CBSE | DEPARTMENT OF SKILL EDUCATION

DATA SCIENCE (SUBJECT CODE - 844)

Blue-print for Sample Question Paper for Class XII (Session 2022-2023)

Max. Time: 2 Hours

Max. Marks: 50

PART A - EMPLOYABILITY SKILLS (10 MARKS):

UNIT NO.	NAME OF THE UNIT	OBJECTIVE TYPE QUESTIONS 1 MARK EACH	SHORT ANSWER TYPE QUESTIONS 2 MARKS EACH	TOTAL QUESTIONS	
1	Communication Skills - IV	-	-	-	
2	Self-Management Skills - IV	2	2	4	
3	ICT Skills - IV	2	1	3	
4	Entrepreneurial Skills - IV	2	2	4	
5	Green Skills - IV	-	-	-	
TOTAL QUESTIONS		6	5	11	
NO. OF QUESTIONS TO BE ANSWERED		Any 4	Any 3	07	
	TOTAL MARKS	1 x 4 = 4	2 x 3 = 6	10 MARKS	

PART B - SUBJECT SPECIFIC SKILLS (40 MARKS):

UNIT NO.	NAME OF THE UNIT	OBJECTIVE TYPE QUESTIONS 1 MARK EACH	SHORT ANSWER TYPE QUESTIONS 2 MARKS EACH	DESCRIPTIVE/ LONG ANS. TYPE QUESTIONS 4 MARKS EACH	TOTAL QUESTIONS	
1	Data Governance	4	1	1	6	
2	Exploratory Data Analysis	4	1	1	6	
3	Classification Algorithms I	4	1	1	6	
4	Classification Algorithms II	4	1	1	6	
5	Regression Algorithms I	4	1	-	5	
6	Regression Algorithms II	3	1	-	4	
7	Unsupervised Learning	1	-	1	2	
TOTAL QUESTIONS		24	6	5	35	
	NO. OF QUESTIONS TO BE ANSWERED	20	Any 4	Any 3	27	
	TOTAL MARKS	1 x 20 = 20	2 x 4 = 8	4 x 3 = 12	40 MARKS	

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Sample Question Paper for Class XII (Session 2022-2023)

Max. Marks: 50

Max. Time: 2 Hours

General Instructions:

- 1. Please read the instructions carefully.
- 2. This Question Paper consists of 21 questions in two sections: Section A & Section B.
- **3.** Section A has Objective type questions whereas Section B contains Subjective type questions.
- 4. Out of the given (5 + 16 =) 21 questions, a candidate has to answer (5 + 10 =) 15 questions in the allotted (maximum) time of 2 hours.
- 5. All questions of a particular section must be attempted in the correct order.

6. SECTION A - OBJECTIVE TYPE QUESTIONS (24 MARKS):

- i. This section has 05 questions.
- ii. Marks allotted are mentioned against each question/part.
- iii. There is no negative marking.
- iv. Do as per the instructions given.
- 7. SECTION B SUBJECTIVE TYPE QUESTIONS (26 MARKS):
 - i. This section has 16 questions.
 - ii. A candidate has to do 10 questions.
 - iii. Do as per the instructions given.
 - iv. Marks allotted are mentioned against each question/part.

SECTION A: OBJECTIVE TYPE QUESTIONS

is the full form of TQM.	1				
is the full form of TQM.					
a) Team Quality Management					
b) Total Quality Management					
c) Team Quantity Management					
d) Total Quantity Management					
Which of the following functions can be performed with the help of spreadsheets?	1				
I) Maintaining records					
II) Creating videos					
III) Analysing data					
IV) Performing financial calculations					
V) Writing letters					
Choose the correct options:-					
a) I, II, III, IV, V b) III, IV, V					
C) I, III, IV Accortion & Descentia correct. Discorrect cyclonetics of A	1				
Assertion & Reason is correct, R is correct explanation of A.	1				
Assertion & Reason is correct but R is not correct explanation of A.					
A is correct & R is incorrect.					
A IS Incorrect & R IS correct.					
Assertion : Schizold personality person usually is detached & aloot.					
Reason : Schizold' refers to natural tendency to direct attention towards one's inner life.					
Ravi wants to highlight the text in the slide, which option he will use for doing this:-	1				
a) Formatting Text b) Editing Text					
c) Aligning Text d) Text Colour					
Assertion & Reason is correct, R is correct explanation of A.	1				
Assertion & Reason is correct but R is not correct explanation of A.					
A is correct & R is incorrect.					
A is incorrect & R is correct.					
Assertion : 'SMART' goal setting objectifies one's outcome.					
Reason : Actions oriented skills help people to be specific with their goals.					
Riya has a jute bags manufacturing business in India, she wants to start exporting them to	1				
rest of the world but does not know if there will be sufficient demand for this product or					
not. The barrier she is facing is :-					
a) Self doubt					
b) Lack of plan					
c) Selecting the right business idea					
Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)					
Which of the following statements is True?	1				
i. Data governance helps in effective data management					
ii. Ethical guidelines must be well-defined in any organization dealing with lots of data					
iii. Data privacy is only about secure data storage					
iv. Transparency is an important ethical guideline					
You need to check if a variable has outliers. Which graph would you use?	1				
i. Histogram					
ii. Pair plot					
iii. Box plot					
	 b) Total Quality Management c) Team Quantity Management d) Total Quantity Management d) Total Quantity Management d) Total Quantity Management d) Mintaining records ii) Creating videos iii) Analysing data iv) Performing financial calculations v) Writing letters Choose the correct options:- a) I, II, III, IV, V b) III, IV, V c) I, III, IV, V d) I, III, III, III, III, III, III, III,				

	Which of the following is NOT a part of a Decision Tree?	1
	i Decision Node	1
	ii. Leaf Node	
	iii. Branch	
	iv. Result fruit	
iv.	Cross-validation helps us do the following.	1
	i. Removes bias	
	ii. Helps to test tune parameters	
	iii. Both of the mentioned	
v.	Regression can be performed for which kind of variables?	1
	i. Continuous	
	ii. Discrete	
	iii. Categorical	
	iv. All of the above	
vi.	Which of the following statement is false?	1
	i. Unsupervised learning is done on unlabeled data sets.	
	ii. Unsupervised learning needs human intervention.	
	iii. Unsupervised learning is a continuous process.	
	iv. None of the mentioned	

Q. 3	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	What are some important ethical guidelines for data?	1
	i. Keeping data secure.	
	ii. Making models impartial.	
	iii. Being open and accountable.	
	iv. All of the above.	
ii.	You need to perform a univariate analysis. Which graph can you use?	1
	i. Scatter plot	
	ii. Histogram	
	iii. Contour plot	
	iv. Both scatter plot and histogram can be used	
iii.	A decision tree can be further divided into further sub-trees.	1
	i. True	
	ii. False	
iv.	K-NN works well with imbalanced data sets.	1
	i. True	
-	ii. False	
v.	Which of the following statement is false?	1
	i. Regression can be done for only two variables.	
	ii. Regression is a supervised learning technique.	
	III. Regression can be done for categorical variables.	
	IV. Regression helps us predict the value of the dependent variable.	
vi.	Non-linear regression is than linear regression.	1
	i. more flexible	
	ii. less flexible	
	iii. equally flexible	
Q. 4	Answer any 5 out of the given 6 questions $(1 \times 5 = 5 \text{ marks})$	
i.	Some organizations store more personal information than required. This is in accordance	1
	with Data Ethics.	
	i. True	
	ii. False	

ii.	You need to check the relationship between the two variables. Which graph would you	1
	use?	
	i. Histogram	
	ii. Pair plot	
	iii. Box plot	
	iv. Any of the mentioned graphs can be used	
iii.	Which of the following statement is false?	1
	i. Decision Trees are intuitive to understand.	
	ii. Decision Trees can be used for classification and regression.	
	iii. Random Forests algorithm uses Decision Trees.	
	iv. Decision Trees can only handle numerical variables.	
iv.	Which of the following statement is false?	1
	i. K-Nearest Neighbors uses proximity for prediction.	
	ii. K-Nearest Neighbors takes a majority vote on K data points.	
	iii. K-Nearest Neighbors can be used for clustering.	
	iv. K-Nearest Neighbors is especially used in data mining and pattern recognition	
v.	The value of RSME is usually greater than the value of MAE.	1
	i. True	
	ii. False	
vi.	The equation for Non-Linear Regression follows the equation of a curve.	1
	i. True	
	ii. False	

Q. 5	Answer any 5 out of the given 6 questions $(1 \times 5 = 5 \text{ marks})$	
i.	Which of the following is not a focus area under data governance?	1
	i. Data integrity	
	ii. Data availability	
	iii. Data traceability	
	iv. Data consistency	
ii.	Which of the following is a data cleaning step?	1
	i. Adding duplicates	
	ii. Ignoring outliers	
	iii. Removing duplicates	
	iv. Adding features	
iii.	Choose the correct statement	1
	i. Regression trees are used when the dependent variable is continuous. Classification	
	trees are used when the dependent variable is categorical	
	ii. Classification trees are used when the dependent variable is continuous. Regression	
	trees are used when the dependent variable is categorical	
	iii. Both classification and regression trees are used when the dependent variable is continuous	
	iv. Both classification and regression trees are used when the dependent variable is	
iv.	What is the K-Nearest Neighbors algorithm used for?	1
	i. Regression	
	ii. Classification	
	iii. Both Regression and Classification	
	iv. Neither Regression nor Classification	
٧.	MEA considers the direction of the residuals	1
	i. True	
	ii. False	

SECTION B: SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 5 questions on Employability Skills ($2 \times 3 = 6$ marks) Answer each question in 20 - 30 words.

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2		ı.	esentation	es in your pre	lifferent shape	· inserting o	e steps foi	Write the	Q. 7
2		F	E	D	С	В	Α	S.No.	Q. 8
	1	Total Salary	TA/DA	Basic Pay	Grade Pay	Emp. ID	Name		
]		1000	2000	3000	ab1	Ravi	1	
			800	2200	3500	ab2	Reena	2	
			1200	3000	4000	ab3	Vikas	3	
			800	3300	3000	ab5	Harsh	4	
			1500	5000	2800	ab5	Geeta	5	
		ng order.	n ascendir	of Vikas. total salary ir	ns using above ne total salary ed to arrange t	ing questio or finding tl shall be use	formula fo formula fo	a) Write b) Which	
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2	personality?							0 10	
2	Situations Word							Q. 10	
		nture	Ve	s in his s finding it	t more batche g classes but i ners	ants to star ive coachin o hire teacl	Shobit wa competit difficult t	a)	
		rriers	nts Ba	mos. He wan es of snacks	of selling Mo selling all typ	s a business restaurant	Karan ha to open a	b)	
		sk	ne Ris	ore, where h	electronics st ator etc	s started ar AC,Refrige	Aman ha sells LED,	c)	
		rriers sk	nts Ba	mos. He wan es of snacks core, where h	s of selling Mo s selling all typ electronics st rator etc	s a business restaurant s started ar AC,Refriger	Karan ha to open a Aman ha sells LED,	b) c)	

Answer any 4 out of the given 6 questions in 20 – 30 words each (2 x 4 = 8 marks)

Q. 11	What are some of the aspects covered by data governance?	2	
Q. 12	What are the ways to handle missing data?	2	
Q. 13	What are Decision Trees?	2	
Q. 14	Mention two important characteristics of K-NN.	2	
Q. 15	Define Mean Absolute Error and Root Mean Square Deviation	2	
Q. 16	What is Multiple Linear Regression?	2	

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1

Q. 17	Write a short note on the California Consumer Privacy Act.	4
Q. 18	What are some of the differences between univariate and multivariate analysis? Give some	4
	examples.	
Q. 19	Write the steps to create a Decision Tree.	4
Q. 20	What is cross-validation? Mention the steps involved in cross-validation.	4
Q. 21	Mention some common applications of Unsupervised Learning.	4

Answer any 3 out of the given 5 questions in 50–80 words each (4 x 3 = 12 marks)