



K. K. Wagh Institute of Engineering Education & Research, Nashik
(An Autonomous Institute From A.Y. 2022-23)

	InSem Examination-IWinter 2023		
	Exam Seat No.:		
	Academic Year:2023-2024	Semester:III	
	Name of Programme:MCA	Pattern:2022	
	Name of Course:Data Science	Course Code:MCA223001	
	Max. Marks:30	Duration:1	

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains 02 page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question

Question No. 1 Attempt following Question

- a)
- a) Illustrate following terms with suitable examples.
- i) Sample Space ii) Events (8) CO2
- iii) Mutually Exclusive Events iv) Independent Events

OR

- b) Illustrate the similarities and differences between Data Science and Big Data (8) CO2
- c)
- Calculate a probability to each outcome in the sample space for the experiment that consists of tossing a single fair die. Find the probabilities of the events
- A die is called balanced or fair if each side is equally likely to land on top. (7) CO2
- E : an even number is rolled and
- T : a number greater than two is rolled.

OR

- d) Show the working of the Multinomial Theorem with suitable example. (7) CO2

Question No. 2 Attempt following Question

- a) Analyze the data and outline the solutions for following problems:
- i) Find the Variance and Standard Deviation of the Following Numbers: 3, 5, 6, 10, 9, 10, 1, 3 (8) CO5
- ii) If the arithmetic means of 14 observations 26, 12, 14, 15, x, 17, 9, 11, 18, 16, 28, 20, 22, 8 is 17. Find the missing observation.

OR

- b) Analyze the following data and outline the solutions for mean, median, mode and range for the given data: 90, 94, 53, 68, 79, 94, 53, 65, 87, 90, 70, 69, 65, 89, 85, 53, 47, 61, 27, 80 (8) CO5
- c) Illustrate following
- i) Standard Deviation
- ii) Importance of Standard Deviation (7) CO5
- iii) Applications of Standard Deviation

OR

- d) Illustrate the coefficients of Variation with suitable example. (7) CO5