CBSE

Central Board of Secondary Education

Question Paper

2024

AGLASEM.COM

Series &RQPS

SET-4

प्रश्न-पत्र कोड
Q.P. Code **367**

रोल नं.
Roll No.

परीक्षार्थी प्रश्न-पत्र कोड को उत्तर-पुस्तिका के मुख-पृष्ठ पर अवश्य लिखें ।
Candidates must write the Q.P. Code on the title page of the answer-book.

- Please check that this question paper contains **11** printed pages.
- Please check that this question paper contains **21** questions.
- Q.P. Code given on the right hand side of the question paper should be written on the title page of the answer-book by the candidate.
- **Please write down the serial number of the question in the answer-book before attempting it.**
- 15 minute time has been allotted to read this question paper. The question paper will be distributed at 10.15 a.m. From 10.15 a.m. to 10.30 a.m., the candidates will read the question paper only and will not write any answer on the answer-book during this period.

ARTIFICIAL INTELLIGENCE

*Time allowed : **2** hours*

*Maximum Marks : **50***

General Instructions :

(i) *Please read the instructions carefully.*

(ii) *This question paper consists of **21** questions in **two** Sections. Section – **A** & Section – **B**.*

(iii) *Section – **A** has objective type questions whereas Section – **B** contains subjective type questions.*

(iv) *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.*

(v) *All questions of a particular section must be attempted in the correct order.*

(vi) *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.*

(vii) *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)

1. Answer any **4** out of the given **6** questions on Employability Skills. **4 × 1 = 4**

(i) _____ is a form of communication that allows students to put their feelings and ideas on paper, to organize their knowledge and beliefs into convincing arguments, and to convey meaning through well-constructed text. **1**

(a) Active Listening (b) Writing

(c) Absolute Phrase (d) Speeches

(ii) The term OCPD stands for _____. **1**

(a) Obsessive Compulsive Personality Disorder

(b) Operational Compulsive Personality Disorder

(c) Obsessive Compulsive Personality Defect

(d) Organised Compulsive Professional Disorder

(iii) Identify the incorrect statement from the following : **1**

(a) Motivation and positive thinking can help us overcome fears and take up new challenges.

(b) Motivation and positive thinking can help us in ignoring our duties.

(c) An individual's motivation may come from within or be inspired by others or events.

(d) Directing behaviour towards certain motive or goal is the essence of motivation.

(iv) Which of the following statements is NOT true for spreadsheet ? **1**

(a) A workbook has one or more worksheets.

(b) Large volumes of data can be easily handled and manipulated.

(c) Data cannot be easily represented in pictorial form like graphs or charts.

(d) Built-in functions make calculations easier, faster and more accurate.

(v) Which of the following is one of the barriers that an entrepreneur may face ? **1**

(a) Self-confidence

(b) Availability of monetary resources on time

(c) Unavailability of monetary resources on time

(d) Availability of skilled labour/staff.

(vi) A _____ is defined as one that helps bring about and maintain transition to environmentally sustainable forms of production and consumption. **1**

(a) Blue collar job (b) White collar job

(c) Yellow job (d) Green job

2. Answer any **5** out of the given **6** questions. **5 × 1 = 5**

(i) During Train-Test split evaluation, we usually split the data around _____ between testing and training stages. **1**

(a) 90% – 10% (b) 20% – 80%

(c) 100% – 0% (d) 0% – 100%

(ii) With reference to Data storytelling, complete the given statement :

"Data can be persuasive, but _____ are much more." **1**

(a) Machines (b) Projects

(c) Stories (d) Humans

(iii) _____ provides a useful abstract model for thinking about time series generally and for better understanding problems during time series analysis and forecasting. **1**

(a) Decomposition (b) Modelling

(c) Stages (d) Building

(iv) The first fundamental step when starting an AI initiative is _____. **1**

(a) Evaluation (b) Testing

(c) Deployment (d) Scoping

(v) Which of the following is not one of the steps of an AI project life cycle ? **1**

(a) Problem definition (b) Understanding the problem

(c) Data delivery (d) Data gathering

(vi) Which of the following does not come under open languages category, used for AI development platforms ? **1**

(a) Linux (b) Python

(c) R (d) Scala

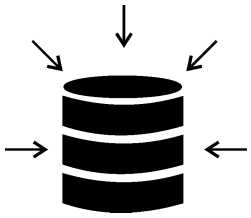
3. Answer any **5** out of the given **6** questions. **5 × 1 = 5**

(i) _____ is the last step in the AI project life cycle. **1**

(a) Problem definition (b) Data gathering

(c) Deployment (d) Evaluation

(ii) Identify the given element that makes a compelling data story and choose its correct name from the following options : **1**



(a) Graphs (b) Numbers

(c) Story (d) Data

(iii) In _____ phase, it's crucial to precisely define the strategic business objectives and desired outcomes of the project. **1**

(a) Design (b) Deployment

(c) Testing (d) Requirement Analysis

(iv) **Assertion (A) :** With reference to Data storytelling, narrative is the way we simplify and make sense of a complex world. **1**

Reason (R) : Narrative explains what is going on within the dataset.

Select the appropriate option for the statements given above :

(a) Both (A) and (R) are true and (R) is the correct explanation of (A).

(b) Both (A) and (R) are true and (R) is not the correct explanation of (A).

(c) (A) is true but (R) is false.

(d) (A) is false but (R) is true.

(v) AI is perhaps the most transformative technology available today. At a high level, every AI project follows total _____ steps. **1**

(a) Six (b) Seven

(c) Eight (d) Infinite

(vi) During step-3 of AI model life cycle, _____ should include all relevant subsets of training data. **1**

(a) Relevant Data (b) Deployment

(c) Test data (d) Scoping

4. Answer any **5** out of the given **6** questions. **5 × 1 = 5**

(i) Match the following : **1**

1.	Open Frameworks	A.	AutoAI
2.	Open Languages	B.	Anaconda
3.	Development tools	C.	Python
4.	Productivity-enhancing capabilities	D.	XGBoost

(a) 1-D, 2-A, 3-B, 4-C

(b) 1-D, 2-C, 3-B, 4-A

(c) 1-B, 2-A, 3-D, 4-C

(d) 1-C, 2-B, 3-A, 4-D

(ii) Stories that incorporate _____ and analytics are more convincing than those based entirely on anecdotes or personal experience. **1**

(a) Suspense (b) Humour

(c) Data (d) Energy

(iii) During modelling approach of Capstone project, the data scientist will use a _____ set for predictive modelling. **1**

(a) Training (b) Testing

(c) Valuable (d) Known

(iv) As Data Storytelling is a structured approach for communicating insights drawn from data, and invariably involves a combination of key elements. **1**

When the _____ is accompanied with data, it helps to explain the audience what's happening in the data and why a particular insight has been generated.

(a) Data (b) Visuals

(c) Narrative (d) Story

(v) With reference to AI Model Life Cycle, which of the following is true for Building the Model ? **1**

(a) This is arguably the most important part of your AI project.

(b) Phrase that characterizes this project stage : "garbage in, garbage out".

(c) This stage involves the planning and motivational aspects of your project.

(d) It is essentially an iterative process comprising all the steps relevant to building the AI or machine learning model.

(vi) RMSE stands for _____. **1**

(a) Root Median Squared Error

(b) Radian Mean Squared Error

(c) Root Mean Search Error

(d) Root Mean Squared Error

5. Answer any **5** out of the given **6** questions. **5 × 1 = 5**

(i) Good stories don't just emerge from data itself; they need to be unravelled from _____ relationships. **1**

(a) Data (b) Numbers

(c) Charts (d) Computer

(ii) The train-test procedure is appropriate when there is a sufficiently _____ data sets available. **1**

(a) Comparative (b) Large

(c) Small (d) Equal

(iii) During the third step of AI Model Life Cycle, the volume of test data can be large, which presents _____. **1**

(a) Complexities (b) Accuracy

(c) Efficiency (d) Redundancy

(iv) In _____, we run our modelling process on different subsets of the data to get multiple measures of model quality. **1**

(a) Train-Test Split (b) Regression

(c) Cross-validation (d) Machine learning

(v) The machine learning life cycle is the _____ process that AI or machine learning projects follow. **1**

(a) Irreversible (b) Cyclic

(c) One-time (d) Static

(vi) Data Modelling focuses on developing models that are either descriptive or _____. **1**

(a) Inclusive (b) Predictive

(c) Selective (d) Reactive

Section – B

(Subjective Type Questions)

Answer any **3** out of the given **5** questions on Employability Skills. Answer each question in **20-30** words : **3 × 2 = 6**

6. Differentiate between 'sentence' and 'phrase' with the help of suitable example. **2**

7. Briefly explain the following terms : **2**

(a) Personality

(b) Personality disorders

8. Mr. Chowdhary wants to explain the working of a product to his clients. To make an impact on their audience, either he can use homemade charts or make a digital presentation using a computer and presentation software. Which out of the two options is more advantageous and why ? Give any three points to support your answer. **2**

9. What do you mean by interpersonal skills ? Why is it important for an entrepreneur to possess it ? Briefly discuss. **2**

10. Mention any four advantages of Green jobs. **2**

Answer any **4** out of the given **6** questions in **20-30** words each. **4 × 2 = 8**

11. What is a training set ? **2**

12. Name the two categories of loss functions. **2**

13. "Stories create engaging experiences that transport the audience to another space and time". Justify this statement. **2**

14. What is a Capstone project ? Give any two examples. **2**

15. Name the two techniques that can be used to validate AI model quality. **2**

16. Name any two open frameworks and two development tools that can be used to build an AI model. **2**

Answer any **3** out of the given **5** questions in **50-80** words each. **3 × 4 = 12**

17. List any four importance of Data Storytelling. **4**

18. What is Design Thinking ? List its main stages. **4**

19. Explain the "Design/Building the Model" step of the AI Model lifecycle in detail. **4**

20. Expand and explain the term MSE. Give the mathematical formula to calculate MSE. Why use MSE ? Briefly discuss. **4**

21. (a) Why Storytelling is so powerful and cross-cultural ? Explain. **4**

(b) Which of the following is a better data story ? Give reasons.

Image 1

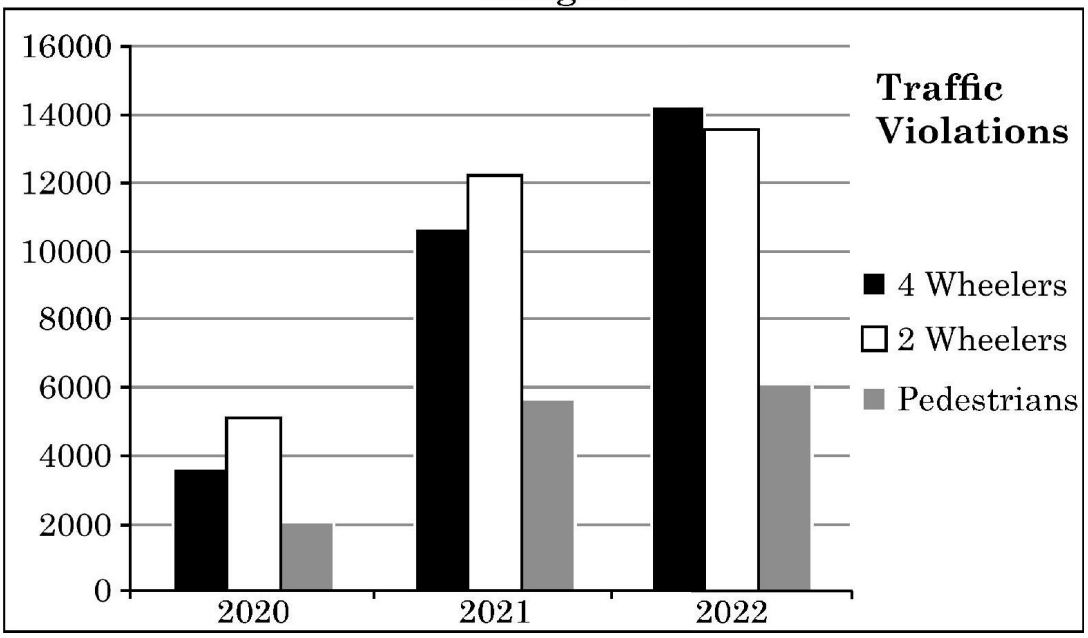
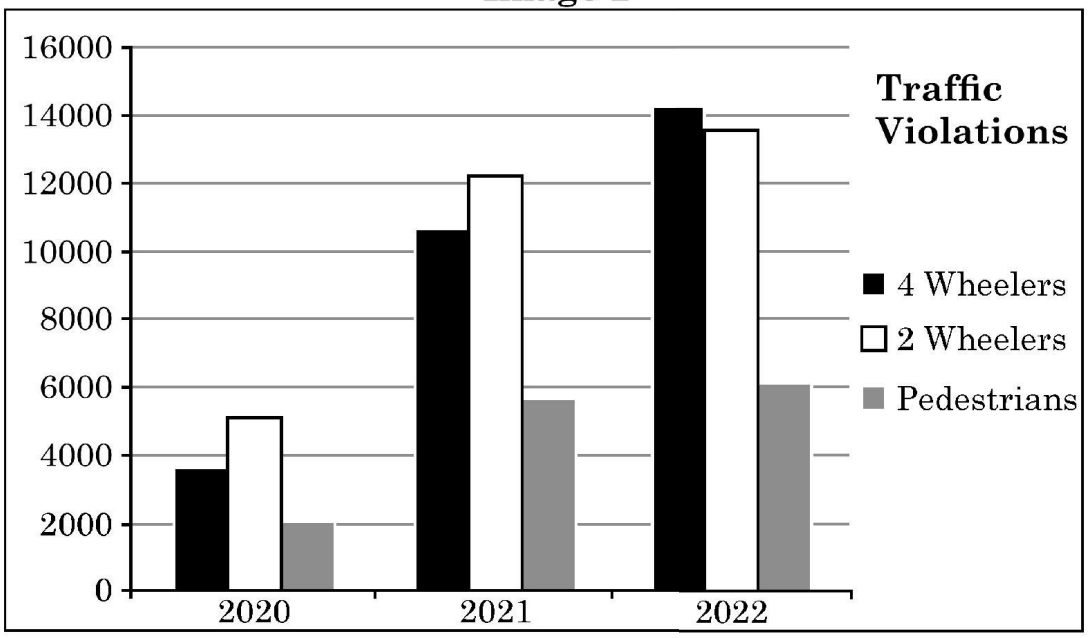


Image 2



Source : Agency data from Metro City

Observations :

In 2020, due to Covid, most people were woking from Home, and in the later part of the year Corporates opened in Hybrid mode.

2 Wheelers are not behind 4 Wheelers in Traffic Violations.

Pedestrians are not following traffic rules. They are mostly found Crossing on red light for pedestrians, and Crossing middle of the road barricade by Jumping over it and not using Zebra





CBSE STUDY MATERIAL

CBSE Board

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INFORMATION
1 Time Table
2 Result
3 Syllabus

OTHER RESOURCES
Maps of India, Maps of World
Writing Skill Formats
Periodic Table

- Class 9 Notes
- Class 10 Notes
- Class 11 Notes
- Class 12 Notes

CLASS	STUDY MATERIAL
09	Sample Paper
10	Sample Paper
11	Sample Paper
12	Sample Paper
09	Question Paper
10	Question Paper
11	Question Paper
12	Question Paper
	NCERT Book
	NCERT Solutions

ENTRANCE EXAMS		
JEE Main	CLAT	CUET UG
JEE Advanced	NEET UG	Fashion & Design