SAMPLE PAPER

CLASS : 9

MATRIX OLYMPIAD
The Most Innovative Talent Recognition Exam

Total Questions : 70

Duration : 2 Hrs.

Paper Pattern				
Section	(A) Physics	(B) Chemistry	(C) Biology	(D) Mathematics	(E) Logical Reasoning & IQ
Number of Questions	10	10	10	30	10

Marking Scheme: +4 For Correct Answer (One mark will be deducted for wrong answer)

Syllabus

Section A – • Motion • Force
Section B – • Matter in our surroundings • Is Matter Around us pure
Section C – • The Fundamental Unit of Life – Cell • Tissues
Section D – • Number System • Polynomials • Coordinate Geometry • Linear Equations in Two Variables • Lines and Angles • Triangles
Section E – • Series : Number, Alphabet and Letter repeating series • Direction sense • Ranking and Ordering • Mathematical Operation • Puzzle • Data Sufficiency

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Instructions :

1. This Booklet is your **Question Paper**. DO NOT break seal of Booklet until the invigilator instructs to do so.

2. The Answer Sheet is provided to you separately which is a machine readable **Optical Response Sheet (ORS)**. You have to mark your answer in the ORS by darkening bubble, as per your answer choice, by using **Black/Blue** ball point pen only.

3. If you are found involved in cheating or disturbing others then your ORS will be cancelled.

4. Do not put any stain on ORS and hand it over back properly to the invigilator.

5. You can take along the question paper after test over.

Note: This is a Sample Paper and Actual Question Paper Contains 70 Questions.

SECTION – A : PHYSICS

1. The Newton's laws of motion are valid in :

    [Motion]

    (A) Inertial frames

    (B) Non-inertial frames

    (C) Rotation frames

    (D) Accelerated frames

SECTION – B : CHEMISTRY

2. Seema visited a Natural Gas Compressing Unit and found that the gas can be liquefied under specific conditions of temperature and pressure. While sharing her experience with friends she got confused. Help her to identify the correct set of conditions :

    [Matter in Our Surroundings]

    (A) Low temperature, low pressure

    (B) High temperature, low pressure

    (C) Low temperature, high pressure

    (D) High temperature, high pressure

SECTION – C : BIOLOGY

3. Match the following and choose the correct option :

Column-I		Column-II	
(a)	Osteocytes	(i)	Fluid connective tissue
(b)	Schwann cells	(ii)	Skeletal tissue
(c)	Thrombocytes	(iii)	Areolar connective tissue
(d)	Fibroblast	(iv)	Nervous tissue

    [Tissues]

    (A) (a) $\rightarrow$ (i), (b) $\rightarrow$ (iii), (c) $\rightarrow$ (ii), (d) $\rightarrow$ (iv)

    (B) (a) $\rightarrow$ (ii), (b) $\rightarrow$ (iv), (c) $\rightarrow$ (i), (d) $\rightarrow$ (iii)

    (C) (a) $\rightarrow$ (iii), (b) $\rightarrow$ (ii), (c) $\rightarrow$ (i), (d) $\rightarrow$ (iv)

    (D) (a) $\rightarrow$ (ii), (b) $\rightarrow$ (iv), (c) $\rightarrow$ (iii), (d) $\rightarrow$ (i)
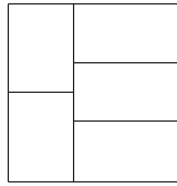
SECTION – D : MATHEMATICS

4. Kavya has $(x^3 + x^2 - 2ax - 2b)$ Sweets. In order for no sweets to be left over, she can equally share them among either $(x - 2)$ children or $(x + 1)$ children. If $x = 5$, then find the number of sweets she has.

    [Polynomials]

    (A) 78   (B) 100

    (C) 126   (D) 140

5. A rectangle with perimeter 88cm is partitioned into 5 congruent rectangles, as indicated in the diagram. The perimeter of each of the concurrent rectangle is :

[Triangle]

(A) 48 cm   (B) 40 cm

(C) 34 cm   (D) 30 cm

6. A point (a, b) in the plane is such that $|a| \le 4$, $|b| \le 4$ where a, b are integers, then what is the probability that the distance from origin is at most two units ?

[Coordinate Geometry]

(A) $\dfrac{13}{18}$ (B) $\dfrac{15}{81}$

(C) $\dfrac{11}{81}$ (D) $\dfrac{13}{64}$

7. If $|x - 3| = 2$, then values of x are ___ .

[Linear Equations in Two Variables]

(A) x = 1 and x = 5   (B) x = 5 and x = – 1

(C) x = 2 and x = 3   (D) x = – 1 and x = – 3

8. The number of ways of writing the number $\dfrac{1}{15}$ in the form $\dfrac{a}{3} - \dfrac{b}{5}$ (a, b are integers) :

[Number System]

(A) 1   (B) Infinitely many

(C) 0   (D) Finitely many

SECTION – E : LOGICAL REASONING & IQ

9. **Question :** How much was the total sale of the company ?

Statements :

I. The company sold 8000 units of product A each costing Rs. 25.

II. This company has no other product line.

[Data Sufficiency]

(A) **I** alone is sufficient while **II** alone is not sufficient

(B) **II** alone is sufficient while **I** alone is not sufficient

(C) Either **I** or **II** is sufficient

(D) Both **I** and **II** are sufficient

10. Read the following information and answer the question given below it :

Alka is older than Mala. Gopal is older than Mala but younger than Alka. Kapil is younger than Ram and Mala.

Mala is older than Ram.

Whose age is between Gopal and Ram ?

[Ranking & Ordering]

(A) Mala   (B) Kapil

(C) Alka   (D) None of these