



MATRIX OLYMPIAD

CSR Initiative of Matrix Education, Sikar to motivate and reward young talent.

✓ Total Questions : 70

✓ Maximum Marks : 280

✓ Duration : 2 Hrs.

PAPER PATTERN

Part	(I) Physics	(II) Chemistry	(III) Biology	(IV) Mathematics	(V) 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)

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 **damage** the ORS sheet in any manner. If ORS is damaged or not completed properly, your results will not be prepared.
5. If you have any **confusion** in filling-up ORS sheet, please **contact** your invigilator. Incomplete ORS will be not be evaluated.
6. You can take the question paper home once the ORS is submitted.





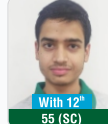





Answer Key and Video Solutions Kindly Scan QR Code and subscribe Matrix youtube channel

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JEE ADVANCED TOPPERS

 With XII Mayank Soni	AIR 26 (Gen.)	 With XII Priyanshu Meel	AIR 154 (Gen.)	 With XII Nagendra Singh	AIR 220 (Gen.)	 With XII Mohit Modi	AIR 296 (Gen.)	 With XII Aman Nehra	AIR 356 (Gen.)	 With XII Himanshu Rewar	AIR 358 (Gen.)	 With XII Aarish	AIR 415 (Gen.)	 Uttam Paharia	AIR 421 (Gen.)
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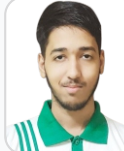
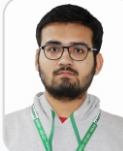
JEE MAIN TOPPERS

100 %tile  With XII Mayank Soni	AIR 34 (Gen.)	99.99 %tile  With 12 th 15 (OBC) Nagendra Singh	AIR 123 (Gen.)	99.97 %tile  With 12 th 55 (SC) Shailesh Saini	AIR 354 (Gen.)	99.98 %tile  With XII Mohit Modi	AIR 213 (Gen.)	99.97 %tile  With XII Aman Nehra	AIR 393 (Gen.)	99.97 %tile  With 12 th Satyam Sharma	AIR 426 (Gen.)	99.96 %tile  With XII Anupam Jakhhar	AIR 478 (Gen.)	99.95 %tile  Uttam Paharia	AIR 509 (Gen.)
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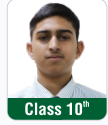
NEET (UG) Toppers

Marks-680  Rekha Nitharwal	AIR 1665	Marks-670  Narendra Farroda	AIR 2905	Marks-667  Mahendra Yadav	AIR 3263	Marks-666  Ankit Kumar Chahar	AIR 3378	Marks-665  Deepika Soni	AIR 3545	Marks-665  Lokesh Goyal	AIR 3621	Marks-665  Mohit Haritwal	AIR 3661
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KVPY TOPPERS

 Manas Jajodia	AIR 6 (Gen.) Stream- SB	 Ishu	AIR 8 (Gen.) Stream- SB	 Lakshya	AIR 13 (Gen.) Stream- SB	 Akshay Choudhary	AIR 17 (Gen.) Stream- SB	 Chirag Indoria	AIR 37 (Gen.) Stream- SB
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STSE TOPPERS

 Aman Nehra	1 st State Rank Class 12 th	 Aman Nehra	2 nd State Rank Class 12 th	 Dinesh Kumar	2 nd State Rank Class 12 th	 Pranshu Bharia	2 nd State Rank Class 10 th	 Shrishti	2 nd State Rank Class 10 th	 Rohit Yadav	2 nd State Rank Class 10 th	 Dev Kumar	3 rd State Rank Class 10 th	 Mohd. Farhan	3 rd State Rank Class 10 th
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OUR BOARD TOPPERS

99.20%  Pinakin Choudhary	98.80%  Aradhya Raina	98.20%  Laxmi	98.00%  Vishal Choudhary	97.80%  Preksha Singh	97.80%  Piyush Sagatani	97.60%  Khushee Binwal	97.60%  Reena	97.60%  Siddhant Lalpuria	97.40%  Rohit Yadav
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NTSE TOPPERS

 Aditya Jhajhria	1 st State Rank	 Nayan Godara	1 st State Rank	 Aman Nehra	1 st State Rank	 Aaditya Pratap	2 nd State Rank	 Mayank Soni	2 nd State Rank	 Aditya Bijarniya	4 th State Rank	 Pragati	5 th State Rank
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Authenticity of result, promise of Matrix!

*cumulative result so far

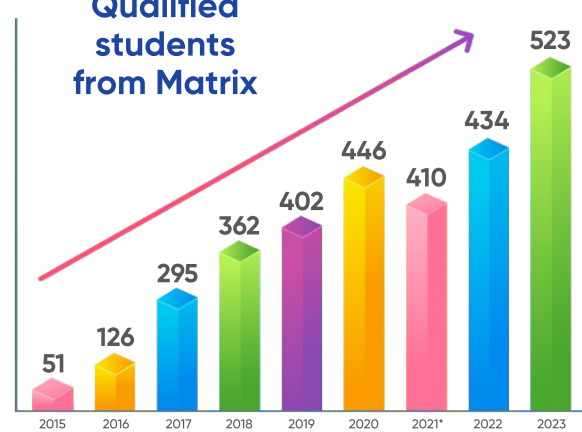
यह परिणाम मैट्रिक्स के केवल Yearlong classroom Program Students का ही है

Remarkable result growth in both JEE Main & Advanced on a consistent basis

JEE Main Qualified students from Matrix



JEE Advanced Qualified students from Matrix



Note : All results are from Matrix year long classroom program at Sikar only.

*due to covid

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HIGHLIGHTS at MATRIX

Total students qualified in JEE Main

6700+

students have been qualified in JEE main from matrix till date.

2500+

students have qualified JEE Advanced till date – Highest in Sikar

2000+

final admissions in various top IITs over last 5 years – Highest in Sikar

3500+

selection in NIT/IIITs and other or other Prestigious Universities Highest in Sikar

2023 RESULT

Top score in JEE Main 2023
Mayank Soni

Rank- **34**

Top scorer JEE Advanced 2023
Mayank Soni

AIR- **26** (Gen)

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All India Rank **6** in KVPY 2021:
MANAS JAJODIA

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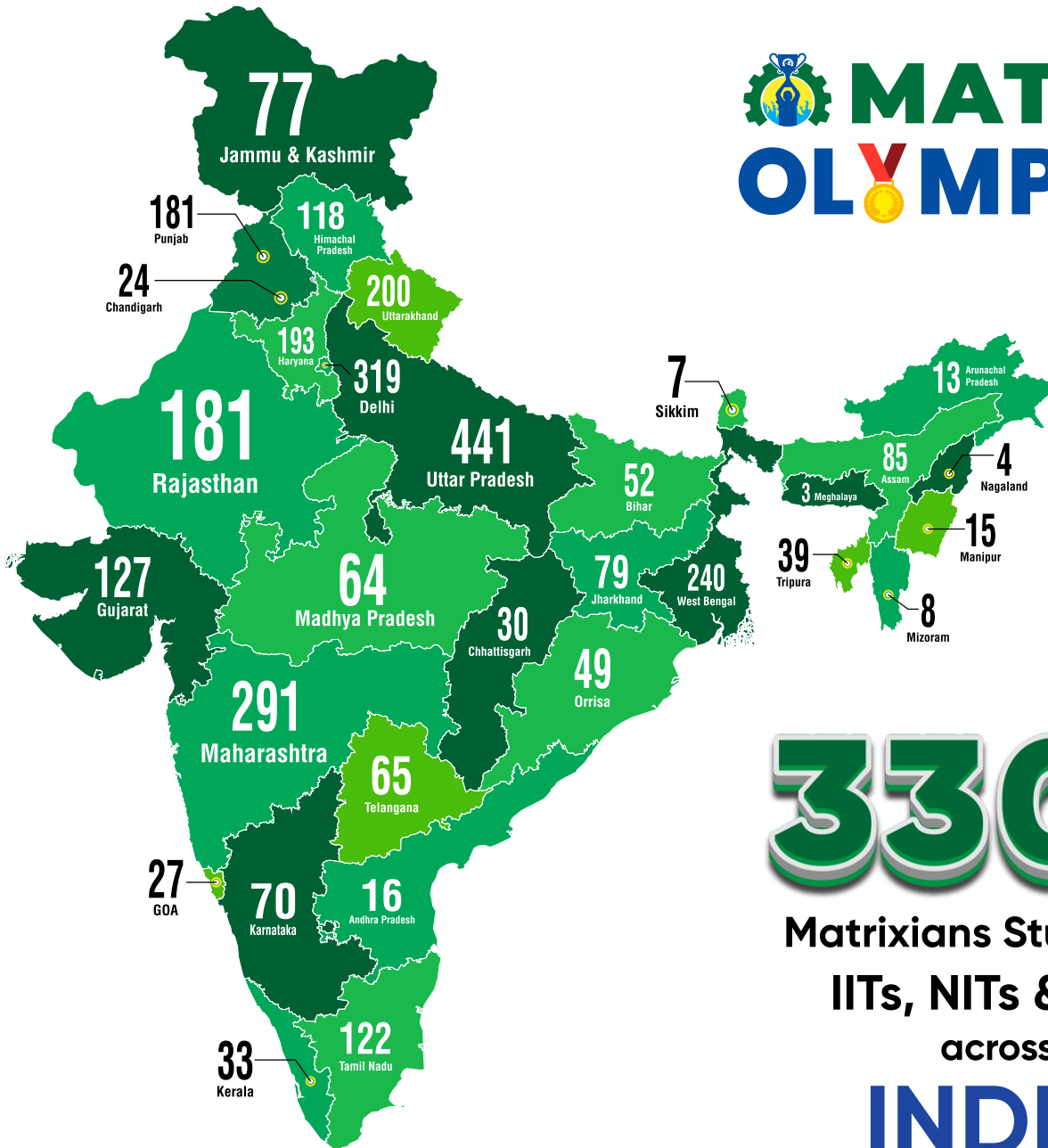
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MATRIX OLYMPIAD



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PART I : PHYSICS

This section contains **10 Multiple Choice Questions (Q : 01 to Q : 10)**. Each question has four choices (A), (B), (C) and (D) out of which **ONLY ONE** is correct.

1. An athlete completes one round of a circular track of radius R in 40 sec. What will be his displacement at the end of 2 min. 20 sec.

- (A) Zero
- (B) $2R$
- (C) $2\pi R$
- (D) πR^2

2. A 150 m long train is moving with a uniform velocity of 45 km/h. The time taken by the train to cross a bridge of length 850 m is :

- (A) 56 sec
- (B) 68 sec
- (C) 80 sec
- (D) 92 sec

3. A cricket ball is thrown up with a speed of 19.6 ms^{-1} . The maximum height it can reach is:

- (A) 9.8 m
- (B) 19.6 m
- (C) 29.4 m
- (D) 39.2 m

4. Rocket Propulsion is associated with

- (A) The conservation is angular momentum
- (B) The conservation of mass
- (C) The conservation of mechanical energy
- (D) Newton's III law of motion

5. A ball of mass 150g starts moving with an acceleration of 20 m/s^2 . When hit by a force, which acts on it for 0.1 sec the impulsive force is :

- (A) 0.5 N-s
- (B) 0.1 N-s
- (C) 0.3 N-s
- (D) 1.2 N-s

6. When a horse pulls a wagon, the force that causes the horse to move forward is the force?

- (A) The ground exerts on it
- (B) It exerts on the ground
- (C) The wagon exerts on it
- (D) It exerts on the wagon

7. Match **Column – I** with **Column – II** and select the correct answer using the codes given below.

Column – I	Column – II
P. Inertia of a body	1. Directed away from the centre around which the body is moving
Q. Friction force	2. Always opposes relative motion
R. Centrifugal force	3. Determined by the matter content of the body

Space for rough work

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Code :

- | | <i>P</i> | <i>Q</i> | <i>R</i> |
|-----|----------|----------|----------|
| (A) | 2 | 3 | 1 |
| (B) | 3 | 1 | 2 |
| (C) | 3 | 2 | 1 |
| (D) | 2 | 1 | 3 |

8. Which of the following statement/s is/are **True(T)** or **False(F)** ?

- (i) A body have non zero acceleration can have constant velocity .
- (ii) Velocity is vector quantity.
- (iii) An object can have constant speed but variable velocity.

Code :

- | | <i>(i)</i> | <i>(ii)</i> | <i>(iii)</i> |
|-----|------------|-------------|--------------|
| (A) | T | F | F |
| (B) | F | T | T |
| (C) | F | F | T |
| (D) | F | T | F |

Paragraph for Questions 09 & 10

The first law refers to the simple case when the net external force on a body is zero. The second law of motion refers to the general situation when there is a net external force acting on the body. It relates the net external force to the acceleration of the body.

9. If a car with a mass of 1000 kg is accelerating at 2 m/s^2 , what is the net force acting on the car?
- (A) 500 N
 - (B) 1000 N
 - (C) 2000 N
 - (D) 5000 N
10. A body experiences no acceleration. What can be concluded about the net external force acting on it?
- (A) It is acting in the opposite direction to motion.
 - (B) It is equal to the weight of the body.
 - (C) It is zero.
 - (D) It is infinite.

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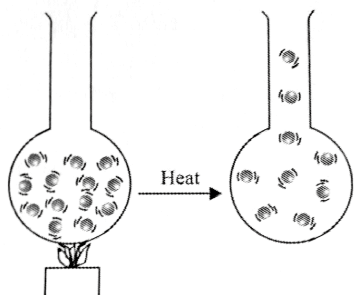
PART II : CHEMISTRY

This section contains 10 Multiple Choice Questions (Q : 11 to Q : 20). Each question has four choices (A), (B), (C) and (D) out of which **ONLY ONE** is correct.

- | | | |
|--|-----------------------|--|
| <p>11. Identify the heterogeneous mixture among the following-</p> <p>(A) Brine solution
(B) Duralumin
(C) Gun powder
(D) Liquor ammonia</p> <p>12. There is a mixture of three solid compounds A, B and C. Out of these compounds A and C are soluble in water and compound C is sublimable as well. In what sequence, the following techniques can be used for their effective separation ?</p> <p>(I) Filtration
(II) Sublimation
(III) Crystallisation from water extract
(IV) Dissolution in water</p> <p>(A) (II), (I), (IV), (III)
(B) (IV), (I), (II), (III)
(C) (I), (II), (III), (IV)
(D) (II), (IV), (I), (III)</p> | ***** B09151023 ***** | <p>13. Which property of aluminium is used in the making of aluminium foils ?</p> <p>(A) Malleability
(B) Ductility
(C) Lustre
(D) Conductivity</p> <p>14. A drop each of two non-corrosive and non-irritating liquids A and B at temperature of 22°C are placed on the skin. Liquid A gives more cooling sensation than liquid B. Which of the following can be said about the liquids A and B ?</p> <p>(A) Liquids A has higher boiling point than that of liquid B.
(B) Liquid A has high latent heat of vaporisation than that of liquid B.
(C) Liquid A has low latent heat of vaporisation than that of liquid B.
(D) The boiling points of liquids A and B are equal.</p> |
|--|-----------------------|--|

Space for rough work

15. A flask containing a liquid X is heated until it boils as shown in the figure.



Choose the incorrect statement about the particles of the substance during the process.

- (A) Energy is absorbed by particles in the liquid X.
 (B) The particles lose kinetic energy.
 (C) Eventually, the particles throughout the liquid have enough energy to overcome the forces holding them together.
 (D) Both (A) and (B)
16. Which of the following statements does not go with the liquid state ?
- (A) Particles are loosely packed in the liquid state.
 (B) Fluidity is maximum in the liquid state.
 (C) Liquids can not be compressed much.
 (D) Liquids take up the shape of any container in which they are placed.

17. Match **Column – I** with **Column – II** and select the correct answer using the codes given below.

Column – I	Column – II
P. Particles move randomly	1. Sugar
Q. Changes directly from solid to gaseous state	2. Nitrogen
R. Particles are not free to move	3. Ammonium chloride

Code :

	<i>P</i>	<i>Q</i>	<i>R</i>
(A)	1	2	3
(B)	2	3	1
(C)	2	1	3
(D)	3	1	2

18. Which of the following statement/s is/are **True(T)** or **False(F)** ?

Seema told that water is a compound, not an element and to justify it, she gave the following statements :

- (i) Heat and light are given out during its formation from its constituent elements.
 (ii) It contains hydrogen and oxygen in the ratio of 1:8 by mass.
 (iii) Its boiling point is 373 K under one atmospheric pressure.

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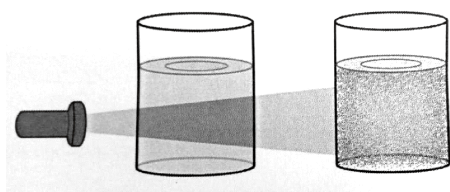
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Code :

- (i) (ii) (iii)
 (A) T F F
 (B) T T T
 (C) F F T
 (D) F T F

Paragraph for Questions 19 & 20

Observe the given diagram and answers the question that follows:



19. Identify the correct statement(s).
- (i) Solution of copper sulphate shows Tyndall effect.
 (ii) Tyndall effect can be observed when a fine beam of light enters a room through a small hole due to scattering of light by the particles of dust and smoke in the air.
 (iii) Tyndall effect can be observed when sunlight passes through the canopy of a dense forest.
 (iv) Mixture of water and milk shows Tyndall effect.
- (A) Only (i)
 (B) (ii) and (iii) only
 (C) (ii), (iii) and (iv) only
 (D) All of these

20. When a beam of light is passed through a colloidal solution, it gets-
- (A) Reflected
 (B) Absorbed
 (C) Scattered
 (D) Refracted

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Space for rough work

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PART III : BIOLOGY

This section contains 10 Multiple Choice Questions (Q : 21 to Q : 30). Each question has four choices (A), (B), (C) and (D) out of which **ONLY ONE** is correct.

21. The two subunits of ribosome remain united at a critical ion level of :-
 (A) Magnesium
 (B) Calcium
 (C) Copper
 (D) Manganese
22. The phenomenon of plasmolysis is evident when cells are kept in:
 (A) Hypotonic solution
 (B) Hypertonic solution
 (C) Isotonic solution
 (D) None of these
23. Digestive enzymes hydrolases are present in:
 (A) Vacuole
 (B) Lysosomes
 (C) Golgi bodies
 (D) Mitochondria
24. Some vascular bundles are described as open because these :
 (A) Possess conjunctive tissue between xylem and phloem.
 (B) Are not surrounded by pericycle.
 (C) Are surrounded by pericycle but not endodermis.
 (D) Are capable of producing secondary xylem and phloem due to presence of cambium.
25. Which of the following is not a connective tissue ?
 (A) Bone
 (B) Cartilage
 (C) Blood
 (D) Muscle
26. In a myelinated neuron, two adjacent myelin sheaths are separated by gaps called:
 (A) Nodes of Ranvier
 (B) Synaptic Cleft
 (C) Synaptic Knob
 (D) Neural plate
27. Match **Column – I** with **Column – II** and select the correct answer using the codes given below:
- | Column – I | Column – II |
|--------------|-----------------|
| P. Cuticle | 1. Guard Cells |
| Q. Stomata | 2. Single layer |
| R. Epidermis | 3. Waxy layer |
- Code :

Space for rough work

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P Q R

- (A) 2 3 1
- (B) 3 2 1
- (C) 3 1 2
- (D) 1 2 3

28. Which of the following statement/s is/are **True(T)** or **False(F)** ?

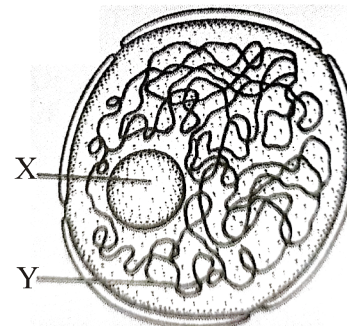
- (i) Elastic cartilage is present at the joints of long bones.
- (ii) Haversian Lamellae are the structures found in hyaline cartilage.
- (iii) The kind of tissue that forms supportive structure in our pinna of external ear, is also found in tip of the nose.

(i) (ii) (iii)

- (A) T F F
- (B) T T T
- (C) F F T
- (D) F T F

Paragraph for Questions 29 & 30

Below diagram is of structure which is present only in eukaryotic cell, while it remain absent in prokaryotic cell.



29. Identify the above figure.

- (A) Nucleus
- (B) Nucleolus
- (C) Mitochondria
- (D) Nucleoid

30. What is the function of X ?

- (A) Synthesis of protein
- (B) Synthesis of ribosomes
- (C) Aerobic respiration
- (D) Trapping of sunlight

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Space for rough work

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PART IV : MATHEMATICS

This section contains 30 Multiple Choice Questions (Q : 31 to Q : 60). Each question has four choices (A), (B), (C) and (D) out of which **ONLY ONE** is correct.

31. Find the value of a and b , if $\frac{\sqrt{11}-\sqrt{7}}{\sqrt{11}+\sqrt{7}} =$

$$a - b\sqrt{77}.$$

(A) $\frac{9}{2}, \frac{1}{2}$

(B) 10, 4

(C) $\frac{5}{2}, \frac{7}{2}$

(D) $\frac{1}{2}, 9$

32. The product of two irrational numbers is _____.

(A) an irrational

(B) rational

(C) Both (A) and (B)

(D) None of these

33. If $1176 = 2^a \times 3^b \times 7^c$, then find the value of $a + b + c$.

(A) 5

(B) 6

(C) 7

(D) 8

34. The graph of the linear equation $2x - y = 4$ cuts x-axis at :

(A) (2, 0)

(B) (-2, 0)

(C) (0, -4)

(D) (0, 4)

35. The perpendicular distance between the graph of the equation $x = -3$ and $x = 2$ is :

(A) 1

(B) 2

(C) 3

(D) 5

36. Ten years ago, father was twelve times as old as his son and 10 year hence, he will be twice as old as his son. Find the present age of father.

(A) 43 years

(B) 10 years

(C) 34 years

(D) None of these

37. Find the value of k , if the point (0, 2) is equidistant from (3, k) and (k , 5).

(A) 4

(B) 1

(C) 2

(D) None of these

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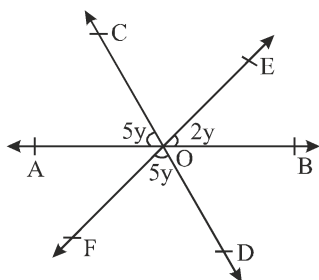
38. Two points having same abscissa but different ordinate lie on :

- (A) x-axis or a line parallel to x-axis
- (B) y-axis or a line parallel to y-axis
- (C) Both (A) and (B)
- (D) None of these

39. The area of the triangle formed by the points A(2,0), B(6,0) and C (4,6) is :

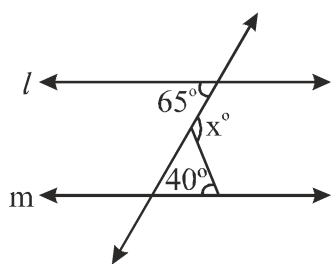
- (A) 24 sq. unit
- (B) 12 sq. unit
- (C) 10 sq. unit
- (D) None of these

40. In the given figure, determine the value of y.



- (A) 75°
- (B) 30°
- (C) 15°
- (D) 105°

41. In the figure given if $l \parallel m$, then the value of x is :

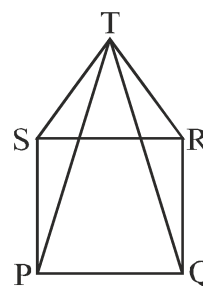


- (A) 105°
- (B) 65°
- (C) 40°
- (D) 25°

42. If $AB \parallel CD$ and $PQ \perp CD$ then the relation between AB and PQ is :

- (A) $AB \parallel PQ$
- (B) $AB \perp PQ$
- (C) Both (A) and (B)
- (D) None of these

43. The given figure PQRS is a square and SRT is an equilateral triangle. Find $\angle TQR$.

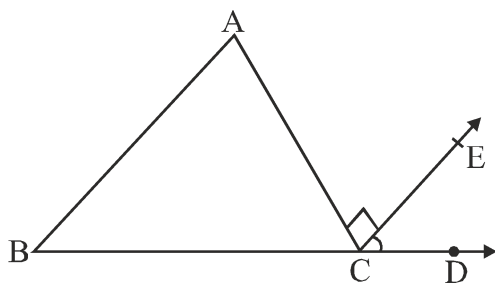


- (A) 60°
- (B) 45°
- (C) 15°
- (D) 35°

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Space for rough work

44. In the given figure $AC \perp CE$ and $\angle A : \angle B : \angle C = 3 : 2 : 1$. Find $\angle ECD$.



- (A) 40°
(B) 60°
(C) 45°
(D) 70°
45. If the sides of a triangle are produce in order, then the sum of the three exterior angle so formed is :
- (A) 360°
(B) 270°
(C) 180°
(D) 90°
46. If one of the zeroes of the polynomial $(a^2 + 9)x^2 + 13x + 6a$ is reciprocal of the other, then find the value of a .
- (A) 2
(B) 3
(C) -3
(D) -2

47. Let $f(x)$ be a polynomial such that $f\left(\frac{-1}{2}\right) = 0$,

then a factor of $f(x)$ is :

- (A) $2x - 1$
(B) $2x + 1$
(C) $x - 1$
(D) $x + 1$

48. $(x + 1)$ is a factor of $(x^n + 1)$ only if :

- (A) n is an odd integer
(B) n is an even integer
(C) n is a negative integer
(D) n is a positive integer

49. Which of the surds is the largest ?

- (A) $\sqrt{34}$
(B) $\sqrt[3]{5}$
(C) $\sqrt[2]{7}$
(D) $\sqrt[4]{2}$

50. The value of $\sqrt{11\sqrt{11\sqrt{11\sqrt{11}}}}$ is :

- (A) $\sqrt[10]{11^5}$
(B) $\sqrt[16]{11^{14}}$
(C) $\sqrt[16]{11}$
(D) $\sqrt[16]{11^{15}}$

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Space for rough work

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51. Match **Column – I** with **Column – II** and select the correct answer using the codes given below.

Column – I	Column – II
------------	-------------

- | | |
|--|--------------------------------------|
| P. Angle that measures between 0° and 90° is called | 1. Supplementary angles |
| Q. Linear pair of angles are also | 2. An acute angles |
| R. When two lines intersect, then the pair of opposite angles so formed is called | 3. Vertically opposite angles |

Code :

- | | <i>P</i> | <i>Q</i> | <i>R</i> |
|-----|----------|----------|----------|
| (A) | 1 | 2 | 3 |
| (B) | 3 | 1 | 2 |
| (C) | 2 | 1 | 3 |
| (D) | 1 | 3 | 2 |

52. Match **Column – I** with **Column – II** and select the correct answer using the codes given below.

Column – I	Column – II
------------	-------------

- | | |
|---|------------------------|
| P. A line Segment joining the corner of the triangle to the mid point of the opposite side of the triangle is called | 1. Circumcentre |
| Q. A line Segment from the corner of the triangle and perpendicular to the opposite side of the triangle is called | 2. Median |
| R. The perpendicular bisector of the sider of the triangles passes through same point is called | 3. Altitude |

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- | | <i>P</i> | <i>Q</i> | <i>R</i> |
|-----|----------|----------|----------|
| (A) | 2 | 3 | 1 |
| (B) | 1 | 2 | 3 |
| (C) | 3 | 1 | 2 |
| (D) | 2 | 1 | 3 |

53. Match **Column – I** with **Column – II** and select the correct answer using the codes given below.

Column – I	Column – II
------------	-------------

- | | |
|--|------------------|
| P. Any point lie on y-axis | 1. (2, 0) |
| Q. Graph of $2x + 5y = 10$ meet x-axis at | 2. (5, 0) |
| R. The solution of $4x - 5y = 8$ is | 3. (0, y) |

Code :

- | | <i>P</i> | <i>Q</i> | <i>R</i> |
|-----|----------|----------|----------|
| (A) | 2 | 3 | 1 |
| (B) | 3 | 1 | 2 |
| (C) | 3 | 2 | 1 |
| (D) | 1 | 2 | 3 |

54. Which of the following statement/s is/are **True(T)** or **False(F)** ?

- (i) There are finite rational number between 1 and 2.
- (ii) Degree of zero polynomial is not defined.
- (iii) $(\sqrt{5})^2 - (\sqrt{2})^2$ is rational number.

Code :

- (i) (ii) (iii)**
- (A) T F F
 - (B) T T T
 - (C) F F T
 - (D) F T T

55. Which of the following statement/s is/are **True(T)** or **False(F)** ?

- (i) $(-1, 1)$ and $(1, -1)$ have same quadrant .
- (ii) Every linear polynomial in one variable have only one zero.
- (iii) Degree of cubic polynomial is 3.

Code :

- (i) (ii) (iii)**
- (A) T F F
 - (B) T T T
 - (C) F T T
 - (D) F T F

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56. Which of the following statement/s is/are **True(T)** or **False(F)** ?

- (i) A triangle cannot have more than one right angle.
- (ii) ASA congruency is an axiom.
- (iii) The coefficient of x^3 in $x^3 + 2x^2 + 1$ is 2.

Code :

(i) (ii) (iii)

- (A) T F F
- (B) T T F
- (C) F F T
- (D) F T F

Paragraph for Questions 57 & 58

The system of linear equation is given as $x + 2y + 7 = 0$, $2x + ky + 14 = 0$.

Based on above equation, answer the following questions.

57. If the given system of linear equation has infinitely many solution, then the value of k is :

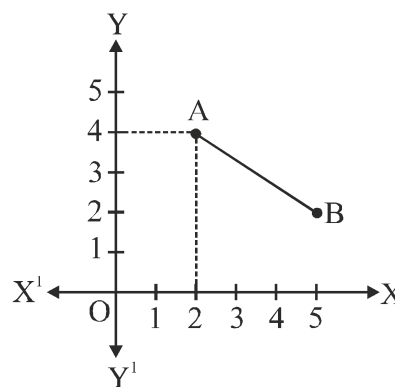
- (A) 1
- (B) 2
- (C) -4
- (D) 4

58. If $k = 2$, then the set of linear equation has :

- (A) No solution
- (B) Infinite solution
- (C) Unique solution
- (D) Insufficient data

Paragraph for Questions 59 & 60

From the following graph, answer the following questions.



59. Distance of point A from origin is :

- (A) 20 unit
- (B) $\sqrt{20}$ unit
- (C) $5\sqrt{2}$ unit
- (D) $2\sqrt{4}$ unit

60. Distance of point B from y-axis is :

- (A) 29 unit
- (B) $\sqrt{29}$ unit
- (C) 5 unit
- (D) 2 unit

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PART V : LOGICAL REASONING & IQ

This section contains 10 Multiple Choice Questions (Q : 61 to Q : 70). Each question has four choices (A), (B), (C) and (D) out of which ONLY ONE is correct.

Direction (61-62) : *In each of the following questions, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern and replace the question mark in the given series.*

61. 120, 99, 80, 63, 48, ?

- (A) 35
- (B) 38
- (C) 39
- (D) 40

62. 1, 2, 3, 6, 9, 18, ?, 54

- (A) 18
- (B) 27
- (C) 36
- (D) 81

63. Rasik walked 20m towards North. Then he turned right and walks 30m. Then he turns right and walks 35m. Then he turns left and walks 15m. Finally he turns left and walks 15m. How far and in which direction is he from the starting point ?

- (A) 15m West
- (B) 30m East
- (C) 30m West
- (D) 45m East

64. One morning after sunrise, Suresh was standing facing a pole. The shadow of the pole falls exactly to his right hand. So which direction was he facing ?

- (A) East
- (B) South
- (C) West
- (D) Data is inadequate

65. Pariniti ranked 17th place from the top and 28th place from the bottom among those who made it to the final round of Miss India Contest. 14 girls failed in the previous round. How many girls enrolled in the contest ?

- (A) 55
- (B) 56
- (C) 57
- (D) 58

66. In a queue of students facing North, Ayesha and Anisha are standing at 10th and 8th position from the left and right end respectively. If another student Ariva who is 12th position from the left end is exactly in between Ayesha and Anisha, then find the position of Ayesha from right end ?

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- (A) 10th
 (B) 12th
 (C) 8th
 (D) 15th
67. If the signs + and ÷ and the numbers 2 and 4 are interchanged, which one of the following four equations would be correct ?
- (A) $4 \div 2 + 3 = 6$
 (B) $2 + 4 \div 3 = 3$
 (C) $4 + 2 \div 6 = 1.5$
 (D) $2 + 4 \div 6 = 8$
68. In the question below consists of a question and two statements numbered I and II are given. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give an appropriate answer.
- Question:-** What will be the total weight of 10 poles, when each pole is of equal weight ?
- Statement-I :** One-fourth of the weight of each pole is 5 kg.
- Statement-II :** The total weight of three wooden boxes is 20 kilograms more than the total weight of two poles.
- (A) The data in statement-I alone is sufficient to answer the question.
 (B) The data in statement-II alone is sufficient to answer the question.

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- (C) The data in statement-I and statement-II together are sufficient to answer the questions.
 (D) The data in neither statement-I nor statement-II are sufficient to answer the questions.

Direction (69-70) : *P, Q, R, S, T, U, V and W are sitting around the circle and are facing the centre:*

P is second to the right of T who is the neighbour of R and V.

S is not the neighbour of P and U.

V is the neighbour of U.

Q is not between S and W.

W is not between U and S.

69. Which two of the following are not neighbours ?
- (A) RV
 (B) UV
 (C) RP
 (D) TV
70. Which one is immediate right to the V ?
- (A) P
 (B) U
 (C) R
 (D) T

Space for rough work

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