

Syllabus for MSc Big Data Analytics Entrance Exam

The entrance examination will primarily check basic aptitude in mathematics and statistics, understanding of algorithms and programming, and the ability to logically interpret data. Entrance test will consist of multiple choice questions from the following four sections.

Section I - Logical Reasoning and Verbal Ability.

- Analogy
- Sequence
- Blood Relations
- Predicate and Propositional Logic
- Puzzle
- Coding-Decoding
- Cause-Effect
- Artificial Language
- Deductive Reasoning
- Seating Arrangements

Section II: Mathematics

- Sequences and Series Of Real Numbers
- Linear Algebra
- Vectors and Matrices
- Numerical Methods
- Set Theory
- Relations
- Logical Compound Statements
- Permutations and Combinations
- Differentiation

Section III: Statistics

- Elementary Statistics
- Measures Of Central Tendency
- Correlation
- Regression
- Sampling Theory
- Probability Distributions
- Data Visualization
- Testing Of Hypothesis

Section IV: Computer Science

- Data Structures
- Basics Of Programming Concepts And Algorithms

- Data Communication And Networking
- Database Management System
- Software Engineering
- Information Technology

Following is the weightage per subject:

Subject	Weightage in %
Logical Reasoning	20
Mathematics	25
Statistics	25
Computer Science	30

MSc Big Data Analytics Entrance Exam
Sample paper

Section I - Logical Reasoning and Verbal Ability.

- 1) PETAL: FLOWER
 - A) Pen: Paper
 - B) Engine: Car
 - C) Cat: Dog
 - D) Ball: Game

- 2) I. All the colleges in the city had to keep closed for three days a week.
II. Many students have left the local colleges.
 - A) Statement II is the cause and statement I is its effect
 - B) Statement I is the cause and statement II is its effect
 - C) Both the statements are effects of independent causes
 - D) Both the statements are independent causes

- 3) Pointing to a photograph, a man said, "I have no brother, and that man's father is my father's son." Whose photograph was it?
 - A) His son
 - B) His own
 - C) His father
 - D) His nephew

4) Peter is in the East of Tom and Tom is in the North of John. Mike is in the South of John then in which direction of Peter is Mike?

- A) South-East
- B) South-West
- C) South
- D) North-East

5) What is Geeta's rank in the class?

I. There are 30 students in the class.

II. There are 10 students who scored less than Geeta.

- A) Statement I alone is sufficient, but statement II alone is not sufficient
- B) Statement II alone is sufficient, but statement I alone is not sufficient
- C) Either I or II is sufficient
- D) Both I and II are needed

6) If in a certain language, NOIDA is coded as OPJEB, how is DELHI coded in that language?

- A) CDKGH
- B) EFMIJ
- C) FGNJK
- D) IHLED

7) Essential part of Book is

- A) Education
- B) Pictures
- C) Pages
- D) Knowledge

8) I. Pooja is older than Mukesh.

II. Suresh is older than Pooja.

III. Mukesh is older than Suresh.

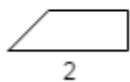
If the first two statements are true, the third statement is

- A) False
- B) True
- C) Uncertain
- D) Can't say

9) Select three figures out of the following five figures which when fitted into each other would form a square.



1



2



3



4



5

- A) 1, 2, 4

- B) 1, 2, 5
- C) 5, 3, 1
- D) 2, 3, 4

- 10) Which number should come next in the series, 48, 24, 12,?
- A) 8
 - B) 6
 - C) 4
 - D) 2

Section II: Mathematics

- 1) A shopkeeper sold an article for Rs. 2500. If the cost price of the article is 2000, find the profit percent.
- A) 23%
 - B) 25%**
 - C) 27%
 - D) 29%
- 2) A running man crosses a bridge of length 500 meters in 4 minutes. At what speed he is running?
- A) 8.5 km/s
 - B) 7.5 km/s**
 - C) 9.5 km/s
 - D) 6.5 km/s
- 3) A: B: C is in the ratio of 3: 2: 5. How much money will C get out of Rs 1260?
- A) 252
 - B) 125
 - C) 503
 - D) 630**
- 4) The union of the sets {1, 2, 5} and {1, 2, 6} is the set _____
- A) {1, 2, 6, 1}
 - B) {1, 2, 5, 6}
 - C) {1, 2, 1, 2}
 - D) {1, 5, 6, 3}
- 5) $p(n,r) =$ _____
- A) $n!/(n-r)!$
 - B) $r!/(r-n)!$
 - C) $p!/(n-r)!$
 - D) $p!/(p-n)!$
- 6) Which of the following statement is correct?
- A) $p \vee q \equiv q \vee p$

- B) $\neg(p \wedge q) \equiv \neg p \vee \neg q$
 C) $(p \vee q) \vee r \equiv p \vee (q \vee r)$
 D) All of mentioned
- 7) In how many ways can a president and vice president be chosen from a set of 30 candidates?
 A) 820
 B) 830
 C) 850
 D) 870
- 8) If ${}^{16}P_{r-1} : {}^{15}P_{r-1} = 16 : 7$ then find r.
 A) 10
 B) 12
 C) 7
 D) 8
- 9) Find the number of ways of arranging the letters of the words DANGER, so that no vowel occupies odd place.
 A) 36
 B) 48
 C) 144
 D) 96
- 10) The set O of odd positive integers less than 10 can be expressed by _____
 A) {1, 2, 3}
 B) {1, 3, 5, 7, 9}
 C) {1, 2, 5, 9}
 D) {1, 5, 7, 9, 11}

Section III: Statistics

- 1) Any measure indicating the centre of a set of data, arranged in an increasing or decreasing order of magnitude, is called a measure of:
 A) Skewness
 B) Symmetry
 C) Central tendency
 D) Dispersion
- 2) Ten families have an average of 2 boys. How many boys do they have together?
 A) 2
 B) 10
 C) 12
 D) 20
- 3) If the arithmetic mean of the two numbers X1 and X2 is 5 if X1=3, then X2 is:
 A) 3
 B) 5
 C) 7
 D) 10

- 4) Which of the following statements is always correct?
 - A) Mean = Median = Mode
 - B) Mean = Median = Mode
 - C) Median = $Q_2 = D_5 = P_{50}$
 - D) Mode = $2\text{Median} - 3\text{Mean}$
- 5) The ratio among the number of items and the sum of reciprocals of items is called:
 - A) Arithmetic mean
 - B) Geometric mean
 - C) Harmonic mean
 - D) Mode
- 6) The slope of the regression line of Y on X is also called the
 - A) Correlation coefficient of X on Y
 - B) Correlation coefficient of Y on X
 - C) Regression coefficient of X on Y
 - D) Regression coefficient of Y on X
- 7) A relationship where the flow of the data points is best represented by a curve is called:
 - A) Linear relationship
 - B) Nonlinear relationship
 - C) Linear positive
 - D) Linear negative
- 8) What does a simple linear regression analysis examine?
 - A) The relationship between only two variables
 - B) The relationship between one dependent and one independent variable
 - C) The relationship between many variables
 - D) The relationship between two dependent and one independent variable
- 9) Which Test is Appropriate? A stadium manager is interested in whether the fans that buy tickets are demographically the same as the general population of the city. Currently 42% are Caucasian, 35% are Hispanic, 12% are African American, 8% are Asian, and the rest are defined as other.
 - A) Chi-square Goodness of Fit Test
 - B) Chi-Square Test for Homogeneity
 - C) Chi-Square Test for Independence/Association
 - D) Not a Chi-square test
- 10) The null hypothesis in the chi-square test states that ____
 - A) The rows and columns in the table are associated
 - B) The rows and columns in the table are not associated
 - C) all attributes are connected
 - D) all columns are connected

Section IV: Computer Science

- 1) Identify the device through which data and instructions are entered into a computer
 - A) Software
 - B) Output device

- C) Input device
 - D) Memory
- 2) Which one of these stores more data than a DVD ?
- A) CD Rom
 - B) Floppy
 - C) Blue Ray Disk
 - D) Red Ray Disk
- 3) Which of the following mechanisms is/are provided by Object Oriented Language to implement Object Oriented Model?
- A) Encapsulation
 - B) Inheritance
 - C) Polymorphism
 - D) All of the mentioned
- 4) A process is a _____.
- A) single thread of execution.
 - B) program in the execution
 - C) program in the memory
 - D) task
- 5) What is the decimal equivalent of the binary number 10111?
- A) 21
 - B) 39
 - C) 42
 - D) 23
- 6) Which of the following is the smallest visual element on a video monitor?
- A) Character
 - B) Pixel
 - C) Byte
 - D) Bit
- 7) Which of the following provides the ability to query information from the database and insert tuples into, delete tuples from, and modify tuples in the database?
- A) DML(Data Manipulation Language)
 - B) DDL(Data Definition Language)
 - C) Query
 - D) Relational Schema
- 8) Which one of the following groups contains graphical file extensions?
- A) JPG, CPX, GCM
 - B) GIF, TCE, WMF
 - C) TCP, JPG, BMP

D) JPG, GIF, BMP

9) Which of the following statement is correct regarding a template prepared by a word processing package?

A) Any document can be saved as a template.

B) Default template is used when you create a new file.

C) Many templates contain text that gives one advice on how to use the template.

D) Default settings are reflected by the normal document template and cannot be overwritten.

10) Which of the following statement is correct about the URL?

A) URL is a software that connects to the internet

B) URL is the address of the web page

C) URL is the domain name

D) All of the these
