

FIITJEE ADMISSION TEST- 2021

for students of
Class 10
Paper 1

Time: 3 Hours (9:30 am – 12:30 pm)

Code | **1000**

Maximum Marks: 266

Instructions:

Caution: Class, Paper, Code as given above MUST be correctly marked on the answer OMR sheet before attempting the paper. Wrong Class, Paper or Code will give wrong results.

1. You are advised to devote 60 Minutes on Section-I, 45 Minutes on Section-II, 30 Minutes on Section-III and 45 Minutes on Section-IV.
2. This Question paper consists of 4 sections. Marking scheme is given in table below:

Section	Subject	Question no.	Marking Scheme for each question	
			Correct answer	Wrong answer
SECTION – I	APTITUDE	1 to 30	+3	0
SECTION – II	PHYSICS (PART-A)	31 to 39	+2	0
	CHEMISTRY (PART-B)	40 to 48	+2	0
	MATHEMATICS (PART-C)	49 to 57	+2	0
	BIOLOGY (PART-D)	58 to 66	+2	0
SECTION – III	PHYSICS (PART-A)	67 to 72	+1	0
	CHEMISTRY (PART-B)	73 to 78	+1	0
	MATHEMATICS (PART-C)	79 to 84	+1	0
	BIOLOGY (PART-D)	85 to 90	+1	0
SECTION – IV	PHYSICS (PART-A)	91 to 94	+4	-1
	CHEMISTRY (PART-B)	95 to 98	+4	-1
	MATHEMATICS (PART-C)	99 to 102	+4	-1
	BIOLOGY (PART-D)	103 to 110	+4	-1

3. Answers have to be marked on the OMR sheet. The Question Paper contains blank spaces for your rough work. No additional sheets will be provided for rough work.
4. Blank papers, clip boards, log tables, slide rule, calculator, cellular phones, pagers and electronic devices, in any form, are not allowed.
5. **Before attempting paper write your OMR Answer Sheet No., Registration Number, Name and Test Centre** in the space provided at the bottom of this sheet.

Note: Please check this Question Paper contains all **110** questions in serial order. If not so, exchange for the correct Question Paper.

OMR Answer Sheet No. : _____

Registration Number : _____

Name of the Candidate : _____

Test Centre : _____

Recommended Time: 60 Minutes for Section – I

Section – I

APTITUDE TEST

This section contains 30 Multiple Choice Questions number 1 to 30. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

Directions (1-2): Which of the following groups of alphabets should replace the blank spaces so that the group of alphabets given follows a logical pattern from the preceding and the following group of alphabets?

1. BMX, DNW, FOU, ?
(A) GHO (B) GPS
(C) HPR (D) HPT
2. _ b c d a _ c d a b _ d a b c _
(A) d,c,a,b (B) c,d,a,b
(C) a,b,c,d (D) c,c,d,a

Directions (3 – 4): In the following questions a series of letters has been given. In the series one or two letters are missing. What will come in place of question mark(?)

3. YX UTS ONML?
(A) IHGFE (B) HGFED
(C) FEDCB (D) GFEDC
4. AYBZC DWEXF GUHVI JSKTL?
(A) MQORN (B) MQNRO
(C) NQMOR (D) QMONR

Space for Rough Work

Directions (5-6) Complete the series by replacing the?

5. 24 60 120 210?
 (A) 300 (B) 336
 (C) 420 (D) 525
6. 462 420 380 ? 306
 (A) 322 (B) 332
 (C) 342 (D) 352
7. Find the wrong number in the following series:
 2 5 10 50 500 5000
 (A) 5 (B) 10
 (C) 50 (D) 5000
8. In the following series one terms is missing. Choose the correct alternative from the given ones that will complete the series:
 D9Y J27S P81M V243G?
 (A) B 729 A (B) A 729 B
 (C) A 324 B (D) C 729 B

Directions (9-10): These questions are based on letter/number/symbols. Read it carefully then answer:

A 8 B 6 # 7 H U % 3 \$ F V R 21 @ ↑ 4 I W E 9 (C)L 5]

9. How many such numbers are there in the series which is immediately followed by a vowel but not immediately preceded by a number?
 (A) None (B) One
 (C) Two (D) Three
10. There of the following four shows a certain relationship and so form a group. Which does not belong to that group?
 (A) B 7 # (B) I 4 ↑
 (C) F 2 R (D) W (C) E

Space for Rough Work

11. What is the number come at X in the given matrix?
- | | | |
|---|-----|---|
| 3 | 370 | 7 |
| 2 | 224 | 6 |
| 1 | 730 | X |
- (A) 5 (B) 8
(C) 9 (D) 11

Directions (12 – 13):

Study the following information carefully to answer these questions:

'P x Q' means 'P is the wife of Q'

'P ÷ Q' means 'P is the father of Q'

'P + Q' means 'P is the son of Q'

'P – Q' means 'P is the sister of Q'

12. In $H+I\div L$, how is L related to H?
(A) Brother (B) Sister
(C) Cousin (D) Brother of Sister
13. Which of the following represents 'S is mother of T'?
(A) $S\times M\div H-T$ (B) $S\times M+H-T$
(C) $M\times S\div H-T$ (D) $M\times S\div H+T$
14. A walks 10 metres in front and 10 metres to the right. Then every time turning to his left, he walks 5, 15 and 15 metres respectively. How far is he now from his starting point?
(A) 5 metres (B) 10 metres
(C) 15 metres (D) 20 metres
15. Rasik walks 20 m North. Then the turns right and walks 30 m. Then he turns right and walks 35 m. Then he turns left and walks 15 m. Then he again turns left and walks 15 m. In which direction and how many metres away is he from his original position?
(A) 15 metres West (B) 30 metres East
(C) 30 metres West (D) 45 metres East

Space for Rough Work

16. The third proportional to $(a - b)$ and $(a^2 - b^2)$ is
(A) $(a - b)(a^2 - b^2)$ (B) $(a + b)(a^2 + b^2)$
(C) $(a + b)(a^2 - b^2)$ (D) $(a - b)(a^2 + b^2)$
17. T, R, P, N, L, ?, ?
(A) J, H (B) K, H
(C) K, I (D) J, G
18. Find the next number in the series?
2, A, 9, B, 6, C, B, D, ?
(A) 9 (B) 10
(C) 12 (D) 19
19. A train started with 540 passengers. At the first station $\frac{1}{9}$ of them got down and 24 got up. On its second station $\frac{1}{8}$ of the passengers then existing got down and 9 got up. With how many passengers it reached the third station?
(A) 500 (B) 450
(C) 540 (D) 550
20. In an examination 52% of students failed in Hindi and 42% of students failed in English. If 17 % failed in both the subjects, then what percent of students passed only in one subject?
(A) 38% (B) 60%
(C) 94% (D) 77%
21. A man has some ducks and horses. The total number of their legs is 140 and that of their heads is 48. The number of ducks with man is:
(A) 22 (B) 23
(C) 24 (D) 26
22. A father who is 36 year old says to his son, "I was as old as you when you were born." What was age of son, 5 years ago?
(A) 13 years (B) 15 years
(C) 17 years (D) 20 years

Space for Rough Work

23. Six players participated as in a chess competition. According to rule of the competition, each player has to play once against every other one. How many matches will be played in this competition?
(A) 12 (B) 18
(C) 15 (D) 36
24. 12 men can complete a piece of work in 36 days. 18 women can complete the same piece of work in 60 days. 8 men and 20 women work together for 20 days. If only women were to complete the remaining piece of work in 4 days, how many more women would be required?
(A) 70 (B) 28
(C) 66 (D) 30
25. Fifty six men can complete a piece of work in 24 days. In how many days can 42 men complete the same piece of work?
(A) 18 days (B) 32 days
(C) 98 days (D) 48 days

Directions (26-30):

L, M, N, O, P, Q, R and S are sitting around a circular table facing the centre but not necessarily in the same order.

They all are having discussion on an important topic.

N is an immediate neighbor of both L and R, who is an immediate neighbor of P. P sits second to the left of N. Only two persons sit between M and Q.

26. What is the position of O with respect to S in the above arrangement?
(A) Third to the left (B) Immediate left
(C) Second to the right (D) Immediate right
27. Four of the following five are alike in a certain way and thus form a group. Which is the one that does not belong to that group?
(A) MS (B) QI
(C) NM (D) RP
28. Who among the following sits second to the left of the one who is on the immediate right of O?
(A) Q (B) M
(C) O (D) None of these
29. Which of the following persons sits between M and Q?
(A) O (B) L
(C) N (D) S
30. Who among the following sits third to right of the one who sits opposite of N?
(A) L (B) S
(C) R (D) O

Space for Rough Work

Recommended Time: 45 Minutes for Section – II

Section – II

PHYSICS – (PART – A)

This part contains 9 Multiple Choice Questions number 31 to 39. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

31. When a ball is released from a top of building, the distance covered by it in 4 sec will be
 (A) 20m (B) 40m
 (C) 80m (D) None
32. The ratio of the height from which two bodies are dropped is 3 : 7 respectively. The ratio of their final velocities is
 (A) 7 : 3 (B) 9 : 49
 (C) $\sqrt{3} : \sqrt{7}$ (D) $\sqrt{7} : \sqrt{3}$
33. The velocity of a particle at an instant is 10 m/s. After 5s, the velocity of the particle is 20 m/s. The velocity at 3 s before the instant when the velocity of the particle was 10 m/s is
 (A) 8 m/s (B) 6 m/s
 (C) 4 m/s (D) 5 m/s
34. A car starts from rest and moves with a uniform acceleration for 2 s, after that it starts to move with a uniform deceleration of 4 m/s^2 . The acceleration of the body if it takes 3 s for the car to stop is
 (A) 4 m/s^2 (B) 6 m/s^2
 (C) 12 m/s^2 (D) none of these
35. A stone when thrown with a velocity of 5 m/s attains a maximum height of H_1 and when thrown with a velocity of 10 m/s attains a maximum height of H_2 . Find the correct relation between H_1 and H_2 .
 (A) $H_1 = H_2$ (B) $H_1 = H_2/3$
 (C) $H_1 = 2H_2$ (D) $H_1 = H_2/4$

Space for Rough Work

36. An ant moves along a circular track of 6 m radius such that the arc of the circular track subtends an angle of 30° at the centre. The distance covered by the ant is
(A) π (B) 13π
(C) 6π (D) 4π
37. A ball is dropped from a balloon which is rising up with a speed of 2 m/s. After 2 s the velocity of the packet is
(A) 20 m/s (B) 18 m/s
(C) 22 m/s (D) None of these
38. If a car travels 30m and 26m in its 7th and 6th second of its travel respectively, then the initial velocity and acceleration of the body is
(A) 4 m/s, 4 m/s² (B) 6 m/s, 4 m/s²
(C) 0 m/s, 4 m/s² (D) 10 m/s, 8 m/s²
39. If a ball is thrown upward with a velocity of 6 m/s. The maximum height attained by the particle is
(A) 1.8 m (B) 3.6 m
(C) 5.4 m (D) none of these

Space for Rough Work

CHEMISTRY – (PART – B)

This part contains 9 Multiple Choice Questions number 40 to 48. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

40. Which of the following is not an element?
(A) Graphite (B) Germanium
(C) Silica (D) Silicon
41. The elements which normally exist in the liquid state are
(A) Bromine and iodine (B) Mercury and chlorine
(C) Iodine and mercury (D) Bromine and mercury
42. Which of the following is not a mixture?
(A) Kerosene (B) Air
(C) Alcohol (D) Petrol
43. A mixture of milk and groundnut oil can be separated by
(A) Sublimation (B) Evaporation
(C) Separating funnel (D) Filiation
44. The percentage of oxygen in NaOH is
(A) 40 (B) 60
(C) 8 (D) 10
45. How many gram atoms are present in 1.4 g of nitrogen atom?
(A) 1 (B) 0.1
(C) 0.01 (D) 0.5
46. The atomic masses of the elements are usually fractional because
(A) Elements consist of impurities (B) These are mixtures of allotropes
(C) These are mixture of isobars (D) These are mixtures of isotopes
47. The absolute value of charge on the electron was determined by:
(A) J.J. Thomson (B) Millikan
(C) Rutherford (D) Chadwick
48. Cathode rays are:
(A) Electromagnetic waves (B) Stream of α – particles
(C) Stream of electrons (D) γ – radiations

Space for Rough Work

MATHEMATICS – (PART – C)

This part contains **9 Multiple Choice Questions** number **49 to 57**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

49. If $\frac{3+2\sqrt{2}}{3-\sqrt{2}} = a + b\sqrt{2}$, where a and b are rational then the values of a and b is.

- (A) $a=13/7, b=9/7$
(C) $a=1, b=2$

- (B) $a=7/13, b=7/9$
(D) $a=2, b=-1$

50. If $\sqrt{3} = 1.732$, find the value of $\frac{1}{\sqrt{3}-1}$ is

- (A) 1.366
(C) $1/2$

- (B) 1
(D) $1/3$

51. If $x = \frac{1}{2+\sqrt{3}}$, then the value of $x^3 - x^2 - 11x + 3$ is

- (A) 1
(C) 2

- (B) 0
(D) -1

52. If $x = 3 - \sqrt{8}$, then the value of $x^3 + \frac{1}{x^3}$ is

- (A) 198
(C) 234

- (B) 125
(D) 196

Space for Rough Work

53. If $x = 1 + 2^{1/3} + 2^{2/3}$, then the value of $x^3 - 3x^2 - 3x - 1$ is
(A) 1 (B) 2
(C) 0 (D) -1
54. If $\sqrt{x+3} + \sqrt{x-2} = 5$, then value of x is
(A) 1 (B) 3
(C) 6 (D) 4
55. If $x = 1 + \sqrt{2} + \sqrt{3}$, then the value of $x^4 - 4x^3 - 4x^2 + 16x$ is
(A) -4 (B) -8
(C) 4 (D) 8
56. The value of $\left(\frac{2}{11}\right)^4 \times \left(\frac{11}{3}\right)^2 \times \left(\frac{3}{2}\right)^3$ is
(A) 51/21 (B) 6/121
(C) 121 (D) 121/6
57. The value of $\left(\frac{2}{3}\right)^3 \times \left(\frac{2}{5}\right)^{-3} \times \left(\frac{3}{5}\right)^2$ is
(A) 5/3 (B) 3/5
(C) 1/2 (D) 2/3

Space for Rough Work

BIOLOGY – (PART – D)

This part contains **9 Multiple Choice Questions** number **58 to 66**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

58. The minimum distance at which a microscope is capable of distinguishing two points as separate is its
 (A) Magnification (B) Resolution
 (C) Illumination (D) Power of objective lens
59. Circular DNA is found in
 (A) Prokaryotes (B) Mitochondria
 (C) Chloroplast (D) All of these

60. Match Column I with Column II:

Column I		Column II	
(i)	Purkinje	(p)	Father of Modern Cytology
(ii)	Swanson	(q)	Schwann
(iii)	Nucleus	(r)	Robert Brown
(iv)	Cell Theory	(s)	Protoplasm
(v)	Cell	(t)	Robert Hook

Choose the correct option:

- | | | | | | |
|-----|-----|------|-------|------|-----|
| | (i) | (ii) | (iii) | (iv) | (v) |
| (A) | (r) | (q) | (p) | (t) | (s) |
| (B) | (s) | (p) | (t) | (q) | (r) |
| (C) | (s) | (p) | (r) | (q) | (t) |
| (D) | (q) | (p) | (r) | (t) | (s) |

Space for Rough Work

61. Which of the following comprises only simple tissue?
(A) Parenchyma, Collenchyma and Sclerenchyma
(B) Parenchyma, Xylem and Collenchyma
(C) Parenchyma, Xylem and Sclerenchyma
(D) Parenchyma, Xylem and Phloem
62. Which type of the cell lining is most likely to be found in inner lining of gut and stomach?
(A) Squamous epithelium (B) Columnar epithelium
(C) Cuboidal epithelium (D) All of the above
63. Which type of mammalian tissue has the least power of regeneration?
(A) Skin epidermis (B) Endothelium of blood vessels
(C) Skeletal tissue (D) Nervous tissue
64. The pathogen *Vibrio cholerae*, a gram negative bacterium transmitted through contaminated food and water, causes
(A) Diphtheria (B) Tuberculosis
(C) Cholera (D) Leprosy
65. The beri-beri disease is due to the deficiency of vitamin
(A) Vitamin B₁ (B) Vitamin B₂
(C) Vitamin C (D) Vitamin D
66. The diseases caused by bacteria include
(A) Cholera (B) Typhoid
(C) Tuberculosis (D) All of these

Space for Rough Work

Recommended Time: 30 Minutes for Section – III**Section – III****PHYSICS – (PART – A)**

This part contains 6 Multiple Choice Questions number 67 to 72. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

67. Out of the following the only correct statements about satellites is
(A) A satellite can not move in a stable orbit in a plane passing through the earth's centre
(B) Geostationary satellites are launched in equatorial plane
(C) We can use just one geostationary satellite for global communication around the globe
(D) The speed of a satellite increases with an increase in the radius of its orbit.
68. A parrot sitting on the floor of a wire cage which is being carried by a boy starts flying. The boy will feel that the box is now
(A) heavier (B) lighter
(C) shows no change in weight (D) lighter in beginning and heavier later
69. A force of 20 N is needed to overcome a frictional force of 5N and accelerate a 3 kg mass across a floor. What is the acceleration of the mass?
(A) 4m/s^2 (B) 5m/s^2
(C) 7m/s^2 (D) 20m/s^2
70. Friction
(A) can occur only between two surfaces that are moving relative to one another
(B) is equal to the normal force divided by the coefficient of friction
(C) opposes the relative motion between the two surfaces in contact
(D) only depends on one of the surfaces in contact
71. When a stone of mass m is falling on the earth of mass M , the acceleration of earth will be
(A) zero (B) $\frac{mg}{M}$
(C) $\frac{Mg}{m}$ (D) g
72. Which of the following statements is False? No net force act on :
(A) A rain drop falling vertically with a constant speed
(B) A car moving with uniform velocity on a rough road
(C) A car moving with uniform velocity on a circular track
(D) A cork floating on water surface

Space for Rough Work

CHEMISTRY – (PART – B)

This part contains 6 Multiple Choice Questions number 73 to 78. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

73. Milk is an example of:
(A) Suspension (B) True solution
(C) Colloidal solution (D) Homogeneous solution
74. Insoluble particles are removed by:
(A) Sublimation (B) Filtration
(C) Centrifugation (D) Distillation
75. A mixture of sulphur and carbon disulphide is:
(A) Heterogeneous and shows Tyndall effect
(B) Homogeneous and shows Tyndall effect
(C) Homogeneous and does not show Tyndall effect
(D) Heterogeneous and does not show Tyndall effect
76. To separate pigments from natural colours, we use:
(A) Fractional distillation (B) Simple distillation
(C) Separating funnel (D) Chromatography
77. The number of atoms in 52 u of He are
(A) 13 (B) $13 \times 6.022 \times 10^{23}$
(C) 52 (D) $4 \times 6.022 \times 10^{23}$
78. The percentage of carbon and oxygen in sample of CO_2 obtained by different methods were found to be the same. This illustrates the law of:
(A) Conservation of mass (B) Constant proportions
(C) Multiple proportions (D) Reciprocal proportions

Space for Rough Work

MATHEMATICS – (PART – C)

This part contains **6 Multiple Choice Questions** number **79 to 84**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

79. The value of $\frac{16 \times 2^{n+1} - 4 \times 2^n}{16 \times 2^{n+2} - 2 \times 2^{n+2}}$ is
- (A) 0
(C) 1/2
- (B) 2/3
(D) 1
80. Simplify $\left(\frac{81}{16}\right)^{-3/4} \times \left[\left(\frac{25}{9}\right)^{-3/2} \div \left(\frac{5}{2}\right)^{-3}\right]$
- (A) -1
(C) 1/2
- (B) 0
(D) 1
81. If $x = 3 + \sqrt{8}$ and $y = 3 - \sqrt{8}$ then $\frac{1}{x^2} + \frac{1}{y^2} =$
- (A) -34
(C) $12\sqrt{8}$
- (B) 34
(D) $-12\sqrt{8}$
82. If $\frac{3 + \sqrt{7}}{3 - \sqrt{7}} = a + b\sqrt{7}$ then (a, b) =
- (A) (8, -3)
(C) (-8, 3)
- (B) (-8, -3)
(D) (8, 3)
83. $\frac{\sqrt{5} - 2}{\sqrt{5} + 2} - \frac{\sqrt{5} + 2}{\sqrt{5} - 2} =$
- (A) $8\sqrt{5}$
(C) $6\sqrt{5}$
- (B) $-8\sqrt{5}$
(D) $-6\sqrt{5}$
84. If $x = \frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$ and $y = 1$, the value of $\frac{x - y}{x - 3y}$ is:
- (A) $\frac{5}{\sqrt{5} - 4}$
(C) $\frac{\sqrt{6} - 4}{5}$
- (B) $\frac{5}{\sqrt{6} + 4}$
(D) $\frac{\sqrt{6} + 4}{5}$

Space for Rough Work

BIOLOGY – (PART – D)

This part contains 6 Multiple Choice Questions number 85 to 90. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

85. The 80s ribosomes are made up of
(A) 30s and 50s subunits (B) 40s and 60s subunits
(C) 40s and 40s subunits (D) 20s and 60s subunits
86. A cell cycle consists of:
(A) Mitosis and meiosis
(B) G₁, S and G₂ phase
(C) Prophase, metaphase, anaphase, Telophase and cytokinesis
(D) Mitosis and Interphase
87. Select the incorrect statement from the following:
(A) Trichome helps in preventing water loss due to transpiration
(B) Cuticle prevents loss of water
(C) Cuticle is absent in roots
(D) Epidermis is made up of elongated loosely arranged cell which forms continuous layer
88. Which of the following set is an example of connective tissue?
(A) Areolar, Blood and skeletal tissue
(B) Areolar, cartilage and unstriated
(C) Elastic cartilage and ciliated epithelium
(D) striped, adipose and columnar epithelium
89. Quinine an important drug for treatment of malaria, is extracted from
(A) Calyx of Cinnamon (B) Bark of *Cinchona*
(C) Red ants (D) Leaves of Tulsi
90. The infections agents responsible for which diseases can be spread when the patient coughs?
(A) AIDS, TB and hepatitis (B) TB, Influenza and Cholera
(C) TB and Influenza (D) TB and Hepatitis

Space for Rough Work

Recommended Time: 45 Minutes for Section – IV**Section – IV****PHYSICS – (PART – A)**

This part contains 4 Multiple Choice Questions number 91 to 94. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

91. It is easier to draw up wooden block along an inclined plane than to haul it up vertically, principally because
(A) the friction is reduced
(B) the mass becomes smaller
(C) only a part of the weight has to be overcome
(D) g becomes smaller.
92. A rubber ball is dropped from a height of 5 m on a planet where the acceleration due to gravity is not known. On bouncing it rises to 1.8 m. The ball loses its velocity on bouncing by a factor of:
(A) $\frac{16}{25}$
(B) $\frac{2}{5}$
(C) $\frac{3}{5}$
(D) $\frac{9}{2}$
93. Two bodies A and B of mass 100 gm and 200 gm respectively are dropped near the earth's surface. Let the acceleration of A and B be a_1 and a_2 respectively
(A) $a_1 = a_2$
(B) $a_1 < a_2$
(C) $a_1 > a_2$
(D) can't say anything
94. A bullet of mass A and velocity B is fired into a wooden block of mass C. If loss of any mass and friction be neglected, velocity of system will be.
(A) $\frac{AB}{A+C}$
(B) $\frac{A+C}{B+C}$
(C) $\frac{AC}{B+C}$
(D) $\frac{A+B}{AC}$

Space for Rough Work

CHEMISTRY – (PART – B)

This part contains 4 Multiple Choice Questions number 95 to 98. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

95. The magnitude of charge in coulombs on P^{-3} ion is:
(A) 4.8×10^{-19} (B) 1.6×10^{-19}
(C) $3 \times 6.022 \times 10^{23}$ (D) 4.8×10^{23}
96. What volume is occupied by 16 g of oxygen at 273 K and 1 atm pressure?
(A) 22.4 L (B) 11.2 L
(C) 22.7 L (D) 11.35 L
97. What amount of quick lime (CaO) is given on complete decomposition of 10 g $CaCO_3$?
(A) 56 g (B) 5.6 g
(C) 0.56 g (D) 56 kg
98. How many times an atom of sulphur is heavier than an atom of carbon?
(A) 32 times (B) 12 times
(C) 8/3 times (D) 12/32 times

Space for Rough Work

MATHEMATICS – (PART – C)

This part contains 4 Multiple Choice Questions number 99 to 102. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

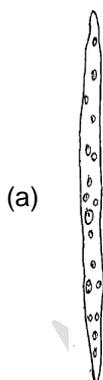
99. Find the value of $36x^2 + 49y^2 + 84xy$, when $x = 3$, $y = 6$ is
(A) 1600 (B) 3200
(C) 3600 (D) 3000
100. If $x^2 + \frac{1}{x^2} = 23$, then the value of $\left(x + \frac{1}{x}\right)$ is
(A) 5 (B) 25
(C) -5 (D) 23
101. If $a + b + c = 9$ and $ab + bc + ac = 26$, then the value of $a^3 + b^3 + c^3 - 3abc$ is
(A) 27 (B) 26
(C) 29 (D) 25
102. Factorise: $a^4 + \frac{1}{a^4} - 3$.
(A) $\left(a^2 - \frac{1}{a^2} + 1\right)\left(a^2 - \frac{1}{a^2} + 1\right)$ (B) $\left(a^2 - \frac{1}{a^2} + 1\right)\left(a^2 - \frac{1}{a^2} - 1\right)$
(C) $\left(a^2 - \frac{1}{a^2} + 1\right)\left(a^2 + \frac{1}{a^2} - 1\right)$ (D) $\left(a^2 + \frac{1}{a^2} + 1\right)\left(a^2 - \frac{1}{a^2} - 1\right)$

Space for Rough Work

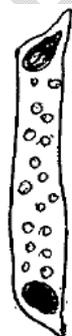
BIOLOGY – (PART – D)

This part contains **8 Multiple Choice Questions** number **103 to 110**. Each question has **4 choices (A), (B), (C) and (D)**, out of which **ONLY ONE** is correct.

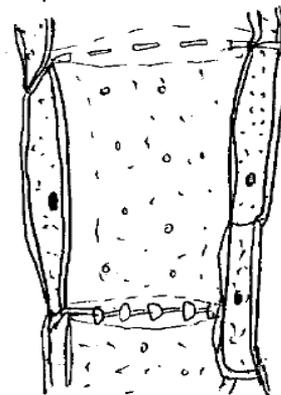
103. The Fluid Mosaic Model of cell membrane postulates that
 (A) A lipid bilayer has proteins embedded in itself and none on the surface
 (B) A lipid bilayer has some embedded proteins and some proteins on the surface
 (C) A lipid bilayer is coated by a layer of proteins on each face
 (D) A lipid bilayer is coated by a layer of proteins on the outer face only
104. Select the correct statements from the following:
 (i) Elaioplasts store protein.
 (ii) Robert Hooke observed the first living cell.
 (iii) Cells originate from Pre-existing cells.
 (iv) Mitochondria are called power houses of the cell.
 (A) (i) & (iv) (B) (ii) & (iv)
 (C) (iii) & (iv) (D) (ii) & (iii)
105. The main organelle involved in modification and routing of newly synthesized proteins to their destination is
 (A) Mitochondria (B) Endoplasmic reticulum
 (C) Lysosome (D) Chloroplast
106. From the following set of plant conducting tissues identify the correct option.



(a)



(b)



(c)

- (A) (a) – Tracheid, (b) – Sieve tube, (c) Vessel
 (B) (a) – Sieve tube, (b) – Vessel, (c) – Tracheid
 (C) (a) – Vessel, (b) – Tracheid, (c) – Sieve tube
 (D) (a) – Tracheid, (b) –Vessel (c) – Sieve tube

Space for Rough Work

107. Match the following:

Column I		Column II	
(1)	Cartilage	(P)	Neurilemma
(2)	Bone	(Q)	Sarcolemma
(3)	Muscle fibres	(R)	Perichondrium
(4)	Neuron	(S)	Periosteum
(5)	Heart	(T)	Pericardium

(A) (1) - (R); (2) - (S); (3) - (P); (4) - (Q); (5) - (T)

(B) (1) - (R); (2) - (T); (3) - (Q); (4) - (P); (5) - (S)

(C) (1) - (R); (2) - (S); (3) - (Q); (4) - (P); (5) - (T)

(D) (1) - (P); (2) - (S); (3) - (R); (4) - (Q); (5) - (T)

108. Characteristics present in meristematic cells are

(A) Thin walled, thin protoplasm, no intercellular spaces and nucleated

(B) Thin walled, dense protoplasm, with intercellular spaces and nucleated

(C) Thick walled, thin protoplasm, no intercellular spaces and non-nucleated

(D) Thin walled, dense protoplasm, no intercellular spaces and nucleated

109. Which of the following is **incorrect** regarding AIDS caused by HIV virus?

(A) AIDS creates opportunity for other infections

(B) Sexually transmitted disease

(C) HIV weakens immunity level

(D) AIDS is not transferred from mother to child

110. Find wrong one?

(A) Hemophilia – congenital (genetic) disease

(B) Kwashiorkor – communicable disease

(C) Malaria – infectious disease

(D) Scurvy – non communicable disease

Space for Rough Work

FIITJEE ADMISSION TEST

CLASS – X (PAPER – 1) ANSWERS

1.	C	2.	C	3.	D	4.	B
5.	B	6.	C	7.	D	8.	A
9.	A	10.	D	11.	C	12.	D
13.	A	14.	A	15.	D	16.	C
17.	A	18.	B	19.	B	20.	B
21.	D	22.	A	23.	C	24.	D
25.	B	26.	C	27.	C	28.	D
29.	D	30.	C	31.	C	32.	C
33.	C	34.	B	35.	D	36.	A
37.	B	38.	A	39.	A	40.	C
41.	D	42.	C	43.	C	44.	A
45.	B	46.	D	47.	B	48.	C
49.	A	50.	A	51.	B	52.	A
53.	C	54.	C	55.	D	56.	B
57.	A	58.	B	59.	D	60.	C
61.	A	62.	B	63.	D	64.	C
65.	A	66.	D	67.	B	68.	B
69.	B	70.	C	71.	B	72.	C
73.	C	74.	B	75.	C	76.	D
77.	A	78.	B	79.	C	80.	D
81.	B	82.	D	83.	B	84.	D
85.	B	86.	D	87.	A	88.	A
89.	B	90.	C	91.	C	92.	B
93.	A	94.	A	95.	A	96.	B
97.	B	98.	C	99.	C	100.	A
101.	A	102.	B	103.	B	104.	C
105.	B	106.	D	107.	C	108.	D
109.	D	110.	B				