CBSE | DEPARTMENT OF SKILL EDUCATION

DATA SCIENCE (SUBJECT CODE - 844)

Blueprint for Sample Question Paper for Class XII (Session 2026-2027)

Max. Time: 2 Hours **Max. Marks: 50**

PART A - EMPLOYABILITY SKILLS (10 MARKS):

UNIT NO.	NAME OF THE UNIT	OBJECTIVE TYPE QUESTIONS	SHORT ANSWER TYPE QUESTIONS	TOTAL QUESTIONS
		1 MARK EACH	2 MARKS EACH	
1	Communication Skills -	1	1	2
2	Self-Management Skills -	2	1	3
3	ICT Skills -	1	1	2
4	Entrepreneurial Skills -	1	1	2
5	Green Skills -	1	1	2
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	SHORT ANSWER TYPE QUESTIONS	DESCRIPTIVE/ LONG ANS. TYPE QUESTIONS	TOTAL QUESTIONS
		1 MARK EACH	2 MARKS EACH	4 MARKS EACH	
1	Data Governance	4	1	1	6
2	Exploratory Data Analysis	3	1	1	5
3	Classification Algorithms – I	3	1	1	5
4	Classification Algorithms – II	4	1	-	5
5	Regression Algorithms – I	4	1	-	5
6	Regression Algorithms – II	2	-	1	3
7	Unsupervised Learning	4	1	1	6
TOTAL QUESTIONS		**24**	**6**	**5**	**35**
NO. OF QUESTIONS TO BE ANSWERED		**Any 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 2026-2027)

Max. Time: 2 Hours **Max. Marks: 50**

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.

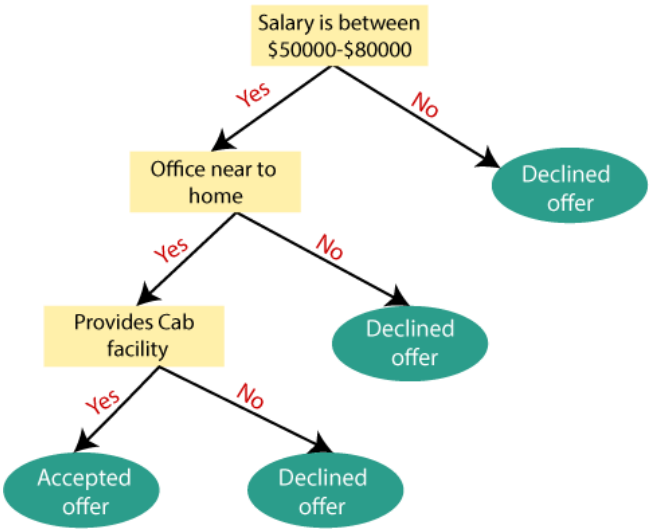
SECTION A: OBJECTIVE TYPE QUESTIONS

<table>
<tr><td>Q. 1</td><td colspan="2">Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)</td></tr>
<tr><td>i.</td><td>Statement 1: The manager replied, “Alright, you may come late.”
Statement 2: The manager replied, “Alright, you may come late. But it is a matter of great concern that most employees come late and you are also developing the same habit.”
From the above sentences which statement(s) is/are concise?
a) Only statement1
b) Only statement2
c) Both statement1 and 2
d) None of the statements</td><td>1</td></tr>
<tr><td>ii.</td><td>“An athlete may run five miles a day.”
The sentence given above is an example of
a) Intrinsic motivation
b) Extrinsic motivation
c) Self-confidence
d) Result Oriented Goal</td><td>1</td></tr>
<tr><td>iii.</td><td>Identify the term to denote the personality disorder of a person who is detached aloof, and prone to introspection and fantasy.
a) Schizoid personality
b) Antisocial personality
c) Histrionic personality
d) Dependent personality</td><td>1</td></tr>
<tr><td>iv.</td><td>Match the following:
<table><tr><td>A. Namebox</td><td>1. Helps to arrange the slide content in an organised way</td></tr><tr><td>B. Workbook</td><td>2. Location of the selected cell.</td></tr><tr><td>C. Layout</td><td>3. Spreadsheet that has one or more worksheets</td></tr></table>
a) A ? 2; B ? 3; C? 1
b) A ? 3; B ? 1; C ? 2
c) A ? 1; B ? 3; C ? 2
d) A ? 1; B ? 2; C ?3</td><td>1</td></tr>
<tr><td>v.</td><td>Mr. Sam constantly sets high standards and strives to achieve this quality by working hard and showing innovativeness.
Identify the motivating quality Sam is striving for.
a) Uniqueness
b) Perseverance
c) Standard of Excellence
d) Barrier</td><td>1</td></tr>
</table>

vi.	_____worker is the one who is employed in the environmental sectors of the economy. a) Blue Collar b) Red Collar c) Green Collar d) White Collar	1
Q. 2	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**	
i.	Statement 1: One major aspect of data privacy is that the individual is considered to be the sole owner of his data Statement 2: Data privacy rules are fixed and cannot be updated. a) Both Statement1 and Statement2 are correct b) Both Statement1 and Statement2 are incorrect c) Statement1 is correct but Statement2 is incorrect d) Statement2 is correct but Statement1 is incorrect	1
ii.	_____is done with the help of summary statistics and graphical representations. a) Observation b) Exploratory Data Analysis c) Outlier d) Clustering	1
iii.	Identify the algorithm that makes predictions based on the outcomes of several decision trees. a) Classification b) Regression c) Random Forest d) Supervised Learning	1
iv.	A big value of k increases the effect of the 24 outliers but also causes the decision surface to generalize. State True or False	1
v.	_____in general, is the problem of predicting the value of the dependent variable. a) Clustering b) Regression c) Modelling d) Univariate	1
vi.	_____can be useful for detecting fraud in financial systems or other security applications. a) Customer Personas b) News Sections c) Anomalies d) Recommendation Engines	1

Q. 3	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**	
i.	Which of the following is an incorrect statement while dealing with data? a) Keep the data secure. b) Create machine learning models that are biased and robust c) Be as open and accountable as possible d) None of the above	1
ii.	Some of the graphical methods like bar charts, histograms, frequency polygons, and pie charts are used for a) Clustering b) Univariate Analysis c) Bivariate Analysis d) Both b and c	1
iii.	Each leaf node contains a _____ a) Branch b) Outcome c) Class Label d) Root	1
iv.	K-NN simply reads all the data points during the prediction stage and makes a prediction. Which pros of KNN does the statement refer to? a) Simple and Intuitive b) Good for Multi-Class problems c) No assumptions d) No Training Step	1
v.	A positive relationship between rainfall and crop growth can be evaluated using the formula - _____ a) $Y = a0 + a0x1+a0x2$ b) $Y = mx + b$ c) $Y = (x2 - x1) / (y2 – y1)$ d) $Y = mx$	1
vi.	_____techniques apply when there is no class to be predicted but rather when the instances are to be divided into natural groups. a) Clustering b) Classification c) Regression d) Line of Best Fit	1

Q.4	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**	
i.	The HIPAA stands for _____ a) Healthy Inspection Portability and Accountability Act b) Health Insurance Payment and Accountability Act c) Health Insurance Portability and Accountability Act d) Health Insurance Portability and Accident Coverage Act	1
ii.	Univariate analysis involves a) Only statistical methods b) Only graphical methods c) Both Graphical and Statistical methods d) Complex form of statistical methods	1
iii.	Decision tree outputs are very difficult to understand even for people from a non-analytical background. Is the given statement true or false?	1
iv.	MAE stands for_____- a) Mean Arithmetic Error b) Median Absolute Error c) Mean Absolute Error. d) Module Absolute Error	1
v.	Logarithmic functions are an example of _____ a) Regression b) Linear Functions c) Univariate Analysis d) Non-linear functions	1
vi.	Identify the type of machine learning process in which algorithms are trained using data that is well-labeled a) Unsupervised Learning b) Decision Tree c) Supervised Learning d) K – means clustering	1
Q.5	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**	

i.	Given below are two statements, one labeled as Assertion (A) and the other labeled as Reason (R). Select the correct answer from the code given below : Assertion(A): The Personal Data Protection Bill 2019 was tabled in Indian Parliament by the Ministry in consultation with experts and stakeholders. Reason(R): The Bill covers mechanisms for the protection of data and proposes the setting up of a Data Protection Authority of India for it. a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A). b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A). c) Assertion (A) is true, but Reason (R) is false. d) Assertion (A) is false, but Reason (R) is true.	1
ii.	Observe the figure and answer the following question.  How many leaf nodes and decision nodes are seen? a) 4, 3 b) 3, 4 c) 5, 2 d) 2, 5	1
iii.	Ram is trying to apply the Cross-validation technique to gauge the effectiveness of his model's performance in diabetes. But he is unsure as to which value of k should be chosen. According to the thumb rule, what can be taken as the value of K if it is unknown? a) 5 b) 6 c) 9 d) 10	1

iv.	$y = \beta0 + \beta1x + \beta2x^2 + \varepsilon$ The above formula is for _____ a) Linear Regression b) Non-Linear Regression c) Multiple Linear Regression d) Cross Validation	1
v.	In real-life scenarios, it is best if the value of Root Mean Square Deviation is _____. a) Moderate b) Small c) Large d) Zero	1
vi.	What is the term used by the KNN algorithm to solve a problem?	1

SECTION B: SUBJECTIVE TYPE QUESTIONS

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

Q.6	Explain the 5 stages of Active Listening.	2
Q.7	Identify the term that describes the personality of an individual a) A person is interested in learning new things, meeting new people, and making friends, and likes b) Individuals having such a trait are, generally, kind, sympathetic, cooperative, warm, and considerate. c) People, who have difficulty meeting others and worry too much about the thing d) Self-disciplined individuals do their work on time and take care of others.	2
Q.8	Observe the following figure and answer the following questions:  a) Write the formula to calculate the total in cell F1 b) What is the term used to denote if only C3 is selected c) B1:B4 denotes _____ d) What data types are used in the above spreadsheet	2
Q.9	"Startups seek financial investment differently than most small businesses". Justify the statement.	2

	A	B	C	D	E
1	Name Subjects	John	Ron	Harry	Jenifer
2	Maths	89	98	67	99
3	English	90	87	76	90
4	Science	67	65	89	67

Q.10	If there is a weather forecast of less rain, farmers will need to grow crops that can survive in drought conditions. Identify the policy launched by the Government of India to deal with such issues and write in brief about it.	2

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

Q.11	Mr Sam residing in Europe has a high level of control over his data. Explain the policy implemented to help Mr. Sam acquire this.	2
Q.12	List down the steps involved in Data Cleaning.	2
Q.13	Define Cross Validation. Name the popular way of doing Cross-Validation.	2
Q.14	Draw a decision tree to depict the following scenario. An advertising campaign is comparing Facebook ads and Instagram sponsorship. Under Facebook ads, the cost is $100. If success 50% cost is $1000 and 50% failure cost is $200. Under Instagram sponsorship, the cost is $90. If 50% success, the cost is $50, and 50% failure, the cost is $900.	2
Q.15	Linear regression is known as "linear". Justify the statement and write the equation for simple linear regression.	2
Q.16	Write about unsupervised learning in the news section.	2

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

Q.17	Class XII students were given an assignment to write notes about Data Privacy and also to list down the points to be kept in mind while dealing with data.	4
Q.18	Explain Exploratory Data Analysis. Differentiate between Univariate and Multivariate Analysis	4
Q.19	List the advantages of the Decision Tree. Rahul thinks Classification and Regression are the same. Is it the same or different? If they are different, state the differences between them.	4
Q.20	The weight of the person is linearly related to their height. So, this shows a linear relationship between the height and weight of the person. According to this, as we increase the height, the weight of the person will also increase. a) Name the kind of regression involved b) Is the relationship positive or negative c) Write the formula and label each of the variables in it. d) What is the basic objective of this regression? Name the term associated with it.	4
Q.21	Mention any one method to perform clustering. Explain the working of K Means Clustering.	4