

## Entry Test Sample for MSCS Program

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### Weightage Distribution:

Section No.	Section Title	Weight
I	English	25%
II	Mathematics	25%
III	Computer Science	50%

### Section No. I - English

#### Syllabus:

1. Analytical Ability
  - a) Logical Reasoning (5%)
  - b) Analytical Reasoning (5%)
  
2. Verbal Ability
  - a) Sentence Completion (Grammar) (5%)
  - b) Analogy (5%)
  - c) Antonyms (5%)

#### *Sample Test Questions*

1. "A meadow in springtime is beautiful, even if no one is there to appreciate it."  
This statement would be a logical opposite to which of the following claims?
  - A. People will see only what they want to see.
  - B. Beauty exists only in the eyes of the beholder.
  - C. Beauty does not depend on seasons.
  - D. The greatest pleasure available to mankind is the contemplation of beauty.
  
2. A map representing countries R, S, W, X, Y and Z is to be drawn. Adjacent countries cannot have the same color in the map. The countries adjacent to each other are as follows:
  - A. Each of R, S, X and Y is adjacent to W.
  - B. X is adjacent to Y.
  - C. Each of R and S is adjacent to Z.

Which of the following is a pair of countries that can be the same color?

- A. R and S                      B. S and W                      C. W and X                      D. X and Y
  
3. Many surveys \_\_\_\_\_ out the idea that effective communication is essential for success and promotion in every field.
  - A. are bearing                      B. should have borne                      C. has borne                      D. have borne

4. IMAGINE : IMAGINATION
- A. Therapy : Thermometer                      C. Oblivion : Obvious  
 B. Bowl : Bowdlerize                              D. Liturgy : Literature
5. Choose the lettered word or phrase that is most nearly opposite in meaning to the word DISINTEGRATE.
- A. Coalesce    B. Pulverize    C. Annihilate    D. Severe    C. Trounce

## Section No. II - Mathematics

### Syllabus:

Each of the following topics contributes 2% to 3% towards the overall 25%.

- Exponents and Roots
- Arithmetic
- Inequalities
- Fractions and Decimals
- Percent's
- Ratios and Proportions
- Polynomials
- Solving Equations and Inequalities
- Lines and Angles, rectangle, Triangles, square, Quadrilateral and other Polygons, Circles
- Solving Equations and Inequalities
- Averages, permutation, Combination, Probability

### *Sample Test Questions*

1.  $\sqrt[3]{27} \times (-2)^3 = ?$   
 A. 24              B. -24              C. 54              D. -6
2. If  $10^x = 100$  then value of x is  
 A. 10              B. 1                  C. 2                  D. 3
3. The simplified form of  $(5^{-1} \times 2^{-2}) \div 4^{-1}$  is -----  
 A. 1/5              B. 5                  C. 1/80              D. 40
4. Product of all numbers on a telephone dial is.....  
 A. 0                  B. 362880              C. 45                  D. 360
5. If the number  $36 \times x \times 56$  is divisible by 19, then what will be the value for x?  
 A. 36                  B. 56                  C. 92                  D. 19
6. Determine the minimum integer value of  $n$  for which  $3n + 7 > 25$ .  
 A. 7                  B. 6                  C. 5                  D. 8
7. If  $\frac{1}{x} + \frac{1}{3x} \leq 1$ , then which of the following is true for  $x$  ?  
 A.  $x \geq 3/4$         B.  $x \geq 4/3$         C.  $x \geq 1/4$         D.  $x \leq 1/4$
8. A mathematics class has 12 boys and 16 girls. What fraction of the class are boys?  
 A. 12/16              B. 16/12              C. 12/28              D. 16/28
9. A chemical solution contains 2% of acid. If there is 5 ml of acid, the quantity of the solution is:  
 A. 0.1ml              B. 250ml              C. 10ml              D. 1ml
10. In a tank holding 30 gallons of solution, 1 gallon is alcohol. What is the percentage of alcohol in the solution?

- A. 1%      B. 30%      C. 3%      D. 3.33%
11. In the calculation of a question student multiply a number by  $\frac{3}{5}$  instead of  $\frac{5}{3}$ . What is the percentage error in the calculation?  
A. 60%      B. 64%      C. 36%      D. 20%
12. In a car park, the ratio of red cars to green cars is 5:7 while the ratio of green cars to blue cars is 3:8. The ratio of red cars to blue cars is:  
A. 40:21      B. 15:21      C. 15:56      D. 215:40
13. A pile of  $10^8$  identical books weights  $30\text{Kg}$ . How many books weight  $20\text{Kg}$  ?  
A. 72      B. 36      C. 80      D. 60
14. If  $6y=4$ , then  $(6y+3)^2=$ .....  
A. 7      B. 49      C. 81      D. 36
15. If  $(x-y)^2 = 2$  and  $x^2 + y^2 = 2$ , then  $xy=$ .....  
A. 2      B. 1      C. 0      D. -1
16. If the length and breadth of a rectangle are 4 and 3 respectively. Then the length of diagonal is \_\_\_\_\_  
A. 7      B. 12      C. 5      D. 6
17. An angle of measure less than 90 degrees is called a/an ----  
A. Acute      B. Obtuse      C. Right angle      D. None of these
18. The sum of three consecutive numbers is 72. What is the smallest of these numbers?  
A. 22      B. 20      C. 21      D. 23
19. If  $\frac{a}{3} = \frac{b}{4} = \frac{c}{7}$ , then the value of  $\frac{a+b+c}{c}$  is -----  
A. 4      B. 2      C. 3      D. 7
20. The average savings of 2 girls and 2 boys is \$250. Each girl saves \$50 more than each boy. Find the savings of one boy.  
A. 37.5      B. 12.5      C. 8.5      D. 1.5

### Section No. III – Computer Science

#### Syllabus

- Introduction to Programming (5%)
- Object Oriented Programming (5%)
- Data Structures (5%)
- Fundamentals of Algorithms (5%)
- Operating Systems (5%)
- Digital Logical Design (5%)
- Database Management Systems (5%)
- Software Engineering (5%)
- Data Communication (5%)
- Theory of Automata (5%)

#### *Sample Test Questions*

1. Which of the following functions of a class cannot be overloaded?  
A. Member function      B. Utility function      C. Constructor      D. Destructor
2. If the code is not properly indented, it will be:  
A. Logical error      B. Syntax error      C. Run-time error      D. Not an error at all

3. Which of the following features of object oriented programming is used to derive a class from another class?  
A. Encapsulation    B. Polymorphism    C. Inheritance    D. Aggregation
4. Which data member of a class can be accessed without creating the object of that class?  
A. Private member    B. Public member    C. Global member    D. Static member
5. What will be the equivalent postfix expression for the infix expression " $6 + 8/2$ " ?  
A.  $6\ 8\ /\ +\ 2$     B.  $6\ 8\ 2\ /\ +$     C.  $6\ 8\ /\ 2\ +$     D.  $\ / \ 8\ 2\ +\ 6$
6. If both pointers of a particular node in a binary tree are NULL, that node will be:  
A. Inner node    B. Leaf node    C. Root node    D. Both pointers of a node cannot be NULL
7. While considering the efficiency of an algorithm, two main measures are:  
A. Complexity and capacity    C. Processor and memory    C. Time and space    D. Data and space
8. The complexity of Binary search algorithm is:  
A.  $O(n)$     B.  $O(n^2)$     C.  $O(\log n)$     D.  $O(n \log n)$
9. The process of switching from one process to another is called:  
A. Scheduling    B. Context switching    C. Quantum period    D. Latency
10. The problem of indefinite blockage of low-priority processes can be solved with the help of:  
A. Starvation    B. Deadlock    C. Aging    D. Semaphore
11. In a 3-variable Karnaugh Map (K-Map), total cells for min or max terms are:  
A. 4    B. 8    C. 12    D. 16
12. Demultiplexer has:  
A. Multiple inputs and multiple outputs    B. Multiple inputs and single output  
C. Single input and single output    D. Single input and multiple outputs
13. What type of relationship exists between a Teacher table and Class table?  
A. One to one    B. One to many    C. Two to two    D. Many to many
14. Transitive dependencies are specifically not allowed in which normal form?  
A. First    B. Second    C. Third    D. All of the given
15. Up to 60% of all the defects found in software projects can be traced back to poor:  
A. Requirements    B. Design    C. Coding    D. Testing
16. Performance and usability are considered as:  
A. Business requirements    C. Functional requirements  
B. Non-functional requirements    D. User requirements
17. Which layer is responsible for moving frames from one hop (node) to the next?  
A. Physical    B. Data link    C. Transport    D. Presentation
18. Through which layer, mail services are available to network users?  
A. Physical    B. Data link    C. Transport    D. Application
19. In context free grammar, the symbols which cannot be replaced by anything are called:  
A. Terminal    B. Non-Terminal    C. Production    D. Context
20. The reverse of the string "abcabb" defined over alphabet { a, b, c } is:  
A. bbacba    B. bacbca    C. bacbac    D. bbacab

THE END