

# Sample Entry Test for MS (CS) Degree Program

## Verbal Ability (20 Marks)

Complete the following sentences by selecting the most appropriate option from the given lettered choices (A, B, C, D) below each question.

1. She has been living here \_\_\_\_\_ 2010.  
A) For  
B) Since  
C) From  
D) By  
Answer: B
2. The train is arriving \_\_\_\_\_ an hour.  
A) For  
B) On  
C) In  
D) At  
Answer: C
3. They will meet you \_\_\_\_\_ Monday.  
A) In  
B) On  
C) At  
D) By  
Answer: B
4. Ali was born \_\_\_\_\_ a famous poet.  
A) To  
B) Of  
C) In  
D) From  
Answer: A
5. She apologized \_\_\_\_\_ the delay.  
A) For  
B) From  
C) Of  
D) To  
Answer: A
6. The \_\_\_\_\_ child was afraid of the dark.  
A) Brave  
B) Shy  
C) Outgoing  
D) Confident  
Answer: B
7. I haven't eaten anything \_\_\_\_\_ morning.  
A) For  
B) Since

- C) In
- D) From

Answer: B

8. The \_\_\_\_\_ girl helped the elderly lady.

- A) Rude
- B) Impatient
- C) Kind
- D) Lazy

Answer: C

9. She is interested \_\_\_\_\_ learning French.

- A) On
- B) In
- C) At
- D) By

Answer: B

10. The book was written \_\_\_\_\_ a famous author.

- A) In
- B) At
- C) By
- D) With

Answer: C

In the following question, select the pair of words given against (A, B, C, D), which has the same relation as between the first two original lettered words.

11. TEACHER: EDUCATE

- A) Doctor: Operate
- B) Farmer: Harvest
- C) Lawyer: Defend
- D) Artist: Paint

Answer: A

12. PAINTER: CANVAS

- A) Carpenter: Wood
- B) Sculptor: Stone
- C) Writer: Paper
- D) Chef: Kitchen

Answer: C

13. DOCTOR: STETHOSCOPE

- A) Chef: Knife
- B) Engineer: Calculator
- C) Writer: Pen
- D) Musician: Instrument

Answer: D

14. LIBRARY: BOOKS

- A) Farm: Crops
- B) School: Students
- C) Hospital: Patients
- D) Store: Goods

Answer: A

15. CARPENTER: HAMMER

- A) Writer: Typewriter
- B) Artist: Brush
- C) Musician: Piano
- D) Doctor: Scalpel

Answer: B

16. PILOT: AIRPLANE

- A) Driver: Car
- B) Captain: Ship
- C) Conductor: Train
- D) Cyclist: Bicycle

Answer: B

17. AUTHOR: NOVEL

- A) Composer: Symphony
- B) Baker: Bread
- C) Tailor: Clothes
- D) Painter: Portrait

Answer: A

18. FARMER: PLOW

- A) Mechanic: Wrench
- B) Soldier: Rifle
- C) Chef: Oven
- D) Barber: Scissors

Answer: A

19. BAKER: OVEN

- A) Teacher: Blackboard
- B) Doctor: Clinic
- C) Gardener: Shovel
- D) Driver: Garage

Answer: C

20. ARCHITECT: BLUEPRINT

- A) Actor: Script
- B) Teacher: Curriculum
- C) Programmer: Code

D) Scientist: Hypothesis

Answer: C

**Quantitative Section (30 Marks)**

21. If 70% of a number is 280, what is 40% of the number?

- a) 120
- b) 160
- c) 200
- d) 240

Answer: b) 160

32. A shopkeeper buys a product for Rs. 800 and sells it for Rs. 1000. What is his profit percentage?

- a) 20%
- b) 25%
- c) 30%
- d) 35%

Answer: a) 20%

33. Solve for x:  $5x - 3 = 2x + 9$

- a) 2
- b) 3
- c) 4
- d) 5

Answer: c) 4

34. Simplify:  $(x - 3)(x + 5)$

- a)  $x^2 + 2x - 15$
- b)  $x^2 - 2x - 15$
- c)  $x^2 + 8x - 15$
- d)  $x^2 - 8x - 15$

Answer: a)  $x^2 + 2x - 15$

35. Find the value of x if  $x^2 - 49 = 0$

- a) 7
- b) -7

c)  $\pm 7$

d) No solution

Answer: c)  $\pm 7$

36. A man can do a piece of work in 12 days and his wife can do the same work in 15 days. In how many days can they complete the work together?

a) 6 and  $\frac{2}{3}$  days

b) 7 and  $\frac{1}{5}$  days

c) 8 and  $\frac{1}{3}$  days

d) 9 and  $\frac{1}{2}$  days

Answer: a) 6 and  $\frac{2}{3}$  days

37. A train 180 meters long crosses a pole in 12 seconds. What is the speed of the train in km/h?

a) 54 km/h

b) 60 km/h

c) 65 km/h

d) 72 km/h

Answer: a) 54 km/h

38. The average age of a group of 20 people is 25 years. If 5 people with an average age of 30 years join the group, what is the new average age?

a) 26 years

b) 27 years

c) 28 years

d) 29 years

Answer: b) 27 years

39. A sum of money becomes three times itself in 8 years at simple interest. What is the rate of interest?

a) 25%

b) 30%

c) 37.5%

d) 40%

Answer: c) 37.5%

40. A boat can travel 30 km downstream in 2 hours and 30 km upstream in 3 hours. Find the speed of the boat in still water.

- a) 7.5 km/h
- b) 8 km/h
- c) 8.5 km/h
- d) 9 km/h

Answer: a) 7.5 km/h

41. If 25% of a number is 60, what is the number?

- a) 150
- b) 200
- c) 240
- d) 250

Answer: c) 240

42. A shopkeeper buys a product for Rs. 500 and sells it at a loss of 20%. What is the selling price?

- a) Rs. 400
- b) Rs. 450
- c) Rs. 550
- d) Rs. 600

Answer: a) Rs. 400

43. Solve for x:  $7x + 4 = 3x - 8$

- a) -3
- b) -2
- c) -1
- d) 0

Answer: a) -3

44. Simplify:  $(2x + 5)(3x - 2)$

- a)  $6x^2 + 11x - 10$
- b)  $6x^2 - 11x - 10$
- c)  $6x^2 + 19x - 10$
- d)  $6x^2 - 19x - 10$

Answer: a)  $6x^2 + 11x - 10$

45. Factorize:  $x^2 - 6x + 8$

a)  $(x - 2)(x - 4)$

b)  $(x + 2)(x + 4)$

c)  $(x - 2)(x + 4)$

d)  $(x + 2)(x - 4)$

Answer: a)  $(x - 2)(x - 4)$

46. A man can do a piece of work in 8 days and another man can do the same work in 12 days. In how many days can they complete the work together?

a) 4 and  $\frac{4}{5}$  days

b) 5 and  $\frac{1}{3}$  days

c) 6 days

d) 6 and  $\frac{2}{3}$  days

Answer: b) 5 and  $\frac{1}{3}$  days

47. A train 240 meters long crosses a platform 300 meters long in 25 seconds. What is the speed of the train in km/h?

a) 64.8 km/h

b) 72 km/h

c) 79.2 km/h

d) 86.4 km/h

Answer: a) 64.8 km/h

48. The average age of 35 students in a class is 16 years. If the teacher's age is included, the average age becomes 17 years. What is the age of the teacher?

a) 42 years

b) 45 years

c) 48 years

d) 51 years

Answer: d) 51 years

49. A sum of money becomes four times itself in 6 years at simple interest. What is the rate of interest?

- a) 50%
- b) 60%
- c) 66.67%
- d) 75%

Answer: c) 66.67%

50. A boat can travel 40 km downstream in 4 hours and 40 km upstream in 5 hours. Find the speed of the boat in still water.

- a) 7 km/h
- b) 7.5 km/h
- c) 8 km/h
- d) 8.5 km/h

Answer: a) 7 km/h

### Analytical Reasoning (20 Marks)

Questions 51-52: 7 persons live in a street, having houses in a line. A lives in the house at one corner. C is between E and G. There is 1 house between D and F. Moreover, F is a neighbor of G. There are two houses between A and G.

51. Who cannot live in the other corner of the street?

- A) B
- B) C
- C) D
- D) E

Answer: B

52. Who lives between B and G?

- A) D
- B) E
- C) F
- D) C

Answer: B

Question 53: The Head of clinic workers is forming a five-person team to distribute leaflets to a nearby colony. The team must contain two persons who can distribute leaflets, one speaker who can address the people who stop them while distributing leaflets, and two persons as security guards. A, B, and C are possible workers who can distribute leaflets. C, D, and E are possible



workers who can be speakers; F, G, and H are possible security guards. A and C prefer to work with each other on the same team. E prefers to work only if F works. Which is a possible team if all preferences are respected?

- A) A B C D E
- B) A C D E F
- C) A B C F G
- D) A C E G H

Answer: C

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Questions 54-56: Three adults (R, S, and V) will be traveling in a van with five children (F, H, J, L, and M). The van has one driver's seat and one passenger seat in the front. It has two benches behind the front seats, one bench behind the other. Each bench has room for exactly three people. Everyone must be on a seat or on a bench, and seating is subject to the following restrictions: An adult must sit on each bench. Either R or S must sit in the driver's seat. J must sit immediately beside M.

54. Which of the following can sit in the front passenger seat?

- A) J
- B) L
- C) R
- D) S

Answer: D

55. Which of the following groups of three can sit together on a bench?

- A) F, J, and M
- B) F, J, and V
- C) F, S, and V
- D) H, L, and S

Answer: A

56. If F sits immediately beside V, which of the following CANNOT be true?

- A) H sits on the same bench as R
- B) L sits immediately beside V
- C) H sits in the front passenger seat
- D) F sits on the same bench as H

Answer: C

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Questions 57-60: Eight varsity baseball players (G, H, J, K, L, M, N, O) are to be honored at a special ceremony. Three of these players (H, M, O) are also varsity football players. Two of them (K, and N) are also basketball players on the varsity team. In arranging the seats, it will be decided that no athlete in two sports should be seated next to another two-sport athlete.

57. Which of the following combinations is possible in order to have an arrangement of seat assignments as planned?

- A) H, G, K, L
- B) H, K, J, L
- C) J, K, M, N
- D) J, L, H, K
- E) L, K, N, J

Answer: A

58. Which of the following cannot sit next to M?

- A) G
- B) J
- C) G and J
- D) K
- E) L

Answer: D

59. Before all athletes are seated, there are two vacant seats on either side of N. Which two athletes may occupy these seats?

- A) G and K
- B) G and L
- C) J and H
- D) L and O
- E) M and J

Answer: B

60. To have the proper seating arrangement, K should sit between:

- A) G and H
- B) J and M
- C) L and N
- D) J and N
- E) J and L

Answer: C

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Question 61: Wall chalking on public property should be outlawed. Radicals have no right to use public property when promoting their unpleasant views. The argument above is based on the idea:

- A) The general public has an interest in the free exchange of different political views
- B) Law is equal to all
- C) Legal constraints should be equal for all
- D) Every person who uses wall chalking for the wrongful promotion of ideas is a radical.

Answer: D

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Question 62: What comes next in the following series? 1, 4, 7, 10, \_\_\_\_\_?

- A) 13
- B) 15
- C) 17
- D) 27

Answer: A

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Question 63: Samra is older than Ali. Waqar is older than Samra. Ali is older than Waqar. If the first two statements are true, the third statement is:

- A) True
- B) False
- C) Uncertain
- D) None of these

Answer: B

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Question 64: At a political rally in Ayub stadium, candidate named Seema exclaimed: "Nearly every resident of the constituency supports me. It looks like I am going to be elected". Which of the following, if true, best supports the above conclusion?

- A) Seema's opponents also appeared at the rally
- B) Seema was supported by almost all the residents of her constituency
- C) Seema was never defeated in an election
- D) None of the above

Answer: B

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Questions 65-66: Five racing drivers, A, B, C, D, and E, enter a contest that consists of 6 races. The results of all six races are listed below:

B always finishes ahead of C. A finishes either first or last. E finishes either first or last. There are no ties in any race. Every driver finishes each race.

In each race, two points are awarded for a fifth-place finish, four points for fourth, six points for third, eight points for second, and ten points for first.

65. If E finishes two places ahead of C in the first race, all of the following will be true EXCEPT:

- A) B finishes ahead of D
- B) C finishes two places ahead of A
- C) D finishes fourth
- D) C finishes ahead of B

Answer: D

66. If A finishes first only once, and D finishes second exactly twice, the total number of points that D can earn are:

- A) 32 Points
- B) 38 Points
- C) 16 Points
- D) 44 Points

Answer: A

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Question 67: In a family, there are a husband, wife, two sons, and two daughters. All the ladies were invited to a dinner. Both sons went out to play. The husband did not return from the office. Who was at home?

- A) Only wife was at home
- B) All ladies were at home
- C) Only sons were at home
- D) Nobody was at home

Answer: D

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Question 68: Traveling by car is safer than traveling by plane. Eighty percent of plane accidents result in the death of all passengers, while only one percent of car accidents result in death. Which of the following, if true, would most seriously weaken the argument above?

- A) The number of car accidents is several thousand times higher than the number of plane accidents
- B) Planes are inspected by experienced engineers before flying
- C) Pilots are more trained than car drivers
- D) Cars carry fewer passengers

Answer: A

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Question 69: The school principal has received complaints from parents about bullying in the school yard during recess. He wants to investigate and end this situation as soon as possible, so he has asked the recess monitor to watch closely. Which situation should the recess monitor report to the principal?

- A) Four girls are surrounding another girl and seem to have possession of her backpack
- B) Two boys are playing a one-on-one game of basketball and are arguing over the last basket scored
- C) Three boys are huddled over a handheld video game, which isn't supposed to be on school grounds
- D) A girl is sitting glumly on a bench reading a book and not interacting with her peers

Answer: A

Question 70: What comes next in the following series? 5, 2, 10, 4, 15, 7, 20, \_\_\_\_\_?

- A) 10              B) 15              C) 11              D) 25

Answer: C

### **Computer Science (30 Marks)**

71. What is the time complexity of accessing an element in an array?

- A)  $O(1)$
- B)  $O(\log n)$
- C)  $O(n)$
- D)  $O(n^2)$

Answer: A

72. Which data structure uses LIFO (Last In First Out) principle?

- A) Queue
- B) Stack
- C) Linked List
- D) Array

Answer: B

73. In a binary search tree (BST), the left child of a node contains a value less than the node's value. What is the time complexity of searching for an element in a balanced BST?

- A)  $O(1)$
- B)  $O(\log n)$
- C)  $O(n)$
- D)  $O(n \log n)$

Answer: B

74. What is the worst-case time complexity of insertion in a hash table with chaining?

- A)  $O(1)$
- B)  $O(\log n)$
- C)  $O(n)$
- D)  $O(n^2)$

Answer: C

75. Which of the following sorting algorithms has the best average-case time complexity?

- A) Bubble Sort
- B) Merge Sort
- C) Quick Sort
- D) Insertion Sort

Answer: B

76. What is the primary purpose of an operating system?

- A) To manage hardware resources
- B) To run application software
- C) To provide user interfaces
- D) To perform calculations

Answer: A

77. In a multitasking operating system, what does context switching involve?

- A) Switching the focus between different applications
- B) Saving the state of the currently running process and loading the state of the next process
- C) Switching between different user accounts

- D) Changing the hardware configuration

Answer: B

78. Which of the following is NOT a type of operating system scheduling algorithm?

- A) Round Robin
- B) Shortest Job Next
- C) First Come First Served
- D) Longest Job First

Answer: D

79. What is a deadlock in operating systems?

- A) A situation where processes are waiting indefinitely for resources held by each other
- B) A situation where processes are executing indefinitely
- C) A situation where the CPU is idle
- D) A situation where a process is waiting for user input

Answer: A

80. Which of the following is an example of a process synchronization mechanism?

- A) Mutex
- B) Semaphore
- C) Monitor
- D) All of the above

Answer: D

81. Which principle of OOP ensures that the internal representation of an object is hidden from the outside?

- A) Encapsulation
- B) Inheritance
- C) Polymorphism
- D) Abstraction

Answer: A

82. What is the purpose of a constructor in a class?

- A) To initialize objects of the class
- B) To destruct objects of the class
- C) To define the behavior of the class
- D) To create new classes

Answer: A

83. In OOP, what is a class?

- A) A blueprint for creating objects
- B) An instance of an object
- C) A type of method
- D) A variable type

Answer: A

84. What is polymorphism in OOP?

- A) The ability to process objects differently based on their data type or class
- B) The ability to create multiple objects from a single class
- C) The ability to inherit properties from multiple classes
- D) The ability to hide data within an object

Answer: A

85. Which of the following is an example of method overriding?

- A) A subclass providing a specific implementation of a method already defined in its superclass
- B) A subclass inheriting methods from a superclass
- C) A class defining multiple methods with the same name
- D) A class defining methods with different names

Answer: A

86. Which software development model is iterative and allows for changes based on user feedback?

- A) Waterfall Model
- B) Spiral Model
- C) V-Model
- D) Incremental Model

Answer: B

87. What does the term 'requirements gathering' refer to in software engineering?

- A) The process of defining the necessary features and functionalities of a software application
- B) The process of coding the software
- C) The process of testing the software
- D) The process of deploying the software

Answer: A

88. Which of the following is NOT a type of software testing?

- A) Unit Testing
- B) Integration Testing



- C) System Testing
- D) Validation Testing

Answer: D

89. What is the purpose of version control systems in software engineering?
- A) To track changes to code and manage different versions of software
  - B) To manage hardware configurations
  - C) To compile and run code
  - D) To design user interfaces

Answer: A

90. Which principle of software design focuses on making software components reusable?
- A) Coupling
  - B) Cohesion
  - C) Encapsulation
  - D) Abstraction

Answer: B

91. What does SQL stand for?
- A) Structured Query Language
  - B) Structured Quality Language
  - C) Sequential Query Language
  - D) Sequential Quality Language

Answer: A

92. Which of the following is a type of database normalization?
- A) First Normal Form (1NF)
  - B) Second Normal Form (2NF)
  - C) Third Normal Form (3NF)
  - D) All of the above

Answer: D

93. In a relational database, what is a primary key used for?
- A) To uniquely identify each record in a table
  - B) To store large amounts of data
  - C) To enforce referential integrity
  - D) To index data for faster retrieval

Answer: A

94. Which SQL statement is used to remove all records from a table but not the table itself?

- A) DROP
- B) DELETE
- C) TRUNCATE
- D) REMOVE

Answer: C

95. What is an index in a database?

- A) A data structure that improves the speed of data retrieval operations
- B) A table that stores metadata
- C) A column that stores unique values
- D) A type of relationship between tables

Answer: A

96. Which of the following is a type of database relationship?

- A) One-to-One
- B) One-to-Many
- C) Many-to-Many
- D) All of the above

Answer: D

97. What is a foreign key in a database?

- A) A key used to identify a record uniquely in its own table
- B) A key used to establish a link between tables
- C) A key used to encrypt data
- D) A key used to sort records

Answer: B

98. Which of the following operations is used to combine rows from two or more tables based on a related column?

- A) JOIN
- B) UNION
- C) INTERSECT
- D) EXCEPT

Answer: A

99. What is the purpose of a database transaction?

- A) To execute a sequence of operations as a single unit of work
- B) To update a single record
- C) To back up data
- D) To query data

Answer: A

100. What does ACID stand for in the context of database transactions?
- A) Atomicity, Consistency, Isolation, Durability
  - B) Atomicity, Consistency, Integrity, Durability
  - C) Asynchronous, Consistent, Isolation, Durability
  - D) Atomicity, Consistency, Isolation, Density

Answer: A