



MSAT – 2026

(MAHARISHI SCHOLARSHIP CUM ADMISSION TEST)

For Students presently in Class – 10 (JEE)

(going to class – 11 in 2027)

SAMPLE PAPER

Disclaimer: This is a sample paper provided for practice purposes only. The level of difficulty, type of questions, and total number of questions may vary in the actual examination.

General Instructions:

Time: 180 minutes

Maximum Marks: 210

- Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.
- Do not start filling the OMR sheet before the announcement from the invigilator.
- Do not keep the OMR sheet exposed to others.
- Shade the correct answers only in the OMR sheet given. Do not write or mark answers or symbols (Like ✓, •, X ...) anywhere in the questions paper.
- You are allowed to carry this Question Paper Booklet after the exam.
- Kindly ensure to submit your OMR answer sheet to the invigilator after the Exam.
- Use only blue or black ball point Pen or Pencil to fill all the information on the OMR sheet and for giving responses.
- Students need to write their registration number in the space provided for the same on the OMR.
- Any usage of Electronic gadgets like Mobile Phones, Calculator, Digital Watch etc....is strictly prohibited.
- Multiple markings will be treated as invalid response.
- Do not fold the OMR sheet.
- This Question Paper booklet contains **4 Sections**.

Section	Subject	Question No.	Marking Scheme for each questions	
			Correct Answer	Wrong Answer
I	MENTAL ABILITY	1 to 30	+1	0
II	MATHS	1 to 30	+3	- 1
III	PHYSICS	1 to 15	+3	- 1
IV	CHEMISTRY	1 to 15	+3	- 1

Name of the Candidate : _____

Registration Number : _____

MAT**Section – I****Single Answer Questions**

- Starting from a Point X, Ramu walked 20 m towards South. He turned left and walked 30 m. He then turned left and walked 20 m. He again turned left and walked 40 m and reached a point Y. How far and in which direction is the point Y from the point X.
(A) 20 m west (B) 10 m East (C) 10 m North (D) 10 m West
- Going 50m to the south of her house, Latha turns left and goes another 20m. Then, turning to the North, she goes 30m and then starts walking to her house. In which direction is she walking now?
(A) North-west (B) North (C) South-East (D) East
- Which of the following diagrams indicates the best relation between Sweets, Rasagulla and Apple?
(A)  (B) 
(C)  (D) 
- Which of the following diagrams indicates the best relation between Mammal, Cow and Bat?
(A)  (B) 
(C)  (D) 
- Find the appropriate word that fit in the place of question mark, Paw : Cat : : Hoof : ?
(A) Horse (B) Lion (C) Lamb (D) Elephant
- Find the appropriate word that fit in the place of question mark, Gun : Bullet : : Chimney : ?
(A) Ground (B) House (C) Roof (D) Smoke
- Choose the option which does not belong with the others.
(A) Cornea (B) Retina (C) Pupil (D) Vision
- Choose the option which does not belong with the others.
(A) Core (B) Seeds (C) Pulp (D) Slice
- In a queue of children, Ajay is fifth from the left and Sunil is sixth from the right. When they Inter change their places among themselves, Ajay becomes thirteenth from the left. Then, what will be Sunil's position from the right?
(A) 8th (B) 14th (C) 15th (D) 16th
- Ravi is 7 ranks ahead of Sumit in a class of 39. If Sumit's rank is seventeenth from the last, what is Ravi's rank from the start ?
(A) 14 (B) 15 (C) 16 (D) 17

11. Given below five figures marked (1), (2), (3), (4) and (5), four are similar in a certain manner. However, one figure is not like the other four. Choose the figure which is different from the rest.



- (1) (2) (3) (4) (5)
(A) 1 (B) 2 (C) 3 (D) None of the above

12. If in a certain language, SHIFT is coded as RFFBO, which word would be coded as LKUMB?
(A) MLVNC (B) KJTLA (C) MJVLC (D) MMXQG
13. In a certain code, PAPER is written as SCTGW. How is MOTHER written in that code?
(A) ORVLGW (B) PQVJGT (C) PQXJJT (D) PQXKJV
14. In a certain code FLOWER is coded as 36 and SUNFLOWER is coded as 81, then how to code FOLLOWS?
(A) 42 (B) 49 (C) 63 (D) 36

Directions (Q.No.15 – 17) Read following information carefully and answer these questions:

- i. 'M % N' means M is the husband of N.
iii. 'M @ N' means M is the mother of N.

- ii. 'M \$ N' means M is the daughter of N.

15. If 'A @ D @ F % N' is given, which is not correct given statement?
(A) F is the son of D (B) D is mother-in-law of N
(C) N is the daughter of D (D) F is the husband of N
16. Which is exactly correct 'A is mother-in-law of C'?
(A) D % A @ M % C (B) A @ M @ C
(C) M % C \$ A (D) None of these
17. In which of the following meaning 'P is the son of Z'?
(A) Z % Y @ P (B) Z @ P % Y (C) Z @ P (D) None of these
18. Pointing to a boy, Deepa said "He is the son of my grandfather's only son". How is boy related to Deepa?
(A) Brother (B) Cousin (C) Sister (D) Data inadequate
19. Find the next number 6, 20, 56, 176, ___?
(A) 416 (B) 525 (C) 256 (D) None of the above
20. Find the missing number in the series 625, 1, 1296, 0, __, 1, 4096, 16?
(A) 42 (B) 49 (C) 2401 (D) 75
21. Find the missing number in the series 0, 5, 18, 43, 84, 145, ?
(A) 195 (B) 225 (C) 230 (D) 258

Direction (Q.No.22 – 24): A cube is painted with different colour (Red, Yellow, Green, Blue, Orange, and Violet) on each side. When Orange is on the left, Yellow is facing you and Green is at the bottom. When Violet is on the top, Blue is on the right and Red is facing you. Blue and Orange are opposite.

22. When Orange is on the top, Violet is on the left, then which colour is facing you?
(A) Yellow (B) Blue
(C) Green (D) Cannot be determined

23. Which colour is opposite of Violet?

- (A) Red
(C) Green

- (B) Yellow
(D) Cannot be determined

24. When Green is on the top and Blue is on the right then which colour is at the bottom?

- (A) Orange (B) Red (C) Yellow (D) Violet

Direction (Q.No.25 – 27) A committee to monitor the effects of new policies on AIDS is to be formed from 3 Psychologists (Priya, Prem, Poonam), 3 Physicians (Mohit, Mauli, Megha), 2 Social Workers (Sonu, Shikha), and 3 Economists (Elesh, Esha, Emy). The committee must include exactly 2 Psychologists, 2 Physicians, 1 Social Worker, and 1 Economist. The individuals who make up the committee or group can vary from one meeting to the next. Prem cannot meet in the second half of any month. Furthermore, Megha cannot be paired with Sonu because they do not get along, and Poonam cannot be on any committee in which Sonu is a member. Mauli cannot meet on Wednesdays.

25. How many committees can be formed if Sonu is a member?

- (A) 2 (B) 3 (C) 9 (D) 10

26. How many committees that include Elesh and Shikha and that will meet on Tuesday, April 11, can be formed?

- (A) 3 (B) 9 (C) 12 (D) 18

27. How many groups can be formed that include Priya, Poonam, and Shikha, and that will meet on Wednesday, January 8?

- (A) 3 (B) 6 (C) 9 (D) 12

Direction (Q.No.28 – 30) In each question given below are Statements followed by conclusions numbered. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which of the given conclusions logically follows from the given Statements, disregarding commonly known facts.

28. **Statement:** I. Some pastries are toffees
II. All toffees are chocolates

Conclusions: I. Some chocolates are toffees
II. Some toffees are not pastries

- (A) If only conclusion I follows
(C) If neither I nor II follows

- (B) If only conclusion II follows
(D) If both I and II follow

29. **Statement:** I. All tigers are ships
II. Some ships are cupboards

Conclusions: I. Some ships are tigers
II. Some cupboards are not ships

- (A) If only conclusion I follows
(C) If neither I nor II follows

- (B) If only conclusion II follows
(D) If both I and II follow

30. **Statement:** I. All flowers are stems
II. All stems are roots

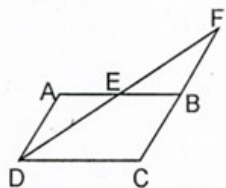
Conclusions: I. Some roots are not flowers
II. All stems are flowers

- (A) If only conclusion I follows
(C) If neither I nor II follows

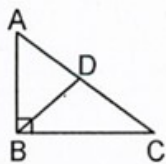
- (B) If only conclusion II follows
(D) If both I and II follow

MATHS**Section – II****Single Answer Questions**

- For what value of k do the system of equations $3(k-1)x + 4y = 24$ and $15x + 20y = 8(k+13)$ have infinite solutions?
(A) 1 (B) 4 (C) 2 (D) 3
- If the HCF of the polynomials $f(x)$ and $g(x)$ is $4x - 6$, then $f(x)$ and $g(x)$ could be
(A) $2, 2x - 3$ (B) $12x - 18, 2$ (C) $4x - 6, 2x - 3$ (D) $2(2x-3)^2, 4(2x - 3)$
- In the given figure, ABCD is parallelogram, CB is extended to F and the line joining D and F intersects AB at E. Then, which one is true?

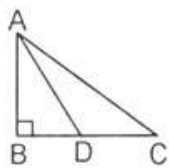


- (A) $\frac{AD}{AE} = \frac{BE}{BF}$ (B) $\frac{AD}{AE} = \frac{CD}{CF}$ (C) $\frac{BF}{BE} = \frac{CD}{CF}$ (D) None of these
- For what integral values of n , $2^n \times 5^n$ ends with 5?
(A) 0 (B) 1 (C) no value of x (D) 2
 - If degree of both $f(x)$ and $[f(x) + g(x)]$ is 18, then degree of $g(x)$ must be
(A) > 18 (B) equal to 18 (C) ≤ 18 (D) none of these
 - In a triangle PQR, AB is parallel to QR and divides the triangle into two equal areas. Then $PQ : AQ =$
(A) $\sqrt{2} : 1$ (B) $1 : (\sqrt{2} - 1)$ (C) $1 : (\sqrt{2} + 1)$ (D) $\sqrt{2} : \sqrt{2} - 1$
 - In a test of 50 questions, each correct answer fetches two marks and each wrong answer fetches $-\frac{1}{2}$ marks. A candidate attempted all the questions and scores 40 marks. How many questions did he attempt correctly?
(A) 24 (B) 26 (C) 22 (D) 20
 - In the figure $\angle B = 90^\circ$, $AD = 15$ and $DC = 20$. If BD is the bisector of $\angle ABC$, what is the perimeter of the triangle ABC?



- (A) 74 (B) 84 (C) 91 (D) 105

9. In the figure ABC, $\angle B = 90^\circ$, $AB : BD : DC = 3 : 1 : 3$. If $AC = 20\text{cm}$, then what is the length of AD (in cm)?

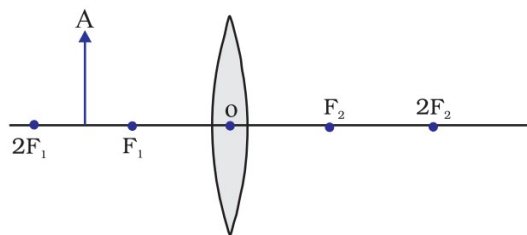


- (A) $5\sqrt{2}$ (B) $6\sqrt{3}$ (C) $4\sqrt{5}$ (D) $4\sqrt{10}$
10. If $h(x) = x^2 + x$ and $g(y) = y^3 - y$, then HCF of $h(b) - h(a)$ & $g(b) - g(a)$ is
 (A) $a + b$ (B) $b - a$ (C) $b^2 + a^2$ (D) $b^2 + ab + a^2$
11. A father's present age is seven years less than 30 times of what his son's age was 20 years ago. Also, the father's present age is 31 years more than his son's present age. Find the sum of their present ages in years
 (A) 72 (B) 73 (C) 74 (D) 75
12. A positive integer n when divided by 5, gives 2 as remainder. What will be the remainder when $(3n^2 + 1)$ is divided by 5
 (A) 1 (B) 2 (C) 3 (D) 4
13. The value of k for which the lines $3x + 4y = 5$, $5x + 4y = 4$, and $kx + 4y = 6$ meet at a point is
 (A) 1 (B) 2 (C) 3 (D) 4
14. The roots of the equation $3^{2x} - 10(3^x) + 9 = 0$ are a, b then $(a + b)^2$
 (A) 100 (B) 4 (C) 81 (D) 181
15. Let α, β be the roots of $x^2 - 5x + 3 = 0$ with $\alpha > \beta$. If $a_n = \alpha^n - \beta^n$ for $n \geq 1$, then the value of $\frac{a_8 + 3a_6}{a_7}$ is
 (A) 2 (B) 3 (C) 4 (D) 5
16. If $(x^2 - px + 1)$ is a factor of $(ax^3 + cx + d)$ where a, p, c, d are real constants with $a, c, d \neq 0$, then
 (A) $a^2 - d^2 = ac$ (B) $a^2 - c^2 = ab$ (C) $a^2 + d^2 = -ab$ (D) None of these
17. If $x^2 = y + z$, $y^2 = z + x$, $z^2 = x + y$ then the value of $\frac{1}{x+1} + \frac{1}{y+1} + \frac{1}{z+1}$ is
 (A) 1 (B) 2 (C) 3 (D) 0
18. In $\triangle ABC \sim \triangle QRP$, $\frac{ar(ABC)}{ar(PQR)} = \frac{9}{4}$, $AB = 18\text{ cm}$ and $BC = 15\text{ cm}$, then PR is equal to
 (A) 8 cm (B) 10 cm (C) 12 cm (D) $\frac{20}{3}\text{ cm}$
19. If the roots of $2x^3 - 3x^2 + 6x - 4 = 0$ are α, β, γ , then find the value of $\alpha^2\beta^2 + \beta^2\gamma^2 + \gamma^2\alpha^2$
 (A) 1 (B) 2 (C) 3 (D) 4

20. Find the area of quadrilateral formed by $A(-2, -3), B(1, 4), C(3, -3), D(2, -1)$
- (A) $\frac{25}{2} \text{ unit}^2$ (B) $\frac{45}{2} \text{ unit}^2$ (C) 25 unit^2 (D) 45 unit^2
21. In $\triangle ABC$, $AB : AC = 4 : 3$ and M is the midpoint of BC. E is a point on AB and F is a point on AC such that $AE : AF = 2 : 1$. Also EF and AM intersect at G with $GF = 36 \text{ cm}$. Find the length of GE
- (A) 18 cm (B) 36 cm (C) 54 cm (D) 72 cm
22. If α and β are the roots of the equation, $7x^2 - 3x - 2 = 0$, then value of $\frac{\alpha}{1-\alpha^2} + \frac{\beta}{1-\beta^2}$ is equal to
- (A) $\frac{27}{32}$ (B) $\frac{1}{24}$ (C) $\frac{3}{8}$ (D) $\frac{27}{16}$
23. The sum of all real values of x satisfying the equation $(x^2 - 5x + 5)^{(x^2 + 4x - 60)} = 1$ is
- (A) 6 (B) 5 (C) 3 (D) -4
24. If a vertex of a triangle is (1,1) and the midpoints of two sides through this vertex are (-1,2) and (3,2) then the centroid of the triangle is
- (A) $\left(-1, \frac{7}{3}\right)$ (B) $\left(\frac{-1}{3}, \frac{7}{3}\right)$ (C) $\left(1, \frac{7}{3}\right)$ (D) $\left(\frac{1}{3}, \frac{7}{3}\right)$
25. The number of integral values of m so that the abscissa of point of intersection of lines $3x + 4y = 9$, and $y = mx + 1$ is also integer is
- (A) 1 (B) 2 (C) 3 (D) 0
26. Find the largest number which divides 62, 132 and 237 to leave the same remainder in each case
- (A) 35 (B) 31 (C) 41 (D) 43
27. Find the number of decimal places after which decimal expansion of $\frac{23}{2^6 \times 5^4}$ will terminate
- (A) 4 (B) 6 (C) 10 (D) 24
28. A point P on y – axis is equidistant from the points A(-5,4) and B(3,-2). Its co-ordinates is
- (A) $\left(0, \frac{4}{3}\right)$ (B) $\left(0, \frac{3}{4}\right)$ (C) $\left(0, \frac{3}{7}\right)$ (D) $\left(0, \frac{7}{3}\right)$
29. The line $3x + 4y - 12 = 0$ intersects x – axis at a point A and y – axis at point B. If O is origin then find co ordinates of circumcentre of triangle AOB
- (A) (0,0) (B) $\left(\frac{4}{3}, 1\right)$ (C) (1,1) (D) $\left(2, \frac{3}{2}\right)$
30. If $\frac{5x-3}{x} + \frac{5y-3}{y} + \frac{5z-3}{z} = 0$, then value of $\frac{1}{x} + \frac{1}{y} + \frac{1}{z}$ is
- (A) 0 (B) 1 (C) 4 (D) 5

PHYSICS**Section – III****Single Answer Questions**

- Sunlight is incident on a concave mirror, parallel to its principal axis. The image is formed at a distance of 24 cm from the pole. Find the radius of curvature of the mirror.
(A) 12 cm (B) 24 cm (C) 48 cm (D) 18 cm
- A ray of light travelling in air is incident on the plane surface of a transparent medium. The angle of incidence is 45° and the angle of refraction is 30° . Find the refractive index of the medium.
(A) $\sqrt{3}$ (B) $\sqrt{2}$ (C) 2 (D) 2
- The near point of an elderly person is 50 cm from the eye. The power of the corrective lens that will correct his vision is
(A) 2 D (B) -2D (C) 4D (D) -4D
- An object is placed in front of a converging lens at a distance between F_1 and $2F_1$. The image produced by the lens :



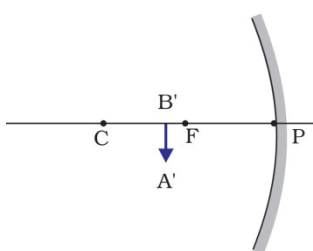
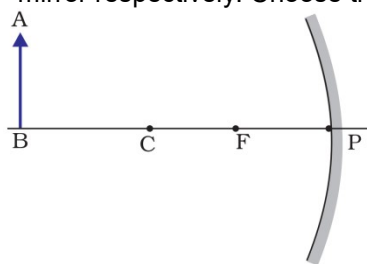
- (A) Appears beyond $2F_2$ and diminished

(B) Appears beyond $2F_2$ and enlarged.

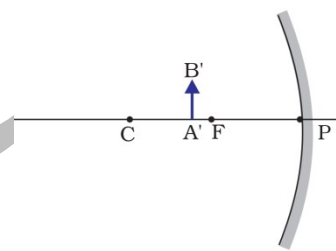
(C) Appears between F_2 and $2F_2$ and diminished

(D) Appears between F_2 and $2F_2$ and enlarged.
- The refractive indices of glass and water with respect to air are $3/2$ and $4/3$ respectively. Find the refractive index of water with respect to glass
(A) $9/8$ (B) $8/9$ (C) $1/8$ (D) 8
- What is the power of a diverging lens of focal length 25 cm ?
(A) 4 D (B) -4D (C) 2D (D) -2D
- When a white light is passed through prism, which colour deviates the least?
(A) Violet (B) Red (C) Green (D) Yellow
- For a prism of refracting angle $A = 60^\circ$, the refractive index $\mu = \sqrt{2}$, the angle of minimum deviation suffered by a monochromatic light ray is given by:
(A) 30° (B) 45° (C) 60° (D) 90°
- Which of the following statement is correct regarding human eye
(A) Image is formed on cornea and is inverted
(B) Image is formed on retina and is erect
(C) Image is formed on cornea and is erect
(D) Image is formed on retina and is inverted
- A 8 cm high object is placed at a distance of 120 cm from a concave lens of focal length 40 cm. Find the size and nature of the image.
(A) 2cm and erect (B) 4 cm and erect
(C) 2 cm and inverted (D) 4 cm and inverted

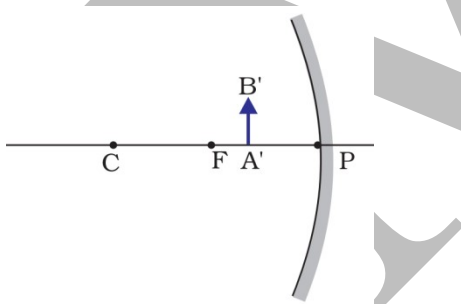
11. The eye defect in which a person is not able to see distant object clearly is called
(A) Hyper metropia (B) Astigmatism (C) Presbyopia (D) Myopia
12. Where should an object be placed before a concave mirror of focal length 30 cm so that a real image is formed at a distance of 60 cm from mirror ?
(A) 40 cm (B) 20 cm (C) 60 cm (D) 80 cm
13. The muscles of a normal eye are least strained when the eye is focused on an object
(A) far away from the eye (B) very close to the eye
(C) at about 25 cm from the eye (D) at about 1 m from the eye
14. The far point of a person suffering from myopia is 4 metres from the eye. Find the power of the corrective lens that will correct his vision.
(A) 0.5D (B) -0.5D (C) 0.25D (D) -0.25D
15. An object AB is placed in front of a concave mirror as shown. C, F, P are center, focus and pole of the mirror respectively. Choose the most appropriate image A'B' produced by the mirror :



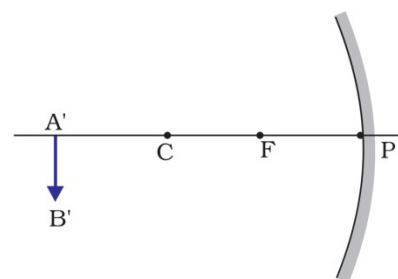
(A)



(B)



(C)



(D)

CHEMISTRY**Section – IV****Single Answer Questions**

1. The shiny finish on the walls after white washing is due to the formation of
(A) Calcium oxide (B) Calcium hydroxide
(C) Calcium carbonate (D) Calcium sulphate
2. Consider the following reaction $2FeSO_4 \xrightarrow{\Delta} Fe_2O_3 + X + Y$. X and Y are respectively
(A) $Fe_2(SO_4)_3$ and SO_2 (B) $Fe_2(SO_4)_3$ and SO_3
(C) SO_2 and SO_3 (D) FeS and SO_2
3. Which among the following statements are correct with respect to electrolysis of water
(i) H_2 is liberated at cathode (ii) O_2 is liberated at anode
(iii) H_2 is liberated at anode (iv) O_2 is liberated at cathode
(A) (i) and (ii) (B) (i) and (iii) (C) (ii) and (iv) (D) (iii) and (iv)
4. Which among the following is an example of thermal decomposition reaction
(A) $2KClO_3 \rightarrow 2KCl + 3O_2$ (B) $CaCO_3 \rightarrow CaO + CO_2$
(C) $Na_2CO_3 \rightarrow Na_2O + CO_2$ (D) All the above
5. A reducing agent
(A) loses electrons (B) gains electrons
(C) neither loses nor gains electrons (D) both loses and gains electrons
6. Oxalic acid is present in
(A) Tamarind (B) Tomato (C) Orange (D) Apple
7. Bleaching powder is manufactured by passing chlorine gas through
(A) Quick lime (B) lime stone (C) slaked lime (D) Calcium chloride
8. Which among the following can have pH around 10
(A) gastric juice (B) lemon juice (C) milk of magnesia (D) Curd
9. Which among the following is used to remove permanent hardness of water?
(A) Baking soda (B) Washing soda (C) Bleaching Powder (D) Gypsum
10. Which among the following reactions produce a salt
(A) Acid + Base (B) Metal oxide + Acid
(C) Metal Carbonate + Acid (D) All the above
11. Which among the following does not conduct electricity
(A) Aluminium (B) Silver (C) Graphite (D) None of the above
12. The metal which does not react with water at all is
(A) Copper (B) Silver (C) Gold (D) All the above
13. The correct order of decreasing reactivity is
(A) $Cu > Fe > Zn > Al > Mg$ (B) $Mg > Al > Zn > Fe > Cu$
(C) $Mg > Zn > Fe > Al > Cu$ (D) $Al > Fe > Zn > Mg > Cu$

14. Identify the incorrect statement regarding Ionic compounds
- (A) They are soluble in non polar solvents (B) They have high melting point
(C) They conduct electricity in molten state (D) They are soluble in water
15. "Aqua regia" is a mixture of two concentrated acids
- (A) HNO_3 and HCl in the ratio 1 : 3 (B) HCl and HNO_3 in the ratio 1 : 3
(C) HNO_3 and H_2SO_4 in the ratio 1 : 3 (D) H_2SO_4 and HNO_3 in the ratio 1 : 3

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MAHARISHI

Answer key – Class - 10**MAT**

1.D	2.A	3.A	4.B	5.A
6.D	7.D	8.D	9.B	10.C
11.D	12.D	13.C	14.B	15.C
16.A	17.B	18.D	19.A	20.C
21.C	22.C	23.B	24.B	25.B
26.B	27.A	28.A	29.A	30.C

MATHS

1.C	2.D	3.D	4.C	5.C
6.D	7.B	8.B	9.D	10.B
11.D	12.C	13.A	14.B	15.D
16.A	17.A	18.B	19.C	20.A
21.C	22.D	23.C	24.C	25.B
26.A	27.B	28.D	29.D	30.D

PHYSICS

1.C	2.B	3.A	4.B	5.B
6.B	7.B	8.A	9.D	10.A
11.D	12.C	13.A	14.D	15.A

CHEMISTRY

1. C	2.C	3.A	4.D	5.A
6.B	7.C	8.C	9.B	10.D
11.D	12.D	13.B	14.A	15.A