DELHI PUBLIC SCHOOL NEWTOWN
SESSION 2025 -26
MONDAY TEST

CLASS: IX **FULLMARKS: 40**
SUBJECT: MATHEMATICS **DATE: 07/07/25**

General Instructions:

- **The paper consists of two printed pages.**
- **All questions are compulsory.**
- **Copy the question number carefully before answering the questions.**

SECTION: A

1. **[1×8 = 8]**

i) The highest common factor of 24 x^2y and 39 xy^2 is:

(a) 13 **(b) xy** **(c) 3xy** **(d) 312x^2y^2**

ii) The compound interest on ₹25000 after 2 years at 12% per annum will be:

(a) ₹ 3630 **(b) ₹6200** **(c) ₹6300** **(d) ₹6360**

iii) The factors of $x^2 + xy + 8x + 8y$ are:

(a) (x + y) (x + 8) **(b) (2x + y) (x + 8)** **(c) (x + 2y) (x + 8)** **(d) (x + y) (2x + 8)**

iv) The difference between the amounts for ₹ 5000 after 1 year at 10% per annum compounded half-yearly and yearly will be:

(a) ₹ 15.50 **(b) ₹13.50** **(c) ₹12.50** **(d) ₹10.50**

v) (x + 8) (x – 10) in the expanded form of:

(a) $x^2 – 8x – 80$ **(b) $x^2 – 2x – 80$**

(c) $x^2 + 2x + 80$ **(d) $x^2 – 2x + 80$**

vi) $\frac{1+\sqrt{2}}{3}$ is:

(a) a rational number **(b) an irrational number**

(c) a natural number **(d) an integer**

vii) Statement 1: The commutative property is applicable to addition and subtraction both for rational numbers.

Statement 2: As per associative property, A - (B - C) = (A - B) - C. (A, B, C are rational numbers)

(a) Statement 1 is only correct.

(b) Statement 2 is only correct.

(c) Statement 1 and statement 2 both are correct.

(d) Statement 1 and statement 2 both are incorrect.

viii) Assertion (A): $(a + b)^2 = a^2 + 2ab + b^2$ and $(a - b)^2 = a^2 - 2ab + b^2$

Reasoning (R): $4ab = (a + b)^2 - (a - b)^2$

(a) Both (A) and (R) are true, and R is the correct reason for A.
(b) Both (A) and (R) are true, and R is the incorrect reason for A.
(c) (A) is true but (R) is false.
(d) (A) is false but (R) is true.

SECTION: B

2. Factorise: **[3×3=9]**

i) $x^2y^2 - xy - 72$

ii) $m^2 + \frac{1}{m^2} + 2 - 2m - \frac{2}{m}$

iii) $a^3 - 9b^3 + (a + b)^3$

3. convert 1.373737…….. in rational form. **[3]**

4. Mr. A keeps ₹ 4000 for 2 years at the rate of interest 8% per annum in a bank situated in his locality.

i) Find the simple interest received after 2 years at the same rate p.a.

ii) Find the compound interest after 2 years at the same rate p.a. compounded annually.

iii) Calculate the difference between compound interest and simple interest received after 2 years. **[4]**

5. Insert three rational numbers between $\frac{2}{7}$ and $\frac{3}{5}$. **[4]**

6. If $x = \sqrt{5} + 2$, find the value of $x^2 - \frac{1}{x^2}$. **[4]**

7. If $x + y = 8$ and $x - y = 2$, find the value of $2x^2 + 2y^2$ **[4]**

8. Calculate the amount on ₹16,000 in 3 years when the rates of interest are 5%, 10%, and 15% for successive years. **[4]**