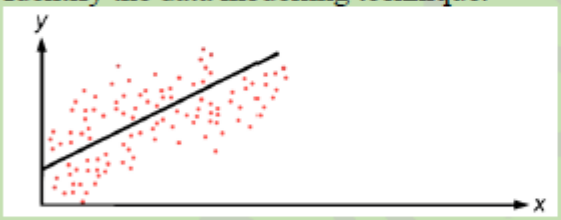
CH 1 : **AI REFLECTION, PROJECT CYCLE AND ETHICS**

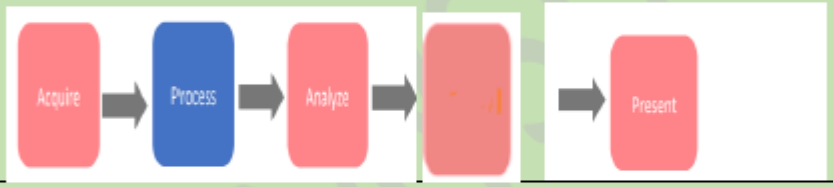
	20 questions of 1 mark each (20 x 1 = 20)
1.	State True / False Machine Learning is a subset of Deep Learning.
2.	Which of the following is not a domain of AI? (a) CV (b) DS (c) SN (d) NLP
3.	Spam filter is an application of _____. (a) Natural Language Processing (c) Computer Vision (b) Data Science (d) Segmentation
4.	_____ (AI Ethics / AI Access) needs to be ensured so that everyone can afford the benefit of AI.
5.	Searching for a Chef's photo in the web browser mostly give men's images. This is an instance of _____. (a) AI Access (b) AI Bias (c) AI Domain (d) AI Ethics
6.	Which of the following is not a responsibility of AI developers? (a) User data protection (b) Maintaining Dignity of users (c) Class Segregation (d) Maintain price performance ratio
7.	Choose the five stages of AI project cycle in correct order: a. Evaluation -> Problem Scoping -> Data Exploration -> Data Acquisition -> Modelling b. Problem Scoping -> Data Exploration -> Data Acquisition -> Evaluation -> Modelling c. Data Acquisition -> Problem Scoping -> Data Exploration -> Modelling ->Evaluation d. Problem Scoping -> Data Acquisition -> Data Exploration -> Modelling ->Evaluation
8.	Which of are the advantages of developing an AI Project Cycle? i. Understandability ii. Modularity iii. Cost Effective iv. Time saving (a) i & iv (b) ii & iii (c) i & ii (d) iii & iv
9.	4W's problem canvas does not consider _____ (a) When (b) Where (c) Why (d) Who
10.	_____ summarises all the key points of a problem as a single format.
11.	AI system must be fed with _____ Data and it can predict next level of data called _____ Data.

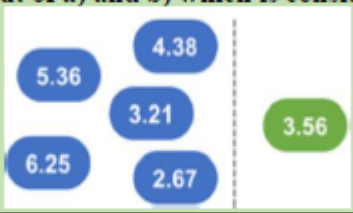
12.	Which of the following is not a correct method of Data Collection? (a) Survey (b) Prediction (c) Observation (d) API
13.	Data Exploration can be done through: (a) Bar Graph (b) Histogram (c) Flowcharts (d) All of these
14.	State True / False: Deep Learning is not a part of Rule Based AI model.
15.	The AI System development takes place in the _____ stage of AI Project Cycle.
16.	A System surveillance wherein we categorize whether the system's current state can be marked as "Protected," "Threat" or "Vulnerable" is an example of: a. Classification b. Clustering c. Regression d. Dimensionality Reduction
17.	Which of the following is a problem of Learning based AI approach? (a) Adjusting (b) Limited data (c) Slower Outcome (d) Inaccurate
18.	Identify the data modelling technique.  a)Regression b) Classification c) Clustering d) Dimensionality reduction
	Q19 and 20 are ASSERTION AND REASONING based questions. Mark the correct choice as (a) Both A and R are true and R is the correct explanation for A (b) Both A and R are true and R is not the correct explanation for A (c) A is True but R is False (d) A is false but R is True
19.	Assertion: Rule based AI model is a static model. Reasoning: Rule based model can evolve over changing data set.
20.	Assertion: Dimension Reduction is used in higher dimension problems. Reasoning: Reducing dimension of a problem causes huge data loss.

CH 2 : DATA LITERACY

4.	**Data security is the practice of protecting digital information from:** a) unauthorized access b) corruption c) theft d)all of the above
5.	**What is not a good practice for cyber security?** a) Activate Two Factor Authentication b) Sending pictures to strangers or post them on social media. c)Download software from trusted source d)prioritize websites with https:// for secure logins
6.	**The framework which provides guidance on using data efficiently and with all levels of awareness.** Data security framework Data literacy framework Data Privacy framework Data acquisition framework
7.	**Height, weight, temperature, voltage are examples of :** Discrete data Continuous data None Both
8.	**Which domain makes the use of Numeric data like tables, excel sheets etc.** a) NLP b) Computer Vision c) Data Science d)All
9.	**Adding more data to the existing data by slight change of existing data is called as:** a) Data discovery b) Data Augmentation c) Data Generation d)None
10.	**The process of collecting data from websites is called** a) Web screening b) Web scraping c)Web browsing d) Web surfing
11.	**Analyzing data to arrive at meaningful decisions is termed as** a) Data Processing b) Data Literacy

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	c)Data privacy d)Data Interpretation
12.	**Pie charts, Bar graphs, Line graphs are examples of** a) Textual Data Interpretation b) Graphical Data Interpretation c)Tabular Data Interpretation d) None
13.	**What is not the advantage of Data interpretation** a) Informed decision making b) Reduced cost c)Identification of needs d) Record keeping
14.	**Name some graphs which can be used as a tool for Data visualization?**
15.	**Name the missing element?** 
16.	**Measuring temperature is qualitative or quantitative?** 
17.	**Name the following chart prepared using Tableau software?**  a)Bar chart b)Pie chart c)Histogram

	d)Packed Bubble chart
18.	**Out of a) and b) which is considered as accurate data?**  a)  b)
19.	**Quantitative data is numerical in nature. State True or False.**
20.	**Tableau software is tool for** a)Data Acquisition b)Data Exploration c)Data Visualization d)None

1) What is the probability of an impossible event?
   a) 1
   b) 0
   c) Insufficient data
   d) Not defined
   Ans: b) 0
2) What does probability mean?
   a) The total number of possible outcomes in an event
   b) The ratio of favourable outcomes to all outcomes
   c) The chance of an event happening
   d) How certain an event will occur
   Ans. b)
3) What is the probability of getting an even number when a dice is thrown?
   a) 1/6
   b) ½
   c) 1/3
   d) ¼

Ans: b) ½

4) If we throw two dice simultaneously, what would be the probability that we get a 10 or 11?
   a) 5/36
   b) 5/12
   c) 1/7
   d) 1/3
   Ans: a. 5/36
5) If P (E) = 0.30, then the probability of event E not occurring will be
   a) 0.30
   b) 0.70

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c) 0.50
d) 0.60

Ans: 6.

6) A batsman hits boundary for 5 times out of 40 balls. Find out the probability that he did not hit the boundaries.
   a) 1/5
   b) 7/8
   c) 2/5
   d) 1/8

   Ans: b. 7/8

7) Find the median of data: 155,160,145,149,150,147,152,144,148:
   a) 149
   b) 150
   c) 147
   d) 144

   Ans: a. 149

8) 8. Which two are examples of descriptive statistics?
   a) median and correlation
   b) mean and standard deviation
   c) mode and regression analysis
   d) variance and hypothesis testing

   Ans: b.

9) Solve for x in the equation 3x+5=20
   a) 3
   b) 4
   c) 5
   d) 6

   Ans: c. 5

10) What is the probability of getting a king or ace from the deck of 52 cards?
   a) 1/26
   b) 2/13
   c) 3/26
   d) 1/52

   Ans: b. 2/13

11) Find the mode of the call received on 7 consecutive day 11,13,13,17,19,23,25
   a) 11

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b) 13
c) 17
d) 23

Ans: b. 13

12) The most frequently occurring value in a data set is called the:
a) Mean
b) Median
c) Mode
d) Range

Ans: c. Mode

13) Simplify the expression $4(x-2)$.
a) $4x - 2$
b) $4x - 8$
c) $x - 8$
d) $4x + 8$

Ans: B.

14) A coin is tossed once. What is the probability of getting heads?
a) 0.0
b) 0.25
c) 0.5
d) 1.0

Ans: c. 0.5

15) In a class of 30 students, 18 are girls. What is the probability of selecting a girl?
a) 0.50
b) 0.60
c) 0.40
d) 0.33

Ans: B. 0.6

16) What is the probability of rolling an even number on a six-sided die?
a) 0.16
b) 0.33
c) 0.50
d) 0.66

Ans: c. 0.5

17) What is the mean of the data set {3, 6, 9, 12, 15, 18}?
a) 10

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b) 11
c) 10.5
d) 11.5

Ans: C. 10.5

18) A bag contains 7 black, 2 white, and 6 green balls. What is the probability of drawing a green ball?

a) 0.20
b) 0.30
c) 0.40
d) 0.50

Ans: C. 0.40

19) In a class of 25 students, 10 students wear glasses. What is the probability that a randomly selected student wears glass?

a) 0.20
b) 0.30
c) 0.40
d) 0.50

Ans: C. 0.40

20) What is the range of the data set {16, 20, 24, 28, 32}?

a) 10
b) 12
c) 14
d) 16

Ans: D. 16

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Page

HOLIDAY HOMEWORK

1. How I Taught My Grandmother to read.
   ↳ Page 13 to 19.
2. The Pot Maker
   ↳ Page - 45 to 48
3. Bharat our land
   ↳ Pg. :- 27 to 31
4. Gifts of Grace
   ↳ Page :- 63 to 66
5. Winds of Change
   ↳ Page :- 76 to 79
6. Vitamin - M
   ↳ Pg :- 111 to 116
10. I cannot Remember my mother.
    ↳ Pg :- 130 to 132

Writting section
↳ One diary writting
↳ Notice

PHYSICS PRACTICE QUESTIONS

CLASS IX

PART A — MCQs

1. A student walks 40 m towards the east and then 40 m towards the west. Which statement is correct?

(a) Distance = 0, displacement = 80 m
(b) Distance = 80 m, displacement = 0
(c) Distance = 40 m, displacement = 40 m
(d) Distance = 80 m, displacement = 80 m

2. Which of the following quantities requires both magnitude and direction for its complete description?

(a) Distance
(b) Speed
(c) Mass
(d) Velocity

3. A car moving along a straight road covers equal distances in equal intervals of time. Its motion is:

(a) Accelerated
(b) Uniform
(c) Circular
(d) Random

4. Which of the following can have a negative value?

(a) Distance
(b) Speed
(c) Displacement
(d) Mass

5. A body is moving with constant velocity. Which of the following must be zero?

(a) Distance
(b) Speed
(c) Acceleration
(d) Displacement

6. The slope of a velocity-time graph represents:

(a) Distance
(b) Displacement
(c) Acceleration
(d) Momentum

7. The area under a velocity-time graph represents:

(a) Acceleration
(b) Displacement
(c) Force
(d) Speed

8. A body starts from rest. Its initial velocity is:

(a) 1 m/s
(b) 0 m/s
(c) 9.8 m/s
(d) Cannot be determined

9. A passenger falls forward when a moving bus suddenly stops. This is mainly due to:

(a) Friction
(b) Inertia of motion
(c) Inertia of rest
(d) Gravitation

10. A force of 1 N acting on a body of mass 1 kg produces an acceleration of:

(a) 1 m/s
(b) 1 m/s^2
(c) 1 kg m/s
(d) 1 kg/m^2

PART B — VERY SHORT ANSWER QUESTIONS

11. Define uniform motion and give one example from everyday life.

12. What is meant by non-uniform motion? Give one example.

13. Distinguish between distance and displacement on the basis of: (1) Nature of quantity (2) Possible value.

14. A person completes one complete round of a circular track and returns to the starting point. What can you say about his distance and displacement?

15. What is acceleration? Write its SI unit.

16. A vehicle is moving with constant speed around a circular track. Is its velocity constant? Give a reason.

17. Can an object have acceleration even when its speed remains constant? Explain with an example.

18. What is meant by retardation? How is it related to acceleration?

19. State Newton's First Law of Motion in your own words.

20. Why does a person standing in a bus tend to fall backward when the bus suddenly starts moving?

PART C — CONCEPTUAL / REASONING QUESTIONS

21. A boy throws a ball vertically upwards. At the highest point of its motion, its velocity becomes zero. Is its acceleration also zero? Explain.

22. Two students start from the same point. One walks 100 m east and the other walks 100 m west. Compare their distances and displacements.

23. A cyclist increases his speed from 5 m/s to 15 m/s. Explain what this tells us about his motion. What physical quantity describes the rate of change of his velocity?

24. Why are passengers advised to wear seat belts while travelling in a car? Explain using the concept of inertia.

25. A goalkeeper moves his hands backward while catching a fast-moving football. Explain why this reduces the force experienced by his hands.

26. When a carpet is beaten with a stick, dust particles come out of it. Explain the phenomenon involved.

27. A coin is placed on a card lying over a glass. When the card is given a sharp horizontal flick, the coin falls into the glass. Explain why.

28. Why does a person experience difficulty in maintaining balance when a running bus takes a sudden turn?

29. A loaded truck and an empty truck are travelling at the same velocity. Which one has greater momentum? Explain your answer.

30. A force acts on two objects of different masses. If the same force is applied to both, which object will acquire greater acceleration? Give a reason.

PART D — NUMERICAL QUESTIONS: MOTION

31. A train travels 360 km in 6 hours. Calculate its average speed in: (1) km/h (2) m/s.

32. A runner covers 200 m in 25 seconds. Calculate his average speed.

33. A scooter moving at 8 m/s accelerates uniformly at 2 m/s^2 for 6 seconds. Find its final velocity.

34. A cyclist moving at 12 m/s applies brakes and comes to rest in 4 seconds. Calculate the acceleration of the cyclist.

35. A car starts with an initial velocity of 5 m/s and accelerates uniformly at 3 m/s^2 for 4 seconds. Calculate the distance travelled during this time.

36. A bus travelling at 18 m/s slows down uniformly at 3 m/s^2. How much time will it take to come to rest?

37. An object starts from rest and moves with an acceleration of 4 m/s^2. Calculate: (1) Its velocity after 5 s (2) The distance travelled in 5 s.

38. A motorcycle increases its velocity from 10 m/s to 30 m/s while travelling 200 m. Assuming uniform acceleration, calculate its acceleration.

39. A car travelling at 20 m/s is brought to rest uniformly in 10 seconds. Calculate: (1) Acceleration (2) Distance travelled before stopping.

40. A body moving with a velocity of 6 m/s accelerates at 2 m/s^2 for 7 seconds. Determine its final velocity and distance travelled.

PART E — FORCE AND NEWTON'S LAWS

41. A net force of 24 N acts on an object of mass 6 kg. Calculate the acceleration produced.

42. An object of mass 8 kg accelerates at 2.5 m/s^2. Calculate the net force acting on it.

43. A force of 50 N produces an acceleration of 5 m/s^2 in an object. Calculate the mass of the object.

44. Two forces of 15 N and 10 N act on an object in opposite directions. Determine the magnitude and direction of the resultant force.

45. Two forces of 12 N and 8 N act on a body in the same direction. What is the resultant force?

46. A 10 kg box is pushed with a force of 30 N. If a frictional force of 5 N acts opposite to its motion, calculate: (1) Net force (2) Acceleration of the box.

PART F — HIGHER-ORDER / EXAM-STYLE QUESTIONS

47. A student claims: “If the distance travelled by an object is zero, its displacement must also be zero.” Is the statement correct? Explain with suitable reasoning.

48. A car travels the first half of a journey at 20 m/s and the second half at 30 m/s. Explain why its average speed cannot simply be obtained by adding the two speeds and dividing by 2. What additional information is required to calculate the exact average speed?

49. A ball of mass 2 kg is moving with a velocity of 6 m/s. A force acts on it and changes its velocity to 10 m/s in the same direction in 2 seconds. Calculate: (a) Initial momentum (b) Final momentum (c) Change in momentum (d) Acceleration (e) Force acting on the ball.

50. A passenger standing in a bus is holding a luggage bag. The bus suddenly accelerates forward, and the passenger feels the bag jerk backward. When the bus suddenly brakes, the bag moves forward. Answer: (a) Name the physical phenomenon responsible. (b) Explain why the bag moves backward when the bus accelerates. (c) Explain why it moves forward when the bus brakes. (d) Which law of motion explains these observations?