



# DELHI PUBLIC SCHOOL NEWTOWN

SESSION 2021-22

MONDAY TEST

CLASS: IX  
SUBJECT: MATHEMATICS

FULL MARKS: 40  
DATE: 28/ 05/ 2021

**GENERAL INSTRUCTIONS:**

- The paper consists of one printed page.
- All questions are compulsory.
- Copy the question number carefully before answering the questions.

1. Find the amount and the compound interest on ₹ 1,00,000 for  $1\frac{1}{2}$  years at 8% per annum, the interest being compounded semi-annually. [4]
2. If  $p + q + r = 12$  and  $p^2 + q^2 + r^2 = 50$ , find  $pq + qr + pr$ . [4]
3. Convert  $4.6\overline{274}$  into vulgar fraction. [4]
4. If  $a + 3b + 2c = 0$ , Prove that  $a^3 + 27b^3 + 8c^3 = 18abc$  [4]
5. Prove that  $\sqrt{17}$  is an irrational number by the method of contradiction. [4]
6. If  $x = \frac{1}{4-x}$ , find the value of (i)  $x + \frac{1}{x}$  (ii)  $x^2 - \frac{1}{x^2}$  (iii)  $x^3 + \frac{1}{x^3}$  [5]
7. A man invests ₹ 10,000 for three years at a certain rate of interest, compounded annually. At the end of one year it amounts to ₹ 10,600. Calculate:
  - (i) the rate of interest per annum
  - (ii) the interest accrued in the second year.
  - (iii) the amount at the end of the third year.[5]
8. The simple interest on a certain sum for 4 years is ₹ 2400 and the compound interest on the same sum at the same rate for 2 years is ₹ 1230. Find
  - (i) the rate of interest,
  - (ii) the principal.[5]
9. Simplify:  $\frac{4\sqrt{3}}{2-\sqrt{2}} - \frac{30}{4\sqrt{3}-3\sqrt{2}} - \frac{3\sqrt{2}}{3+2\sqrt{3}}$  [5]