



# SIR SYED CASE INSTITUTE OF TECHNOLOGY

MS MATHEMATICS ENTRY TEST SPRING 2021

## Sample front page

Total Questions (100)

Time Allowed (120 mins)

NAME \_\_\_\_\_

ROLL # \_\_\_\_\_

### Instructions

- Write your Name and Roll # in the fields provided above.
- No page or part of page from the question booklet can be torn out or be taken out of the examination room.
- Use the blank sides of the question book for rough work.
- Candidates are not permitted to ask presiding examiner questions unless there is any printing error
- Candidates shall not be allowed to go out of the examination hall unless there is some medical emergency
- Any candidate who creates disturbance during the exam shall be declared disqualified
- Speaking/communicating/sharing information with other people is prohibited
- Using/consulting through a communication device such as mobile phone etc is prohibited
- Calculators are not allowed.
- Return both question booklet and answer sheet to invigilators at the end of test.

TURN THIS PAGE OVER WHEN ANNOUNCED

# SAMPLE QUESTIONS

THE TENTATIVE TEST PATTERN FOR MS MATHEMATICS ENTRY TEST SPRING 2021 IS GIVEN AS FOLLOWS:  
Verbal Reasoning: 15-20 %; Analytical Reasoning: 15-20 %; Mathematics Subject: 60-70 %

## *Sample Questions*

### SECTION-I: Verbal Reasoning

Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words that, when inserted in the sentence, best fits the meaning of the sentence as a whole.

1. As a journalist who works to overturn erroneous convictions, Griffin Nicholson was opposed to the court ruling \_\_\_ appeals for inmates who might be \_\_\_ .
  - A. barring...culpable
  - B. curbing...exonerated
  - C. encouraging...innocent
  - D. scrutinizing...eligible
  - E. shielding...esteemed

Each question below consists of a related pair of words or phrases, followed by five lettered pairs of words or phrases. Select the lettered pair that best expresses a relationship similar to that expressed in the original pair.

2. SOLDIER: REGIMENT
  - A. Colonel: martinet
  - B. Dancer: balletomane
  - C. Singer: chorus
  - D. Trooper: rifle

### SECTION-II: Analytical Reasoning

#### **For question 3 to 4**

The principal of a school is forming a committee. There are to be five members: three teachers, chosen from Mr. J, Ms. K, Ms. L, Mr. M, and Mr. N; and two students, chosen from O, P, Q, and R. The composition of the committee must conform to the following conditions: Ms. J will serve only if R is also on the committee. Ms. L will not serve unless Ms. K and O also serve. Neither Mr. M nor Mr. N will serve without the other. If P serves, neither Q nor R can serve.

3. Which of the following is an acceptable committee?
  - A. J, L, M, N, O
  - B. K, L, N, O, P
  - C. K, M, N, O, R
  - D. L, M, N, O, R
  - E. M, N, O, P, Q
4. How many different committees could include Mr. J and Q?
  - A. 1
  - B. 2
  - C. 3
  - D. 4
  - E. 5

### SECTION-III: MATHEMATICS

5.  $|3x - 4| \leq 1$  means that

- A.  $x \in ]1,2[$
- B.  $x \in [1,2[$
- C.  $x \in [1,2]$
- D.  $x \in (-\infty, 1)$
- E. None of these

6. The solution of the differential equation  $(2x + y + 1)dx + (4x + 2y - 1)dy = 0$  is

- A.  $x+2y+\ln|2x-y|=c$
- B.  $x+2y+\ln|2x+y+1|=c$
- C.  $x+2y+\ln|2x+y-1|=c$
- D. None of the above

7. An equation  $\frac{dy}{dx} + P(x)y + Q(x)y^n = R(x)$  with  $n = 2$ , is called

- A. Linear Equation
- B. Ricatti Equation
- C. Bernoulli Equation
- D. Non-Linear Equation
- E. None of the above

8. Eigen values of a real symmetric matrix are always

- A Positive
- B real and imaginary
- C negative
- D real

9. If a card is chosen from a standard deck of 52 cards, what is the probability of getting a five or a seven?

- A  $4/52$
- B  $1/26$
- C  $8/52$
- D  $1/169$

10. The series  $\sum_1^{\infty} \frac{n!}{n^2}$

- A) Converges
- B) Diverges
- C) 0
- D) None of the above