

FIITJEE SAMPLE PAPER

(FIITJEE Talent Reward Exam - 2021)

for students presently in

Class 9 (Paper 1)



Time: 3 Hours (9:30 am – 12:30 pm)

Code 9000

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 (Q. 1 to 3): In each of the following questions, a number/letter 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. Z, W, S, N, ?
(A) P (B) O
(C) H (D) Q
2. bdf, hjl, ?, tvx.
(A) nrp (B) pnr
(C) nqr (D) npr
3. 9, 10, 14, 23, 39, ?
(A) 64 (B) 49
(C) 63 (D) 59
4. Find out how many such pairs of letters are there in the given word each of which has as many letters between them in the word as in the English alphabet.
ADEQUATELY
(A) One (B) Two
(C) Three (D) Four

Space for Rough Work

Directions (Q. 5 to 6): Read the passage below and solve the questions based on it.

Three different faces of a cube are coloured in three different colours – Red, Yellow and Orange. This cube is now cut into 216 smaller but identical cubes.

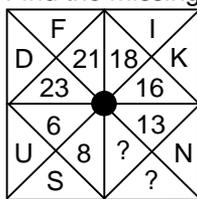
5. What is the least number of the smaller cubes that will have exactly three faces coloured?
 (A) 0 (B) 6
 (C) 2 (D) None of these
6. How many smaller cubes have exactly two face coloured?
 (A) 12 (B) 15
 (C) 16 (D) cannot be determined
7. 'Melt' is related to 'Liquid' in the same way as 'Freeze' is related to
 (A) Ice (B) Crystal
 (C) Water (D) Cubes
8. A word is given in capital letters. It is followed by four words. Out of these four words, three cannot be formed from the letters of the word in capital letters. Point out the word which can be formed from the letters of the given word in capital letters.
 PHILANTHROPIST
 (A) FIST (B) LARK
 (C) HYPOCRISY (D) PISTON
9. Choose the pair/group of words that show the same relationship as given at the top of every pair/group.
Water : Swim
 (A) Graze : Grass (B) Plan : Implement
 (C) Flood : Damage (D) Ground : Play
10. If $A + B$ means A is wife of B; $A - B$ means A is son of B; and $A = B$ means A is sister of B. Following this relationship, Pankaj – Rajinder = Rahul will certainly mean all of these except
 (A) Rajinder is a lady (B) Pankaj is son of Rajinder
 (C) Rahul is father of Pankaj (D) None of these
11. Four pairs of words are given out of which the words in three pairs bear a certain common relationship. Choose the pair in which the words are differently related.
 (A) Bouquet : Flowers (B) Bunch : Grapes
 (C) Furniture : Chair (D) Album : Photos

Space for Rough Work

Directions (Q. 12 to 13): According to a certain code,

- (i) 'min fin bin gin' means 'trains are always late';
- (ii) 'gin din cin hin' means 'drivers were always punished';
- (iii) 'min cin vin rin' means 'drivers stopped all trains'; and
- (iv) 'din kin fin vin' means 'all passengers were late'.

12. 'Drivers were late' would be written as
 (A) min cin din (B) fin cin din
 (C) fin din gin (D) gin hin min
13. Which word is represented by 'vin'?
 (A) all (B) late
 (C) trains (D) drivers
14. Seeta and Ram both start from a point towards North. Seeta turns to left after walking 10 km. Ram turns to right after walking the same distance. Seeta waits for some time and then walks another 5 km, whereas Ram walks only 3 km. They both then turn to South and walk 15 km forward. How far is Seeta from Ram?
 (A) 15 km (B) 10 km
 (C) 8 km (D) 12 km
15. X is three times as old as Y, Z was twice as old as X four years ago. In four years time, X will be of 31 years. What is the present age of Y and Z?
 (A) 9 years, 46 years (B) 9 years, 50 years
 (C) 10 years, 46 years (D) 10 years, 50 years
16. Find the missing term in the following figures.



- (A) $\frac{9}{R}$ (B) $\frac{11}{P}$
 (C) $\frac{13}{Q}$ (D) $\frac{10}{W}$

Space for Rough Work

Directions (Q. 17 to 19): Read the following information carefully and answer the following questions. Seven person A, B, C, D, E, F and G were born on different months viz. January, February, March, April, June, August and October of the same year but not necessary same order. Only three persons were born before E and D is not one of them. F was not born immediately after E. B was born after F. A was born immediately before the month in which G was born. Only two persons were born between G and F.

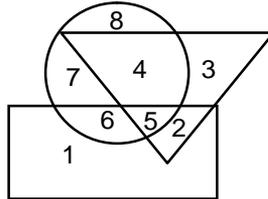
17. How many persons were born between C and E?
 (A) Three (B) Two
 (C) Four (D) Five
18. Who amongst the following is the oldest?
 (A) A (B) C
 (C) E (D) B
19. Who amongst the following was born between the months in which A and D were born?
 (A) F (B) G
 (C) C (D) B

Directions (Q. 20 to 22): Seven persons A, B, C, D, E, F and G are sitting in a circle. Five of them are facing the centre while two of them are facing opposite to the centre. C sits third to the left of D and both are facing the centre. E is neither an immediate neighbour of D nor of C. The one sitting exactly between D and F is facing opposite to the centre. G sits third to the right of A and G is facing the centre. One of B's neighbours is facing opposite to the centre.

20. Which of the following pairs represents persons facing opposite to the centre.
 (A) A and F (B) E and F
 (C) A and E (D) None of these
21. Who is sitting to the left of A?
 (A) C (B) G
 (C) E (D) D
22. Who is sitting to the left of E?
 (A) C (B) G
 (C) B (D) A
23. Six friends are sitting in a circle and playing cards. Kenny is to the left of Danny. Michael is in between Bobby and Johnny, Roger is in between Kenny and Bobby. Who is sitting to the right of Michael?
 (A) Danny (B) Johnny
 (C) Kenny (D) Bobby

Space for Rough Work

Directions (Q. 24 to 25): In the following questions, answers are to be based on the diagram given below, where the triangle represents doctors, the circle represents players and the rectangle represent artists.



24. Which number represents artists who are also players only?
 (A) 4 (B) 6
 (C) 7 (D) 8
25. Which number represents doctors who are neither players nor artists?
 (A) 2 (B) 3
 (C) 4 (D) 5

Directions (Q. 26 to 30): Study the following information carefully and answer the questions given below: M, D, P, K, R, T and W are sitting around a circle facing the centre. D is second to the right of P, who is third to the right of K. T is third to the right of W, who is not an immediate neighbour of D. M is third to the left of R.

26. Who is second to the right of T?
 (A) D (B) K
 (C) M (D) R
27. In which of the following pairs is the second person sitting to the immediate right of first person?
 (A) DT (B) TP
 (C) PR (D) KW
28. Who is on the immediate left of R?
 (A) W (B) P
 (C) K (D) T
29. Who is on the immediate left of M?
 (A) K (B) W
 (C) D (D) T
30. Who is third to the left of D?
 (A) W (B) P
 (C) K (D) R

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. Relation between mass of body and its weight is :
(A) $w = mg$ (B) $w = \frac{m}{g}$
(C) $g = m - w$ (D) $w = m + g$
32. Which is not the unit of Force :
(A) Poundal (B) Dyne
(C) Joule (D) Newton
33. The S.I unit of pressure is
(A) $N.m^2$ (B) N/m^2
(C) m^2/N (D) N/m
34. The momentum of an object at a given instant is independent of its :
(A) inertia (B) speed
(C) velocity (D) acceleration

Space for Rough Work

35. The atmosphere is held to the earth by
(A) Winds (B) Gravity
(C) Clouds (D) None of these
36. Value of one Fermi is :
(A) 10^{-13} meter (B) 10^{-14} meter
(C) 10^{-15} meter (D) 10^{-16} meter
37. Correct relation is _____.
(A) $v^2 = u^2 + 2a^2 s^2$ (B) $v^2 = u^2 - 2a^2 s^2$
(C) $v^2 = u^2 + 2as$ (D) $v^2 = u^2 + 2a^2 s$
38. A bomb at rest and of 10 kg explodes into two pieces of masses 6 kg and 4 kg respectively. The mass of 4 kg moves away with a velocity of 12 ms^{-1} . The velocity of the other mass will be:
(A) 12 ms^{-1} (B) 8 ms^{-1}
(C) 4 ms^{-1} (D) 2 ms^{-1}
39. According to Kepler, the period of revolution of a planet (T) and its mean distance from the sun (r) are related by the equation
(A) $T^3 r^3 = \text{constant}$ (B) $T^2 r^{-3} = \text{constant}$
(C) $Tr^3 = \text{constant}$ (D) $T^2 r = \text{constant}$

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. The law of multiple proportions was proposed by
(A) Lavoisier (B) Dalton
(C) Priestley (D) Richter
41. 180 grams of water contains moles.
(A) 100 (B) 10
(C) 180 (D) 0.01
42. What is the weight of 3 gram atoms of sulphur?
(A) 96 gm (B) 99 gm
(C) 100 gm (D) 3 gm
43. The element which is a liquid above 30°C, is :
(A) Cesium (B) Lithium
(C) Sodium (D) Magnesium
44. Separating funnel is useful in separating the following :
(A) Miscible liquids with same density (B) Miscible liquids with same colour
(C) Miscible liquids with variable density (D) Immiscible liquids with variable density
45. How many moles of oxygen atoms are present in one mole of acetic acid?
(A) 1 mole (B) 3 moles
(C) 2 moles (D) 6 moles
46. What is the number of particles in one mole of a substance?
(A) 6.023×10^{23} (B) 6.023×10^{-23}
(C) 6.023 (D) 3×10^6
47. The appropriate production of sodium carbonate per month is 424×10^6 g while that of methyl alcohol is 320×10^6 g. Which is produced more in terms of number of moles?
(A) Sodium carbonate (B) Methyl alcohol
(C) Both (A) and (B) (D) None of these
48. 15g of methyl alcohol is present in 100 ml of solution. If the density of solution is 0.96 g/ml, calculate the mass percentage of methyl alcohol in solution.
(A) 15.625% (B) 25.625%
(C) 45.625% (D) 35.625%

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. $0.\overline{37}$ is equivalent to

(A) $\frac{37}{198}$

(B) $\frac{55}{67}$

(C) $\frac{37}{99}$

(D) none of these

50. If the number $12x\ 453$ is divisible by 9, then the digit at the place of x is

(A) 1

(B) 2

(C) 3

(D) 4

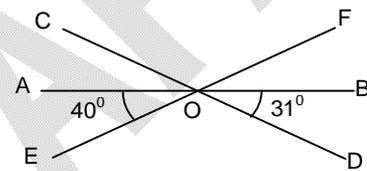
51. In the following figure, if AB, CD and EF are straight lines, find $\angle BOC$:

(A) 109°

(B) 149°

(C) 71°

(D) 140°



52. If two interior angles on the same side of a transversal intersecting two parallel lines are in the ratio 2:3, then the smaller of two angles is:

(A) 72°

(B) 108°

(C) 54°

(D) 36°

Space for Rough Work

53. The lowest term of $\frac{(x^2 - 1)(x + 2)(x^2 - x - 72)}{(x - 9)(x + 1)}$ is
- (A) $(x + 1)(x - 2)(x + 8)$ (B) $(x - 1)(x + 2)(x + 8)$
(C) $(x - 1)(x - 2)(x + 8)$ (D) $(x - 1)(x + 2)(x - 8)$
54. Find the remainder when $101 \times 102 \times 103 \times 104 \times 105 \times 106 \times 107$ is divided by 5040
(A) 0 (B) 540
(C) 480 (D) 404
55. The mean of 11 numbers is 10. What should be added as 12th number to make the mean 14?
(A) 10 (B) 72
(C) 58 (D) 90
56. The difference between the maximum and the minimum observation in the data is called _____.
(A) Frequency (B) Class interval
(C) Range (D) Cumulative frequency
57. A line segment is of length 10 units. If the co-ordinates of its one end are $(2, -3)$ and the abscissa of the other end is 10, then its ordinate is
(A) 9, 6 (B) 3, -9
(C) -3, 9 (D) 9, -6

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 epithelial tissue present on the inner surface of bronchioles and Fallopian tubes is:
(A) Glandular (B) Ciliated
(C) Squamous (D) Cuboidal
59. Which one of the following pairs of structures distinguishes a nerve cell from other types of cell?
(A) Vacuoles and fibres (B) Flagellum and medullary sheath
(C) Nucleus and mitochondria (D) Perikaryon and dendrites
60. Which one of the following contains the largest quantity of extracellular material?
(A) Striated muscle (B) Areolar tissue
(C) Stratified epithelium (D) Myelinated nerve fibres
61. Which one of the following cell organelles is enclosed by a single membrane?
(A) Lysosomes (B) Nuclei
(C) Mitochondria (D) Chloroplasts
62. Which of the following structures is not found in a prokaryotic cell?
(A) Mesosome (B) Plasma membrane
(C) Nuclear envelope (D) Ribosome
63. The plasma membrane consists mainly of:
(A) Phospholipids embedded in a protein bilayer
(B) Proteins embedded in a phospholipid bilayer
(C) Proteins embedded in a polymer of glucose molecules
(D) Proteins embedded in a carbohydrate bilayer
64. In plant cells, division of cytoplasm occurs by
(A) Cell plate (B) Cleavage
(C) Furrowing (D) Invagination
65. Who was the first to explain that cells divide and that all new cells must come from pre-existing cells?
(A) Matthias Schleiden (B) Theodore Schwann
(C) Robert Hooke (D) Rudolf Virchow
66. Muscular tissue is differentiated into:
(A) Unstriated, Striped (B) Striped, Cardiac
(C) Unstriated, Striped and Cardiac (D) Cardiac, Unstriated

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. If the mass and radius of earth become half and one-fourth of its present values then the value of acceleration due to gravity will be come :
- (A) $\frac{1}{8}g$ (B) $\frac{1}{4}g$
(C) 4 g (D) 8 g
68. Value of acceleration due to gravity of earth is maximum :
- (A) At centre of earth
(B) At surface of earth
(C) At a height of 50 km from earth's surface
(D) At a height of 12 km from earth's surface
69. The mass of an object is 10 kg on earth. So we can say :
- (A) Its weight on earth is 10 N (B) Its weight on Earth is 1.67 N
(C) Its weight on moon is 10 N (D) Its mass on moon is 10 kg
70. The mass of two bodies are 1 kg and 2 respectively and their kinetic energy are 1 J and 2 J respectively. The ratio of their momentum is given by.
- (A) 1 : 1 (B) 1 : 4
(C) 4 : 1 (D) 1 : 2
71. The period of a satellite in a circular orbit of radius R is T, the period of another satellite in a circular orbit of radius 4R is
- (A) 4 T (B) T/4
(C) 8 T (D) T/8
72. Reason of weightlessness in a satellite is
- (A) Zero gravity (B) Centre of mass
(C) Zero reaction force by satellite surface (D) None

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. Chemical analysis of a carbon compound gave the following percentage composition by weight of the elements present in it. Carbon = 10.06%, Hydrogen = 0.84%, Chlorine = 89.10%. Calculate the empirical formula of the compound,
(A) $C_2H_2Cl_2$ (B) $CHCl_2$
(C) $CHCl_3$ (D) $C_4H_4Cl_4$
74. Calculate the empirical formula of a compound having percentage composition: Potassium (K) = 26.57, Chromium(Cr)=35.36, Oxygen (O) = 38.07
(A) K_2CrO_4 (B) $K_2Cr_2O_7$
(C) $K_3Cr_2O_3$ (D) $K_3Cr_2O_7$
75. Calculate the mass of 2.5 mole of $CaCO_3$.
(A) 200 g (B) 230 g
(C) 240 g (D) 250 g
76. The purification of drinking water involves :
(i) Chlorination (ii) Filtration
(iii) Loading (iv) Sedimentation
Choose the correct order of these processes
(A) i, ii, iii, iv (B) ii, iv, iii, i
(C) iv, ii, iii, i (D) iv, iii, ii, i
77. What is the mass of one molecule of oxygen?
(A) 5.31×10^{-23} g (B) 5.33×10^{23} g
(C) 5.25×10^{23} g (D) 5.02×10^{-23} g
78. Fractional distillation of two liquids gives better results if the difference is large in their :
(A) Boiling points (B) Densities
(C) Colours (D) Solubilities

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. In triangles ABC and QPR, three equality relations between parts are as follows:
 $AB = QP$, $\angle B = \angle P$ and $BC = PR$. State which of the congruence condition appears?
 (A) SAS (B) ASA
 (C) SSS (D) RHS
80. $\left(\frac{a^m}{a^n}\right)^{m+n} \left(\frac{a^n}{a^l}\right)^{n+l} \left(\frac{a^l}{a^m}\right)^{l+m} =$
 (A) 0 (B) 1
 (C) $\frac{1}{2}$ (D) -1
81. If mean of the following data is 11, then find the value of P.
- | | | | | | | |
|-------|----|---|---|----|----|----|
| x_i | 13 | 5 | 7 | 19 | 11 | 13 |
| f_i | 6 | 8 | P | 11 | 8 | 4 |
- (A) 11 (B) 15
 (C) 17 (D) 13
82. The sum of all exterior angles of a hexagon is:
 (A) 180° (B) 270°
 (C) 360° (D) 720°
83. Three or more lines passing through the same point are called
 (A) collinear lines (B) parallel lines
 (C) concurrent lines (D) coincident lines
84. The coordinates of one end point of a diameter of a circle are $(4, -1)$ and the coordinates of the centre of the circle are $(1, 3)$. Find the co-ordinates of the other end of the diameter.
 (A) $(2, 5)$ (B) $(-2, 7)$
 (C) $(-2, 5)$ (D) $(2, -5)$

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. Areolar connective tissue joins:
 (A) Bones with bones (B) Fat body with muscles
 (C) Integument with muscles (D) Bones with muscles
86. Ligament is a/an:
 (A) Inelastic white fibrous tissue (B) Modified white fibrous tissue
 (C) Modified yellow elastic fibrous tissue (D) None of these
87. During cell growth, DNA synthesis takes place in:
 (A) S-phase (B) G₁-phase
 (C) G₂-phase (D) M phase
88. All types of plastids possess essentially the same structure because they:
 (A) Perform the same function
 (B) Store food materials like starch, fat and protein
 (C) Occur in aerial parts
 (D) Can transform from one form to another
89. Ribosome 70s breaks into
 (A) 40s and 30s (B) 50s and 30s
 (C) 45s and 25s (D) 50s and 20s
90. Match the following:
- | Column I | | Column II | |
|----------|---------------|-----------|-----------|
| (1) | Erythrocytes | (P) | Bone |
| (2) | Chondrocytes | (Q) | Neuron |
| (3) | Osteocytes | (R) | Cartilage |
| (4) | Schwann Cells | (S) | Blood |
- (A) (1) - (S); (2) - (P); (3) - (R); (4) - (Q)
 (B) (1) - (S); (2) - (Q); (3) - (P); (4) - (R)
 (C) (1) - (S); (2) - (R); (3) - (P); (4) - (Q)
 (D) (1) - (S); (2) - (R); (3) - (Q); (4) - (P)

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. Why we prefer rubber tyres to the steel tyres ?
(A) Rubber is cheaper than steel
(B) It is easy to give the rubber a circular shape
(C) Coefficient of friction between rubber on concrete is lower than that between steel on concrete.
(D) None of the above
92. A block of mass M is placed on a rough floor of a lift. The coefficient of friction between the block and the floor is μ . When the lift falls freely, the block is pulled horizontally on the floor. What will be the force of friction ?
(A) μMg (B) $\mu Mg/2$
(C) $2\mu Mg$ (D) None of these
93. A nucleus of mass number (A), originally at rest emits α particle with speed v . What will be the recoil of the daughter nucleus.
(A) $4v/(A - 4)$ (B) $4v/(A + 4)$
(C) $v/(A - 4)$ (D) $v/(A + 4)$.
94. A particle starts its motion from rest under the action of a constant force. If the distanced in first 10 s is S_1 and that covered in first 30 s in S_2 then :
(A) $S_2 = S_1$ (B) $S_2 = 2S_1$
(C) $S_2 = 3S_1$ (D) $S_2 = 9S_1$

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. Out of two liquids X and Y, X produces more cooling effect than that of Y on the skin. This observation infers that :
(A) The boiling point of X is more than that of Y (B) The boiling point of X is less than that of Y
(C) The latent heat of X is less than that of Y (D) The density of X is higher than that of Y
96. Calculate the number of atoms present in 6.4 g of sulphur.
(A) 2.4×10^{23} atoms (B) 2.4×10^{-23} atoms
(C) 1.2×10^{23} atoms (D) 1.2×10^{-23} atoms
97. The empirical formula of acetic acid is CH_2O . its molecular weight is 60. Find its molecular formula
(A) CH_2O (B) CH_3O_2
(C) $\text{C}_2\text{H}_4\text{O}_2$ (D) $\text{C}_3\text{H}_6\text{O}_2$
98. An element has only one type of
(A) Molecules (B) Atoms
(C) Mixtures (D) Solutes

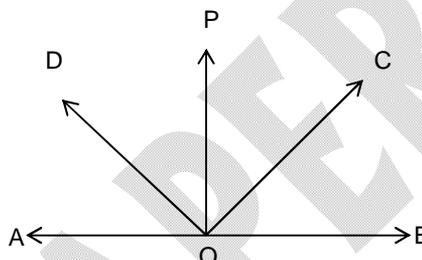
Space for Rough Work

MATHEMATICS – (PART – C)

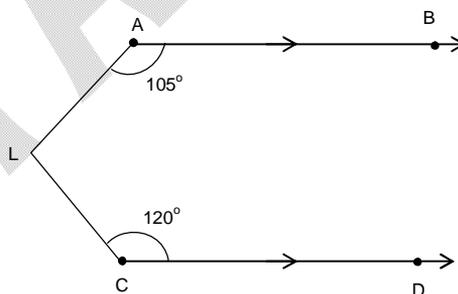
This part contains 4 Multiple Choice Questions number 99 to 102. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

99. In $\triangle ABC$, if AD divides BC in the ratio $m : n$, then find the ratio of the areas of $\triangle ABD$ & $\triangle ADC$.
 (A) $m+n : n$ (B) $m : m+n$
 (C) $m : n$ (D) $m^2 : n^2$

100. In the following figure, $\angle BOP = 2x^\circ$, $\angle AOP = 2y^\circ$, OC and OD are angle bisectors of $\angle BOP$ and $\angle AOP$ respectively. Find the value of $\angle COD$:
 (A) 75°
 (B) 90°
 (C) 100°
 (D) 120°



101. If AB is parallel to CD, then angle ALC is equal to
 (A) 75°
 (B) 135°
 (C) 110°
 (D) 145°



102. The value of $\left(\frac{x^b}{x^c}\right)^{\frac{1}{bc}} \cdot \left(\frac{x^c}{x^a}\right)^{\frac{1}{ca}} \cdot \left(\frac{x^a}{x^b}\right)^{\frac{1}{ab}}$ is equal to
 (A) x (B) $\frac{1}{x}$
 (C) 1 (D) -1

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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. Which of the following is the exception of cell theory?
(A) Bacteria (B) Fungi
(C) Lichen (D) Virus
104. Microtubules are absent in:
(A) Mitochondria (B) Centriole
(C) Flagella (D) Spindle fibres
105. Cytoskeleton is made up of:
(A) Calcium carbonate granules (B) Cellulose deposits
(C) Cellulosic microfibrils (D) Proteinaceous filaments
106. Choose the correctly matched pair.
(A) Inner lining of salivary ducts- squamous epithelium
(B) Moist surface of buccal cavity- pseudostratified epithelium
(C) Tubular parts of nephrons- Cuboidal epithelium
(D) Inner surface of bronchioles- Squamous epithelium
107. Which one of the following mammalian cells is not capable of metabolising glucose to carbon-dioxide aerobically?
(A) White blood cells (B) Unstriated muscle cells
(C) Liver cells (D) Red blood cells
108. The nucleus is covered by
(A) Porous single membrane (B) Non-porous single membrane
(C) Non-porous double membrane (D) Porous double membrane
109. With reference to meristematic tissue consider the following statements.
(i) They are made up of old and mature cells.
(ii) They give rise to permanent tissues.
(iii) They are compactly arranged.
(iv) Intercellular spaces are absent.
(v) They have dense cytoplasm.
Which of the above statement is/are **NOT** correct?
(A) (i) only (B) (i) and (iii) only
(C) (ii), (iv) and (v) only (D) (iii) and (v) only
110. Bordered pits are found in:
(A) Vessel wall (B) Sieve cells
(C) Sieve tube (D) Companion cells

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FIITJEE SAMPLE PAPER – 2021

(FIITJEE Talent Reward Exam - 2021)

for students presently in

Class 9 (Paper 1)

ANSWERS

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