MSAT – 2025

(MAHARISHI SCHOLARSHIP CUM ADMISSION TEST)

Class – 07th going to 8th

SAMPLE PAPER

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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): 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 :

1. 4, 7, 12, 19, 28? :
(A) 30 (B) 36 (C) 39 (D) 49

2. 10,100, 200, 310?:
(A) 400 (B) 410 (G) 420 (D) 430

3. AG, FH, KM, PR?
(A) UW (B) VW (C) UX (D) TV

Direction (Q.No.4 - 5): In each of the following questions, there is a certain relationship between two given numbers on one side of : ; and one number is given on another side of : : while another number is to be found from the given alternatives, having the same relationship with this number as the numbers of the given pair bear.

4. 42: 20:: 64:?
(A) 31 (B) 32 (C) 33 (D) 34

5. 121: 12:: 25:?
(A) 1 (B) 2 (G)6 (D) 7

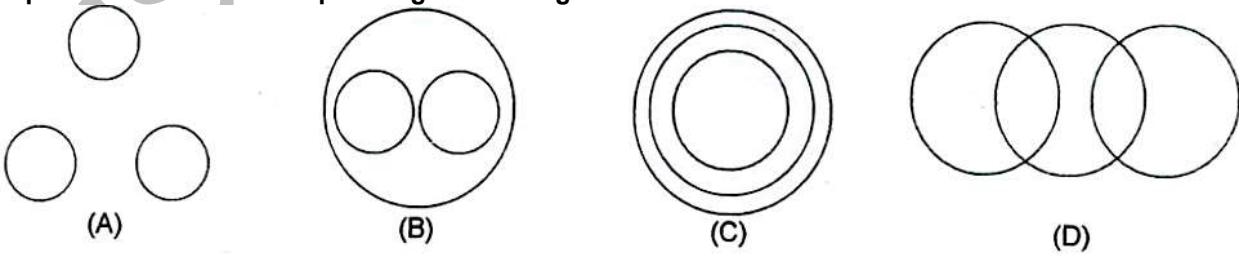
6. If in a certain language, MADRAS is coded as NBESBT, how is BOMBAY coded in that language?
(A) CPNC8X (B) CPNC8Z (C) CPOC8Z (D) None of these

7. In a certain code, BASIC is written as DOULE. How is LEADER written in that code?
(A) NGCFGT (B) NHCGGU (C) OGDFHT (D) OHDGHU

8. A man walks 1 km towards East and then he turns to South and walks 5 km. Again he turns to East and walks 2km, after this he turns to North and walks 9km. Now, how far is he from his starting point:
(A) 3 km (B) 4 km (C) 5 km (D) 7 km

9. P, at Rand S are playing a game of carrom. P, Rand S, Q are partners. S is to the right of R Who is facing west. Then, Q is facing;
(A) North (8) South (C) East (D) West

Directions (Q.No.10 - 11): In each of these questions, select the diagram out of the four that best represents the relationship among the items given.



10. Mammal, Cow, Man
11. Keyboard, Monitor, Mouse

Directions (Q.No.12 - 13): Three of the following four are alike in a certain way and so form a group.Which is the one that does not belong to that group.

12. (A) Physics (B) Chemistry (C) Geography (D) Botany

13. (A) DEHG (B) RSVU (C) LMQP (D) JKNM

Directions (Q.No.14 - 15): In each of these questions, a word has been given, followed by four other words, one of which cannot be formed by using the letters of the given word. Find that word.

14. VARIEGATED
(A) TRAVEL (B) TRADE (C) GREAT (D) RIGVEDA

15. REASONABLE
(A) BRAIN (B) BONES (C) NOBLE (D) ARSON

Directions (Q.No.16 - 20): Study the following information and answer the questions given below it: All the six members of a family A, S, C, D, E and F are travelling together. B is the son of C but C is not the mother of B. A and C are a married couple. E is brother of C. D is the daughter of A. F is the brother or B.

16. How many male members are there in the family?
(A) 1 (B) 2 (C)3 (D) 4

17. Who is the mother of B?
(A) D (B) F (C) E (D) A

18. How many children does A have?
(A) One (B) Two (C) Three (D) Four

19. Who is the wife of E?
(A) A (B) F
(C) B (D) Cannot be determined

20. Which of the following is a pair of females?
(A) AE (B) BD (C) DF (D) AD

MATHS Section – II

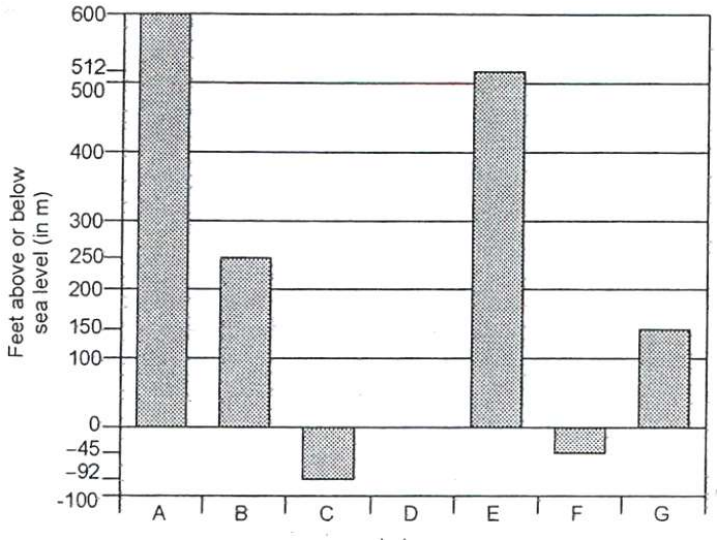
Part – A
Single Answer Questions

1. Find the value of the following expression $p^3 - p^2q^2 - pq + q^3$ when p = +2, q = -2.
(A) 8 (B) -8 (C)-12 (D)-3

2. Simplify [15 ÷ 3+10{60-8 ÷ 4+3(5 of (3-7)}]
(A)-20 (B)-15 (C) 12 (D) 16

3. The sum of numerator and denominator of a fraction is 12. If the denominator is increased by 3, the fraction becomes $\frac{1}{2}$ .The fraction is:
(A) $\frac{7}{5}$ (B) $\frac{3}{9}$ (C) $\frac{5}{7}$ (D) $\frac{9}{3}$

4. The given bar graph shows heights of selected lakes. Find the difference in elevation for Lake E and Lake C.



(A) 420 m (B) 604 m (C) 504 m (D) 692 m

5. The number of toffees in 30 gift packs are given as follows:
5,6,4,5,3,4,4,2,5,4,1,2,11,9,2,5,4,8,7,6,5,1,2,5, 7,8,1,9,7,8
Find the average number of toffees in gift packs.
(A)4 (B) 5 (C) 6 (D) 7

6. If 9 is added to four times a number, it becomes the same as 3 is subtracted from five times the same number.This fact can be represented as
(A) 5x + 9 = 4x + 3 (B) 9x + 4 = 3x - 5 (C) 9+4x=3-5x (D) 4x+9=5x-3

7. If $m-\frac{(m-1)}{2}=1-\frac{m-2}{3}$ then the value of m.
(A) 1/3 (B) 7/5 (C) 5/7 (D) 9/7

8. Simplify: $[63 - (-3)\{-2 - 8 - 3\}] \div 3\{6 +(-2)(-1)\} =$
(A) 0 (B) 1 (C) 2 (D) 3

9. Tarun studies for $5\frac{1}{4}$ hours daily. He devotes $2\frac{3}{4}$ hours of his time for English and mathematics. How much time does he devote for other subjects?
(A) 2 hours (B) $4\frac{2}{43}$ hours (C) $2\frac{1}{2}$ hours (D) $3\frac{1}{4}$ hours

10. The runs scored in a cricket match by 11 players are as follows:
9,15,121,51,101,81,50,18,82,11,11
Find the mean, mode and median respectively of this data.
(A) 48, 11, 51 (B) 49, 81, 11, 51 (C) 49.90, 11,50 (D) 49.81, 11,50

11. Solve: 0.06x + 0.09 (15 – x) = 0.07 (15)
(A) 12 (B) 0.10 (C) 10 (D) 0.01

12. The ages of A and B are in the ratio 5:3 After 6 years, their ages will be in the ratio 7:5. The sum of their present ages is:
(A) 9 years (B) 10 years (C) 15 years (D) 24 years

13. Evaluate: $\dfrac{2\frac{5}{4}-4\frac{7}{6}+3\frac{1}{3}}{0.087+0.3717\div 0.9}$

(A) 2.833 (B) 0.28 (C) 0.000028 (D) 0.00028

14. A number has two digits whose sum is 6. On adding 18 to the number, its digits are interchanged. The number is

(A) 23 (B) 24 (C) 26 (D) 25

15.. If the mean of observations 14, 5, 4, 8, 2, 3, x is x find the value of x

(A) 5 (B) 6 (C) 7 (D) 8

PHYSICS Section – III

Part – A
Single Answer Questions

1. Flow of heat takes place
(A) From ~ body at higher temperature to a body at lower temperature
(B) From a body al tower temperature to a body at higher temperature
(C) When both the bodies are at same temperature
(D) None of these

2. The SI unit of acceleration is
(A) m^2/s (B) m/s^2 (C) m/s (D) m

3. The value of 36 km/h in m/sec is
(A) 36 m/s (B) 18 m/s (C) 10 m/s (D) 130 m/s

4. One joule is approximately equal to
(A) 0.28 cal (B) 0.32 cal (C) 0.24 cal (D) 4.2 cal

5. Maximum density of water is at temperature
(A) 0°C (B) -273°C (C) 4°C (D) 100°C

6. Rest and motion are
(A) Absolute terms (B) Independent terms
(C) Relative terms (D) none of these

7. The interval between two events is called
(A) time (B) distance (C) speed (D) force

8. The unit of average velocity is
(A) m/s^2 (B) m/s (C) ms (D) ms^2

9. Ventilation in our rooms is based on the phenomenon
(A) condensation (B) convection (C) conduction (D) radiation

10. A body starts from initial point 0 and travels 10 m in the east direction. It travels back to 0 in 20 seconds. The displacement of the body is
(A) 20m (B) 10m (C)1m (D) 0m

CHEMISTRY Section – IV

Part – A
Single Answer Questions

1. Which of the following undergoes sublimation?
   (A) Ammonium chloride (B) Camphor
   (C) Naphthalene (D) All the given

2. At $0^{o}C$
   (A) Ice starts melting (B) Water starts freezing
   (C) Both (A) and (B) (D) None of the given

3. Water and alcohol
   (A) are miscible (B) form a homogeneous mixture
   (C) can be separated by fractional distillation (D) all the given are true

4. Identify the incorrect statement regarding rusting
   (A) It is a chemical change
   (B) It is a slow process
   (C) It occurs in the presence of oxygen only
   (D) It occurs in the presence of both oxygen and water

5. When a chemical change occurs in a substance
   (A) atoms are destroyed (B) new atoms are created
   (C) atoms are rearranged (D) none of the given

6. The organic acid present in apples is
   (A) acetic acid (B) lactic acid (C) citric acid (D) malic acid

7. The acid used in lead storage batteries is
   (A) nitric acid (B) carbonic acid (C) sulphuric acid (D) hydrochloric acid

8. Quick lime is chemically
   (A) calcium oxide (B) calcium hydroxide
   (C) calcium carbonate (D) calcium bicarbonate

9. Acetic acid is considered to be a weak acid because
   (A) It is used in food items (B) It does dissociate in water
   (C) It cannot donate a proton (D) It has very less tendency to donate proton

10. The pH of human blood is close to
    (A) 7.0 (B) 7.2 (C) 7.4 (D) 7.6

BIOLOGY Section – IV

Part – A
Single Answer Questions

1. The function of digestive juice present in the stomach is to breakdown
   (A) The proteins into simpler substances (B) Starch into sugars
   (C) Fats into juices (D) Food into gases

2. Grass is rich in _____, a special kind of carbohydrate which can only be digested by ruminants.
   (A) Glucose (B) Cellulose (C) Sucrose (D) Fructose

3. _____ is a saprophyte.
(A) Lichen (B) Venus flytrap (C) Mushroom (D) Cuscuta

4. The end product of aerobic respiration are
(A) Sugar & oxygen (B) CO_2, H_2O & energy
(C) Water & energy (D) CO, & energy

5. The food material used to release energy in body cells, which is considered as biological fuel is
(A) Glucose (B) Vitamin (C) Water (D) Minerals

6. Ingestion is the process of
(A) Take food into the body (B) Utilize nutrients
(C) Digest the food (D) Remove the undigested food

7. Which of the following statements are correct?
(i) All green plants can prepare their own food.
(ii) Most animals are autotrophs.
(iii) Carbon dioxide is not required for photosynthesis.
(iv) Oxygen is liberated during photosynthesis.

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

8. Autotrophic nutrition occurs in
(A) fungi (B) plants
(C) euglena and cyanobacteria (D) Both (B) and (C)

9. The cell organelle which is involved in photosynthesis is
(A) mitochondria (B) chloroplasts (C) leucoplasts (D) dictyosomes

10. The process of breaking down the water molecule to release oxygen in the presence of sunlight is called
(A) Photolysis (B) Photorespiration (C) Transpiration (D) Photoperiodism

Answer key Class - 07

MAT

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

MATHS

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

PHYSICS

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

CHEMISTRY

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

BIOLOGY

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