



UNIVERSITY OF PETROLEUM & ENERGY STUDIES
End Semester Examination, December 2021

Course: Program: BBA-A&BD
Subject/Course: DATA ENVIRONMENT
Course Code: DSQT 2003

Semester: III
Max. Marks: 100
Duration: 3 Hours

Instructions : The Question Paper has 4 Sections, and there is internal choice in Section C

Q.No	SECTION A - 10Q x 2M = 20 Marks	Marks	CO																			
Q1	Among the 5 V's of Big Data, the _____ term deals with a wide range of variety of data types	2	CO1																			
Q2	The _____ of Big Data refers to the accuracy and correctness of the data. (a) Volume (b) Velocity (c) Veracity (d) Validity	2	CO1																			
Q3	The _____ symbol in ER diagram stands for derived attribute.	2	CO1																			
Q4	The _____ chart compares values across categories in a circular orientation (a) Scatter (b) Column (c) Bar (d) Radar	2	CO1																			
Q5	The _____ level of database is where the table are created and relationships are defined (a) Internal (b) External (c) Upper (d) Conceptual	2	CO1																			
Q6	The functions SUM(), COUNT(), MAX() in SQL are termed as _____ functions	2	CO3																			
Q7	Define the term foreign key in a database	2	CO3																			
Q8	Define the term degree of a relationship in a database system	2	CO3																			
Q9	Define the term cardinality mapping in the ER Model of a database	2	CO3																			
Q10	Define the term database schema in context of a database system	2	CO3																			
SECTION B - 4Q x 5M = 20 Marks																						
Q11	Explain the pros and cons of secondary data, and also explain its significance	5	CO2																			
Q12	<p>The payoffs (in Rs) of three Acts A1, A2 and A3 and the possible states of nature S1, S2 and S3 are given below :</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th rowspan="2">States of Nature ↓</th> <th colspan="3">Act</th> </tr> <tr> <th>A1</th> <th>A2</th> <th>A3</th> </tr> </thead> <tbody> <tr> <td>S1</td> <td>-20</td> <td>-50</td> <td>200</td> </tr> <tr> <td>S2</td> <td>200</td> <td>-100</td> <td>-50</td> </tr> <tr> <td>S3</td> <td>400</td> <td>600</td> <td>300</td> </tr> </tbody> </table> <p>The probabilities of the states of nature are 0.3, 0.4 and 0.3 respectively. Determine the optimal action to be taken on the basis of EMV Criterion.</p>	States of Nature ↓	Act			A1	A2	A3	S1	-20	-50	200	S2	200	-100	-50	S3	400	600	300	5	CO4
States of Nature ↓	Act																					
	A1	A2	A3																			
S1	-20	-50	200																			
S2	200	-100	-50																			
S3	400	600	300																			
Q13	Explain the DMUR Model of Decision-making in the case of statistical data analysis.	5	CO4																			
Q14	Digital data continues to be a precious and irreplaceable asset in Big Data. Classify the digital data, and explain the characteristics of each type of data.	5	CO2																			
SECTION C - 3Q x 10M = 30 Marks																						
Q15	a) Explain Primary and Secondary, their relevance and elaborate their sources. b) Elucidate the five V's of Big Data, and their relevance.	10	CO2																			
Q16	A bookstore company sells a particular book of management for \$100. The book costs \$80 per copy, and unsold books are sold for \$30 each. Based upon the past sales figures, the seller has estimated the annual demand for the books as ranging from 18 to 23 copies. Assume that the order for the book can be placed only once a year.	5+5	CO4																			

	<p>According to given data, compute</p> <p>a) How many copies of the book should be purchased by the bookstore? b) The EVPI</p> <p>Demand : 18 19 20 21 22 23</p> <p>Probability : 0.05 0.1 0.3 0.4 0.1 0.05</p>		
Q17	<p>a) Explain the Ratio and the Interval scales, and also cite the differences in a tabular format b) Explain rules for Questionnaire Construction, and the Questionnaire Administration Modes.</p>	5+5	CO5
OR			
Q17	<p>a) Explain data storage and management technologies implemented in a database environment b) Explain the term 'data visualization' and its purpose in Business Analytics</p>	5+5	CO5
SECTION D - 2Q x 15M = 30 Marks			
Q18	<p><u>Case Study 1 – Data Modeling for the University Academic System</u></p> <p>Consider a university database for scheduling rooms for final exams. This database could be modelled as consisting of these entity sets:</p> <p>EXAM with attributes exam-id and time. COURSE with attributes name, department, and c-number SECTION with attributes s-number and enrollment, and dependent on the entity set course ROOM with attributes r-number, capacity, and building.</p> <p>a) Draw an E-R diagram for this database, showing the entities, the relationships involved and their types involved. b) Explain the different types of charts used for data visualization</p>	10+5	CO3
Q19 a)	<p><u>Case Study 2 – Data Analysis for ABC Pvt. Ltd.</u></p> <p>For a Project X, the company ABC Pvt. Ltd. projects revenue of 40 lacs in first year and the revenue is going to increase @10 lacs every year for the next 3 years in succession, after which revenue decreases by 15 lacs in the fifth year and thus will be closed after 5 years. The fixed initial investment for the project is 150 lacs and working capital requirement is 30 lacs.</p> <p>For another Project Y, the initial investment is RS 180 lacs, and the revenues generated at the end of every year are @50 lacs per year for 5 years in succession. On the basis of each these techniques, decide which project should be chosen by the Project Manager, and justify your logic for the same.</p> <p>a) Payback Period b) ROI c) NPV assuming 12.5% discount rate</p>	2+2+6	CO5
Q19 b)	<p>Consider the following relations:</p> <p>SUPPLIER (SCODE, SNAME, RATING, CITY) PART (PCODE, PNAME, COLOR, WEIGHT, CITY) SUPPLIES(SCODE, PCODE, QTY)</p> <p>Create the above tables in SQL using appropriate constraints like primary key and foreign key for the respective tables</p>	5	CO2