

CBSE | DEPARTMENT OF SKILL EDUCATION

DATA SCIENCE (SUBJECT CODE - 419)

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

Max. Time: 2 Hours

Max. Marks: 50

PART A - EMPLOYABILITY SKILLS (10 MARKS):

S. NO.	NAME OF THE UNIT	OBJECTIVE TYPE QUESTIONS	SHORT ANSWER TYPE QUESTIONS	TOTAL QUESTIONS
		1 MARK EACH	2 MARKS EACH	
1	Self-Management Skills - II	2	2	4
2	ICT Skills - II	2	1	3
3	Entrepreneurial Skills - II	2	2	4
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	Use of statistics in Data Science	7	1	1	9
2	Distributions in Data Science	5	1	1	7
3	Identifying Patterns	3	1	1	5
4	Data Merging	6	2	1	9
5	Ethics in Data Science	3	1	1	5
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 X (Session 2022-2023)

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

Q. 1	Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)	
i.	<p>What are the ABC of Stress Management?</p> <p>a) Avertible, Belief, Consequences. b) Adversarial, Being, Control, c) Adversity, Belief, Consequences d) Adversity, Belief, Control</p>	1
ii.	<p>Which of the below is not a step of Effective Time Management–</p> <p>a) Organize b) Prioritize c) Control d) Remember</p>	1
iii.	<p>ICT stands for</p> <p>a. International Communication Technology b. Information Communication Technology c. Informative Communicative Technology d. International Communicative Technology</p>	1
iv.	<p>Things we need a mouse for –</p> <p>a) Hover, Point and click, turn on, Typing b) Roll over, Drop and Drag, Double click, Typing c) Drop and Drag, Hover, Turn on, Double Click d) Hover, Point and click, Drop and Drag, Double Click</p>	1
v.	<p>Akash wanted to build his shoe business. He doesn't have money, so he borrowed money from his family and the bank. After 2 years, he paid off all the debts. He is.....</p> <p>a. Diligent b. Decisive c. Composed d. All of the above</p>	1
vi.	<p>Name the two types of employment</p> <p>i. Self-Employment ii. Individual Employment iii. Wage Employment iv. Group Employment</p> <p>a. Both i and iii b. Both ii and iii c. Both ii and iv d. Both i and iv</p>	1

Q. 2	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	Which of the following is NOT a way of subsetting data? i. Row based ii. Column based iii. Feature based iv. Data specific	1
ii.	Mean is also termed as i. complex average ii. strike point iii. compound iv. simple average	1
iii.	Median is the _____ point of the sorted data set. i. first ii. middle iii. last iv. outlier	1
iv.	MAD is the _____ of how far away all values in a data set are from the mean. i. average ii. sum iii. difference iv. product	1
v.	Depth of an ocean and weight of a person are examples of i. discrete data ii. continuous data iii. both discrete and continuous data iv. neither discrete nor continuous data	1
vi.	Which of the following is principle for the ethical guidelines around Data Analysis? i. Shared private information can be made public ii. Customers should not have a clear view of how their data is being used. iii. Data should interfere with the human will iv. Data should never institutionalize unfair biases	1

Q. 3	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	The relationship between each employee of a company and their unique employee ID is an example of i. One to One join ii. One to Many join iii. Many to Many join iv. Many to One join	1
ii.	According to the Central Limit Theorem, the shape of the sampling distribution will always approach normality as the sample size _____ i. decreases ii. increases iii. remains same iv. decreases exponentially	1

iii.	Which of the following is NOT a common cognitive bias? i. Selection bias ii. Linearity bias iii. Modulation bias iv. Confirmation bias	1
iv.	_____ is the measure of how spread-out data points are. i. Differential deviation ii. Spatial distribution iii. Standard distribution iv. Standard deviation	1
v.	Which of the following is/are ways(s) of discarding physical data? i. Shredding the documents ii. Cutting the documents iii. Burning the documents iv. All of the mentioned	1
vi.	_____ framework aims at creating methods, set of responsibilities and processes to standardize, integrate, protect and store data. i. Data administration ii. Data management iii. Data governance iv. Data democracy	1

Q. 4	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	In the formula to calculate the Z score, $Z = (x-\mu)/\sigma$ μ stands for i. Raw score ii. Population mean iii. Population density iv. Standard deviation	1
ii.	If the z-score of a data point is 0, it _____ i. lies on the mean ii. lies above the mean iii. lies below the mean iv. can be on either side of the mean	1
iii.	The interquartile range can be calculated by subtracting i. Third quartile from the First quartile ii. First quartile from the Third quartile iii. Second quartile from the Fourth quartile iv. First quartile from the Second quartile	1
iv.	Data collection design must acknowledge _____ in the dataset. i. continuity ii. discreteness iii. variability iv. scalability	1

v.	A discrete probability distribution may be represented by i. a table ii. a graph iii. a mathematical equation iv. all of the mentioned	1
vi.	The pth percentile of a distribution is such that i. p percent of the observations fall at it ii. p percent of the observations fall below it iii. p percent of the observations fall at or below it iv. the value is p.	1

Q. 5	Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)	
i.	The distribution of heights of Indian women aged 18 to 24 is approximately normally distributed with a mean of 65.5 inches and standard deviation of 2.5 inches. Calculate the z-score for a woman six feet tall. i. 2.60 ii. 4.11 iii. 1.04 iv. 1.33	1
ii.	In a manufacturing company, the number of employees in unit A is 40, the mean is Rs. 6400 and the number of employees in unit B is 30 with the mean of Rs. 5500 then the combined arithmetic mean is i. 9500 ii. 8000 iii. 7014.29 iv. 6014.29	1
iii.	The mean deviation for the following data 5, 6, 7, 8, 6, 9, 13, 12, 15 is i. 1.5 ii. 3.2 iii. 2.89 iv. 5	1
iv.	If a card is chosen from a standard deck of cards, what is the probability of getting a five or a seven? i. 4/52 ii. 1/26 iii. 8/52 iv. 1/169	1
v.	What is the probability that a ball is drawn at random from a jar? i. 0.2 ii. 1 iii. 0 iv. Can not be determined from the given information	1
vi.	Which of the following is not a correct statement about a probability? i. It must have a value between 0 and 1 ii. It can be reported as a decimal or a fraction iii. A value near 0 means that the event is not likely to occur/happen iv. It is the collection of several experiments	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	Define any two of the following a. Self-Management. b. Adaptability c. Time Management	2
Q. 7	Mention one quality of a Self – Motivated person with an example.	2
Q. 8	Describe in brief the way one can prevent threats to computer.	2
Q. 9	Write the difference between Needs, Wants and Demands.	2
Q. 10	How is an entrepreneur and a society interrelated?	2

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

Q. 11	List 3 real-life applications of Standard Deviation	2
Q. 12	What is discrete and continuous data?	2
Q. 13	Explain selection bias.	2
Q. 14	What is data merging?	2
Q. 15	What are various techniques of safely discarding digital confidential data?	2
Q. 16	Why is z-score important?	2

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

Q. 17	Explain the different ways of subsetting data.	4
Q. 18	Explain what is the Statistical Problem Solving Process.	4
Q. 19	What is the central limit theorem? Give two practical applications of this theorem.	4
Q. 20	Explain percentile, quartiles, and deciles, with examples.	4
Q. 21	Explain principles on ethics that one should follow while performing data analysis.	4