MSAT – 2025

(MAHARISHI SCHOLARSHIP CUM ADMISSION TEST)

Class – 08th going to 09th

SAMPLE PAPER

FIITJEE
CHENNAI CENTRE

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.

Time: 3 Hour | Maximum Marks: 155

General Instructions:

- Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.
- You are not allowed to leave the examination hall before the end of test.
- 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.
- This booklet is your Question Paper.
- This Question Paper booklet contains 5 Sections. All Section contains Part A.

Section	Subject	Types of Questions	Number of Questions	Marking Scheme
I	MAT	Single Answer Questions	20	+1,0
II	MATHS	Single Answer Questions	15	+3,-1
III	PHYSICS	Single Answer Questions	10	+3,-1
IV	CHEMISTRY	Single Answer Questions	10	+3,-1
V	BIOLOGY	Single Answer Questions	10	+3,-1

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USEFUL DATA

PHYSICS

Acceleration due to gravity	: g = 10 m/s^2
Planck constant	: h = 6.6 × 10^{-34} $J-s$
Charge of electron	: e = 1.6 × 10^{-19} C
Mass of electron	: $m_e = 9.1\times10^{-31}$ kg
Permittivity of free space	: $\varepsilon_0 = 8.85\times10^{-12}$ $C^2/N-m^2$
Density of water	: $\rho_{water} = 10^3$ kg/m^3
Atmospheric pressure	: $Pa = 10^5$ N/m^2
Gas constant	: R = 8.314 J
K^{-1} mol^{-1}	

CHEMISTRY

Gas Constant	R =	8.314 J $K^{-1}mol^{-1}$
	=	0.0821 Lit atm
$K^{-1}mol^{-1}$		
	=	1.987 ≈2 Cal
$K^{-1}mol^{-1}$		
Avogadro's Number N_a	=	6.023 × 10^{23}
Planck's constant h	=	6.625 ×10^{-34} $J.s$
	=	6.625×10^{-27} $erg.s$
1 Faraday	=	96500 coulomb
1 calorie	=	4.2 joule
1 amu	=	1.66 ×10^{-27} kg
1 eV	=	1.6×10^{-19} J

Atomic No: H = 1, He = 2, Li = 3, Be = 4, B = 5, C = 6, N = 7, O = 8, F = 9, Ne = 10, Na = 11, Mg = 12, Si = 14, Al = 13, P = 15, S = 16, Cl = 17, Ar = 18, K = 19, Ca = 20, Cr = 24, Mn = 25, Fe = 26, Co = 27, Ni = 28, Cu = 29, Zn = 30, As = 33, Br = 35, Ag = 47, Sn = 50, I = 53, Xe = 54, Ba = 56, Pb = 82, U = 92.

Atomic masses: H = 1, He = 4, Li = 7, Be = 9, B = 11, C = 12, N = 14, O = 16, F = 19, Na = 23, Mg = 24, Si = 28, Al = 27, P = 31, S = 32, Cl = 35.5, K = 39, Ca = 40, Cr = 52, Mn = 55, Fe = 56, Co= 59, Ni = 58.7, Cu = 63.5, Zn = 65.4, As = 75, Br = 80, Ag = 108, Sn = 118.7, I = 127, Xe = 131, Ba = 137, Pb = 207, U = 238.

Name : _____

Registration Number : _____

MAT Section – I

Part – A
Single Answer Questions

Directions (Q.No.1-3): What should come in place of the question mark (?) in the following number series?

1. 7,9,13,21,37,?
(A) 58 (B) 63 (C) 69 (D) 72

2. 9,8,10,18,11,1,12,64, 64
(A) 28 (B) 36 (C) 25 (D) 32

3. 9 11 15 1 39 71
(A) 29 (B) 23 (C) 21 (D) 27

4. In this letter series, some of the letters are missing which are given in that order as one of the alternatives below it. Choose the correct alternative.
c _ b _ bccb c_ abc__ ab
(A) caabcbcb (B) bbbaabcb (C) baabbbaa (D) cabcbbcb

Directions (Q.No.5 - 6): In each of the following questions, various terms of an alphabet series are given with one or more terms missing as shown by (?). Choose the missing terms out of the given alternatives.

5. AB, DEF, HIJK, ?, STUVWX
(A) LMNO (B) LMNOP (C) MNOPQ (D) QRSTU

6. ADVENTURE, DVENTURE, DVENTUR, ?, VENTU
(A) DVENT (B) VENTURE (C) VENTUR (D) DVENTU

7. Identify the correct answer containing letters which will most appropriately fill in the blanks.
aba _ ab _ b _ ba
(A) a, a, a, b (B) b, a, b, a (C) b, a, a, b (D) a, b, b, b

8. In a row at a bus stop, Amit is 7th from the left and Prakash is 9th from the right. Both of them interchange their positions and thus Amit becomes 11th from the left. How many people are there in that row?
(A) 18 (B) 19 (C) 21 (D) 20

9. Kaya, Kiara, Kamini, Seema, Sarita and Suman are standing in a row. Kiara is between Suman and Seema. Sarita is between Kaya and Kamini. Kaya does not stand next to either Suman or Seema. Kamini does not stand next to Seema. Suman is between which of the following pairs of persons?
(A) Kamini and Kiara (B) Kaya and Kamini
(C) Kaya and Kiara (D) 5eema and Kamini

10. Of the seven members of a panel sitting in a row, M is to the left of P, but on the right of Q. O is on the right of S, but is on the left of N who is to the left of R. Which member is sitting in the middle?
(A) M or O (B) O or N (C) S or R (D) P or O

11. How many L's are there which do not have R preceding them and also do not have T following them?
Z Q S T L R M N Q N R T U V X R L T A S L T Q R S L T
(A) 4 (B) 3 (C) 2 (D) 1

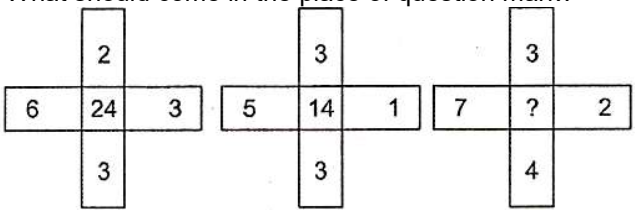
Directions (Q.No.12 - 13): Read the information given below and answer the following questions. P is the father of R, but R is not his son. T is the daughter of R. U is the wife of P. Q is the brother of R. S is the son of Q. V is the wife of Q. W is the father of V.

12. Who is the grandmother of S?
(A) W (B) P (C) R (D) U

13. Who is the son of U?
(A) Q (B) R (C) T (D) S

14. Who is the father - in - law of Q?
(A) R (B) P (C) T (D) w

15. What should come in the place of question mark?



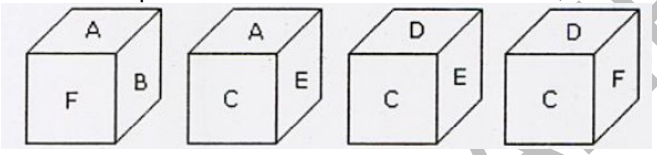
(A) 26 (B) 28 (C) 0 (D) 19

16. Find the missing number from the given responses.

3	4	5
6	7	8
9	1	2
57	11	?

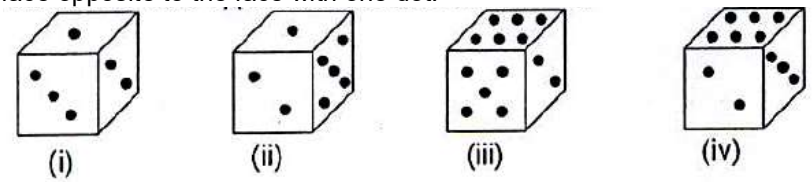
(A) 42 (B) 21 (C) 11 (D) 18

17. From the positions of a cube are shown below, Which letter will be on the face opposite to face with 'A'?



(A) D (B) B (C) C (D) F

18. Four different views of a dice are given as viewed from different angles. Find out the number of dots on the face opposite to the face with one dot.



(A) 6 (B) 5 (C) 4 (D) 3

Direction (Q.No.19): In the following question, find the missing term (?) in the series.

19. 2, 9, 23, 3, 8, 25, 4,?, 27
(A) 7 (B) 29 (C) 23 (D) 26

20. Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it?
H -JH -IJHHI- HH –JH
(A) IHJI (B) HIHI (C) IHIJ (D) HJHJ

MATHS Section – II

Part – A
Single Answer Questions

1. What is the multiplicative identity of rational numbers?
(A) 0 (B) 1 (C) 2 (D) -1

2. Find the value of 1 + 3 + 5 + 7 + ……..+ 43
(A) 441 (B) 400 (C) 484 (D) 529

3. To get a perfect square we should multiply 6075 by ……
(A) 7 (B) 2 (C) 3 (D) 5

4. If a cube has surface area 1350 square units, then what is the volume In cubic units?
(A) 3750 (B) 3872 (C) 3375 (D) 3800

5. The digit in the units place For the cube of the number 1234567 is
(A) 1 (B) 3 (C) 7 (D) 9

6. Find the cube root of - 4913 ?
(A) 17 (B) 27 (C) -17 (D) – 27

7. If the difference between the squares of two consecutive even numbers is 60 then smaller number among them is
(A) 12 (B) 14 (C) 16 (D) 18

8. The length of A rectangle is 2 centimeters more than twice its breadth. Its perimeter is 28 centimeters. The length of rectangle is……
(A) 18 (B) 16 (C) 14 (D) 10

9. A number when added to its half gives 36. find the number?
(A) 24 (B) 26 (C) 28 (D) 22

10. Five times a number increased by three gives 38. Find the number?
(A) 8 (B) 6 (C) 5 (D) 7

11. The number of diagonals that can be drawn in a polygon of 100 sides are:
(A) 4850 (B) 4950 (C) 9900 (D) 8800

12. A number which when divided by 10 leaves a remainder of 9. when divided by 9 leaves a remainder of 8, by 8 leaves a remainder of 7, etc., down to where, when divided by 2, it leaves a remainder of 1. Then the number is
(A) 59 (B) 419 (C) 1259 (D) 2519

13. The sides of a regular polygon of n sides, n> 4, are extended to form a star. The number of degrees at each point of the star is:
(A) $\frac{360}{n}$ (B) $\frac{(n-4)180}{n}$ (C) $\frac{(n-2)180}{n}$ (D) $180-\frac{90}{n}$

14. Two candles of the same height are lighted at the same time. The first is consumed in 4 hours and the second in 3 hours. Assuming that each candle burns at a constant rate, in how many hours after being lighted was the first candle twice the height of the second.
(A) $\frac{3}{4}$hr (B) $1\frac{1}{2}$hr (C) 2hr (D) $2\frac{2}{5}$hr

15. Number of terms in the expansion of $[(a + 3b)^2 (a - 3b)^2]^2$ when simplified are:
(A) 4 (B) 5 (C) 6 (D) 7

PHYSICS Section – III

Part – A
Single Answer Questions

1. An object is going to accelerate if
(A) Balanced forces are acting on it
(B) Unbalanced forces are acting on it
(C) No forces are acting on it
(D) Two equal and opposite forces are acting on it

2. If the relative density of solid is less than one, then
(A) It sinks in water
(B) It floats in water
(C) It sinks in all liquids
(D) It floats in all liquids

3. Car A having mass 100 kg travelling with a velocity of 50 m/s hits another stationary car B of mass 50 kg. After the collision car A attains a new velocity of 30 m/s in the same direction. The velocity of car B after collision is
(A) 20 m/s (B) 30 m/s (C) 40 m/s (D) 50 m/s

4. A body of mass 10 kg having initial velocity 10 ms^{-1} changes to 20 m/s^1 in 10 seconds. What is the force acting on the body?
(A) 10 N (B) 20 N (C) 30 N (D) 15 N

5. How much force should be applied on an area of 24 cm^2 to get a pressure of 1200 Pa?
(A) 0.5N (B) 0.002N (C) 16800N (D) 2.88N

6. An automobile vehicle has a mass of 1500 kg. What must be the force between the road and the vehicle in order to stop the vehicle with a negative acceleration of 1.7 m/s^2?
(A) -2550 N (B) -2340 N (C) -2400 N (D) -2300 N

7. A block of weight 5N is placed on a horizontal table. A person pushes the block from top by exerting a downward force of 3N on it. Find the force exerted by the table on the body.
(A) 4N (B) 8N (C) 2N (D) 7N

8. Action – reaction forces
(A) Act on the same body
(B) Act on different bodies
(C) Act along different lines
(D) Act in the same direction

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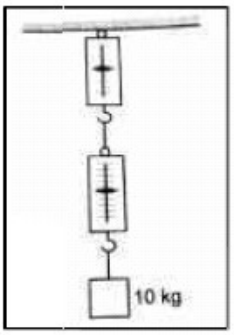
9. A block of mass 10kg is suspended through two light spring balances as shown in the figure



(A) Both the scales will read 10kg
(B) Both the scales will read 5 kg
(C) The upper scale will read 10 kg and the lower zero
(D) The readings may be anything but their sum will be 10 kg

10. A force of 20 N is required to push a car of mass 50kg, slowly at constant speed on a level road. If a force of 50 N is applied, the acceleration of the car (in Ms^{-2}) will be
(A) Zero (B) 0.2 (C) 0.6 (D) 1.0

CHEMISTRY Section – IV

Part – A
Single Answer Questions

1. Cellulose is a condensed polymer of
(A) maltose (B) Fructose (C) Glucose (D) Galactose

2. The Teflon polymer is represented as
(A) PCTFE (B) PTFE (C) PVC (D) PCC

3. Which of the following is not a fibre?
(A) terylene (B) Nylon (C) melamine (D) polychloropropene

4. Nylon-6,6 is prepared from adipic acid and
(A) terephthalic acid (B) ethylene glycol
(C) vinyl chloride (D) hexamethylene diamine

5. Aquaregia is a mixture of
(A) 1 volume of HCl and 4 volumes of HNO_3 (B) 3 moles of HCl and 1 mole of HNO_3
(C) equal volumes of HCl and HNO_3 (D) 1 volume of HNO_3 and 3 volumes of H_2SO_4

6. Which metal melts at our body temperature?
(A) germanium (B) potassium (C) gallium (D) sodium

7. Non metals are generally
(A) malleable (B) ductile (C) sonorous (D) brittle

8. Which of the following is most abundant metal in the earths crust?
(A) Cu (B) Zn (C) Al (D) Fe

9. Which of the following is the least conductor of heat?
(A) Ag (B) Cu (C) Fe (D) Hg

10. Which of the following is semi metal ?
(A) C (B) Ge (C) N_2 (D) Au

BIOLOGY Section – IV

Part – A
Single Answer Questions

1. The Crops which are grown in rainy season are called
(A) Rabi crop (B) Seasonal crop (C) Monsoon crop (D) Kharif crop

2 . Which of the following description is true for describing 'fertiliser'
(A) Used in large quantity (B) Organic in nature
(C) Does not cause pollution (D) Produced in factories

3. Moat,Dhekli and Rahat are different
(A) Traditional methods of cultivation (B) Traditional methods of Weeding
(C) Traditional methods of seed sowing (D) Traditional methods of irrigation

4. Which of the following is a rabi crop?
(A) Rice (B) Mustard (C) Soyabean (D) Maize

5. In today's world, where water is a scarce resource, which among the following irrigation methods is most feasible and sustainable?
(A) Sprinkler system (B) Drip system (C) Tube well (D) Chain pump

6. Consider the following statements about weeding and identify the incorrect one
(A) Weeding is best done during tilling itself
(B) Weeding is the process of growing weed
(C) Weeding is the process of removal of weeds
(D) Weeding is usually done manually or by using weedicides

7. Rhizobium bacteria in the root nodules of leguminous plants help in fixing
(A) Sulphur (B) Oxygen (C) Nitrogen (D) Hydrogen

8. The farm appliance 'Combine' is a combined
(A) Plough and Harvester (B) Seed drill cum Thresher
(C) Harvester and Thresher (D) Harvester cum Sprayer

9. Transfer of seedlings from nursery to main fields is called
(A)Transpiration (B) Transplantation (C) Sowing (D) All of the above

10. Which of the following is a micronutrient?
(A) Zinc (B) Phosphorus (C) Sulphur (D) Calcium

Answer key Class - 08

MAT

1. C	2. D	3. B	4. A	5. C
6. C	7. C	8. B	9. A	10. C
11. D	12. D	13. A	14. D	15.A
16.B	17.A	18.A	19.A	20.A

Mathematics

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

Physics

1.B	2.B	3.C	4.A	5.D
6.A	7.B	8.B	9.A	10.C

Chemistry

1.C	2.B	3.D	4.D	5.B
6.C	7.D	8.C	9.D	10.B

Biology

1.D	2.D	3.D	4.B	5.B
6.B	7.C	8.C	9.B	10.A