

TEST CODE :



NGSE

CLASS 7

Time :
90 Minutes

**National Genius Search
Examination® : Advanced**

Your NGSE Roll No. Date of the Test

Student's Name

Signature of the Student	Signature of the Invigilator Check the correctness of the Roll No. with the Answer Sheet.
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INSTRUCTIONS TO THE CANDIDATE

- 1. DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO.**
- Fill and sign this Question Booklet. Fill the information required in first page of the Answer Booklet. Start your answers from the third page of the Answer Sheet. Do not write answers on the second page of the Answer Sheet, which is kept blank. You may carry this booklet with you after the scheduled time of the test.
- Do not seek clarification on any item in the test booklet from anyone including the test invigilator or the center supervisor. Use your best judgement.
- This booklet consists of two sections as given below :
SECTION-1: MATHEMATICS – 5 Questions and **SECTION - 2: SCIENCE – 5 Questions.** In case of any problem with your test booklet, inform the invigilator immediately. You will be provided with a replacement.
- Use black/blue ball point pen only for writing the answers.
- Use of mathematical instruments/compass box is allowed. Standalone calculators are also allowed.
- All questions are compulsory. Each question carries 10 marks. Negative marks are not awarded.
- Each answer should not be more than 150 words. You may demand additional Answer sheets if required.
- Staple all the answer sheets together, page wise.
- Failure to follow instructions and examination norms will lead to disqualification.

PLEASE WAIT FOR THE SIGNAL TO OPEN THE TEST BOOKLET

Open from this side →

SECTION – 1: MATHEMATICS

1. Vidya's teacher says you can't divide a number by zero as there is no sensible way to define it. Why she says so? Explain using associative property of multiplication.
2. Discuss the following briefly:
 - (a) Can you divide an isosceles triangle and an equilateral triangle into two equal right angled triangles?
 - (b) What is the axis of symmetry of a (1) Right angled triangle, (2) an isosceles triangle and (3) an equilateral triangle?
 - (c) Is it possible to have a right angled isosceles triangle?
3. What is π with respect to a circle? Why does π appear in the formulae for circumference and area of a circle?
4. Why did the teacher agree when Wisden said "Every fraction is a rational number, but not every rational number is a fraction"? Explain with examples.
5. (a) In terms of mathematics, what are the facts you should know to calculate the probability of you getting full marks in this examination when one of its questions is wrong?
 - (b) Discuss the probability of India winning a match where 6 runs are required when the last ball of the match is to be bowled?
 - (c) Also discuss the probability of the batsman hitting a six in the last ball of the match.
 - (d) Vidya is standing in front of mirror. What is probability of her image in the mirror gets congruent to her?

SECTION – 2: SCIENCE

6. Richa's wall clock has a pendulum. (a) Can we assume the movement of the clock's pendulum is uniform? Why? (b) Discuss your observations about uniform and non uniform oscillatory motion in daily life.
7. After the class on acids and bases, Vidya made greeting cards by applying turmeric paste on paper and used soap solution to write on it. She now wants to send an invisible message to someone. How can she do this with the help of chemistry? How the person receives the message read it?
8. What is water cycle? In your words, why should we include wastewater management to restructure the water cycle? How waste water can be managed?

9. A scene in the movie *Animals are Beautiful People*, shows how sunlight coming through a dewdrop burns the entire nest of weaver birds. How do you explain this scientifically?
10. By nature, reproduction is the ultimate aim of any living organism. Is the statement correct? Critically analyze your observations with reproduction in plants.

END OF DOCUMENT

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