query to display the total salary of all the employees whose designation is programmer.
40. Write sql query to display all the employee names in upper case.
41. Write sql query to display the details of the employee with highest experience.
42. Write sql query to display the details of the employees whose name contains 'ee'.
43. Write sql query to increase the salaries of employees by 5000 whose designation is DBA.
44. Write sql query to display the employees whose salary is more than the average salary of all the employees.

45. Write sql query to display the record in the following format: xxxxxxxxx is working as xxxxxxxxxxxxxx with a Salary of Rs.xxxxxxxx

eg: Suma is working as Designer with a Salary of Rs. 20000.

Create the two tables as shown below with the given constraints: (for questions 46 to 50)

Table name: **Employee** Tablename: **Department**

Constraints: Eid is Primary key and DeptId is foreign key Constraints:DeptId
Primary key Salary should not be less than 10000 and Dname is NOT NULL

Eid (Primary Key)	Ename	DeptId (Foreign Key)	Designation	Salary (> 10000)	DOJ
101	Sudha	D2	Clerk	20000	01-Apr-10
102	David	D1	Manager	50000	18-Feb-18
103	Preethi	D3	Clerk	35000	13-Jun-11
104	Kiran	D1	Salesman	20000	7-Mar-14
105	Manasa	D2	Clerk	50000	9-Dec-11
106	Deepthi	D3	Manager	60000	25-Sep-18
107	Kranthi	D3	Clerk	25000	14-Feb-16
108	Vicky	D2	Manager	45000	31-Jan-12

DeptId (Primary Key)	Dname
D1	Sales
D2	Marketing
D3	Finance

46. Write sql query to display all the employees who earn more than average salary of all the employees in the company.
47. Write sql query to display the fields Eid, Ename and Dname.
48. Write sql query to sort the employee table in the descending order of salaries.
49. Write sql query to list all the job designations in the employee table without repetitions.
50. Write sql query to display all the employee details Department wise and in the ascending order of their salaries.

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