

FTRE

FIITJEE TALENT REWARD EXAM

SAMPLE PAPER

for Students presently in Class X

Paper 2

Basic School, CUET, JEE Main & Chemistry Olympiad

Duration : 120 minutes

Maximum Marks : 276

Please read the instructions and guidelines carefully :

Important Note : Please ensure to accurately input the details for the Class and Paper No. as indicated at the top of this sheet into the corresponding columns / fields on the OMR sheet before proceeding with the paper. Incorrectly filled information regarding the class or paper may result in inaccurate outcomes or results.

"This paper has been scientifically designed to evaluate your potential – manifested and hidden for the target examinations mentioned in various sections of the paper. Thus, your adherence to the instructions is critical in the evaluation of the same"

1. This Question paper consists of 4 sections.
2. **Student should devote allotted time for each section. If a section is easy, then it is easy for everyone & was meant to be like that with a goal in mind. Do not switch over to another section if you find the section to be easy. If a section is tough, then it is tough for everyone.** You are advised to spend 30 Minutes on Section-I, 30 Minutes on Section-II and 30 Minutes on Section-III and 30 Minutes on Section-IV. Dedicating the required time to finish each section successfully is essential. Opening the next section before completing the allotted time for the preceding section is not permitted. This adherence is crucial for assessing your true potential, as each section is meticulously crafted to evaluate your potential for the corresponding competitive examinations.
3. Candidate should open the seal of Section-II only after devoting 30 minutes on Section-I and Seal for Section-III is to be opened only after devoting 30 minutes on Section-II and seal for Section-IV after devoting 30 minutes on Section-III.
4. Sheets will be given to each candidate for rough work. Candidate must fill all details on the rough sheet and submit the same to invigilator along with OMR sheet. Candidate must mention the Question No. while doing the rough work in the sheet.
5. Please note candidates are not allowed to bring any prohibited items into the exam hall such as electronic devices, mobile phones, smart watch, earphones, calculators, books, notes, formula sheets, and bags.
6. Marking scheme is given in table below:

Section	Subject	Question no.	Marking Scheme for each question	
			Correct answer	Wrong answer
SECTION – I (Basic School) Time Allotted: 30 Minutes	PHYSICS (PART-A)	1 to 10	+1	0
	CHEMISTRY (PART-B)	11 to 20	+1	0
	MATHEMATICS (PART-C)	21 to 30	+1	0
SECTION – II (CUET) Time Allotted: 30 Minutes	PHYSICS (PART-A)	31 to 40	+5	-1
	CHEMISTRY (PART-B)	41 to 50	+5	-1
	MATHEMATICS (PART-C)	51 to 60	+5	-1
SECTION – III (JEE Main) Time Allotted: 30 Minutes	PHYSICS (PART-A)	61 to 64	+4	-1
	CHEMISTRY (PART-B)	65 to 68	+4	-1
	MATHEMATICS (PART-C)	69 to 72	+4	-1
SECTION – IV (Chemistry Olympiad) Time Allotted: 30 Minutes	CHEMISTRY (PART-A)	73 to 80	+3	-1
	CHEMISTRY (PART-B)	81 to 84	+6 * Partial Marking	0

* Partial Marking: (Q. No. 81 to 84):

Full Marks : +6 If only (all) the correct option(s) is(are) chosen;

Partial Marks : +4.5 If all the four options are correct but ONLY three options are chosen;

Partial Marks : +3 If three or more options are correct but ONLY two options are chosen, both of which are correct;

Partial Marks : +1.5 If two or more options are correct but ONLY one

option is chosen and it is a correct option;

Zero Marks : 0 If unanswered/incorrect option(s) chosen

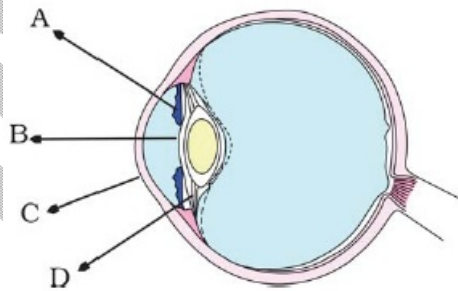
Section - I

Time: 30 Minutes

PHYSICS - (PART - A)

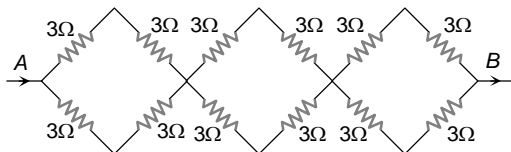
This part contains 10 Multiple Choice Questions number 1 to 10. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

- The focal length of a spherical mirror is equal to
 (A) $\frac{u+v}{uv}$ (B) $\frac{1}{v} + \frac{1}{u}$
 (C) $\frac{uv}{u+v}$ (D) $u+v$
- Total internal reflection is possible to observe, when a light ray travels from
 (A) air into water (B) air into glass
 (C) water into glass (D) glass into water
- The unit of refractive index is
 (A) metre (B) degree
 (C) dioptre (D) it has no units
- In the figure of the human eye, the cornea is represented by the letter



- (A) A (B) B
(C) C (D) D
- Myopia is the defect of vision due to which a person finds difficulty in seeing
 (A) distant objects (B) near objects
 (C) objects at all distance (D) colours
- The light which undergoes least deviation through a prism is
 (A) Violet (B) Yellow
 (C) Red (D) Green
- Color of the eye is decided by
 (A) Iris (B) Pupil
 (C) Eye lens (D) Retina

8. The blue colour of the sky is due to the phenomenon of
 (A) scattering (B) dispersion
 (C) reflection (D) refraction
9. In the network of resistors shown in the adjoining figure, the equivalent resistance between A and B is



- (A) 54 ohm (B) 18 ohm
 (C) 36 ohm (D) 9 ohm
10. The light reflected by a plane mirror may form a real image
 (A) If the rays incident on the mirror are diverging
 (B) If the rays incident on the mirror are converging
 (C) If the object is placed very close to the mirror
 (D) Under no circumstances

CHEMISTRY – (PART – B)

This part contains 10 Multiple Choice Questions number 11 to 20. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

11. Which of the following non-metals sublimes on heating?
 (A) Fluorine (B) Chlorine (C) Bromine (D) Iodine
12. Acid rain is caused due to
 (A) $\text{CO}_2, \text{O}_2, \text{SO}_2$ (B) $\text{CO}_2, \text{NO}_2, \text{H}_2$
 (C) $\text{SO}_2, \text{N}_2, \text{O}_2$ (D) $\text{CO}_2, \text{SO}_2, \text{NO}_2$
13. Which of the following will undergo addition reaction?
 (A) CH_4 (B) C_3H_8
 (C) C_2H_6 (D) C_2H_4
14. Which of the following statement is false?
 (A) China rose is natural indicator
 (B) Repeated cultivation by farmers makes soil acidic
 (C) Ant or bee sting contains acetic acid
 (D) Majority of factories waste are acidic in nature
15. Baking powder is
 (A) a mixture (B) a compound
 (C) an element (D) a salt
16. Which of the following is not a hydrated salt?
 (A) Blue vitriol (B) Baking soda
 (C) Washing soda (D) Epsom salt
17. Reducing agent in thermite process is
 (A) Mg (B) Al
 (C) Cr (D) Fe

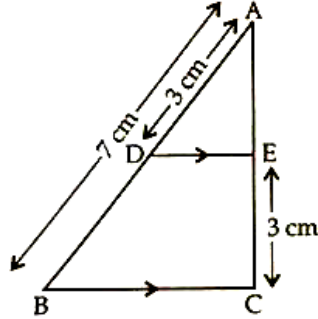
18. Which of the following pair will give displacement reaction?
 (A) NaCl solution and copper metal (B) $MgCl_2$ solution and Aluminium metal
 (C) $FeSO_4$ solution and silver metal (D) $AgNO_3$ solution and copper metal
19. Phenolphthalein is
 (A) yellow in acidic medium pink in basic medium
 (B) pink in acidic medium, colourless in basic medium
 (C) colourless in acidic medium, pink in basic medium
 (D) pink in acidic medium, yellow in basic medium
20. A soap molecules has a
 (A) hydrophobic head and hydrophobic tail
 (B) hydrophobic head and hydrophilic tail
 (C) hydrophilic head and hydrophilic tail
 (D) hydrophilic head and hydrophobic tail

MATHEMATICS – (PART – C)

This part contains 10 Multiple Choice Questions number 21 to 30. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

21. Which of the following straight lines passes through the origin?
 (A) $x + y = 4$ (B) $x^2 + y^2 = -16$ (C) $x + y = 5$ (D) $x = 4y$
22. For what value of k the quadratic equation $12x^2 + 4kx + 3 = 0$ has equal zeroes.
 (A) 4 (B) ± 5 (C) -4 (D) ± 3
23. The largest number that will divide 398,436 and 542 leaving remainders 7, 11 and 15 respectively is
 (A) 17 (B) 11 (C) 34 (D) 45
24. If one of the zeroes of the cubic polynomial $x^3 + ax^2 + bx + c$ is -1 , then the product of the other two zeroes is
 (A) $b - a + 1$ (B) $b - a - 1$ (C) $a - b + 1$ (D) $a - b - 1$
25. A vertical stick 20 m long casts a shadow 10 m long on the ground at the same time, a tower casts a shadow 50 m long on the ground, the height of the tower is
 (A) 100 m (B) 120 m (C) 25m (D) 200 m
26. The slope of $2x + 3y + 4 = 0$ is
 (A) $-\frac{3}{2}$ (B) $-\frac{2}{3}$ (C) $\frac{2}{3}$ (D) $\frac{3}{2}$
27. If -4 is a root of the quadratic equation $x^2 + px - 4 = 0$ and the quadratic equation $x^2 + px + k = 0$ has equal roots, then the value of k is
 (A) 3 (B) $\frac{4}{9}$ (C) $\frac{7}{9}$ (D) $\frac{9}{4}$
28. If the sum of the series $2+ 5+ 8+11 \dots\dots$ is 60100, then the numbers of terms are
 (A) 100 (B) 200 (C) 150 (D) 250

29. If the roots of the equation $x^3 - 12x^2 + 39x - 28 = 0$ are in A.P., then their common difference will be
 (A) ± 1 (B) ± 2 (C) ± 3 (D) ± 4
30. In the given figure, $DE \parallel BC$. If $AD = 3$ cm, $AB = 7$ cm and $EC = 3$ cm, then the length of AE is



- (A) 2 cm (B) 2.25 cm (C) 3.5 cm (D) 4 cm

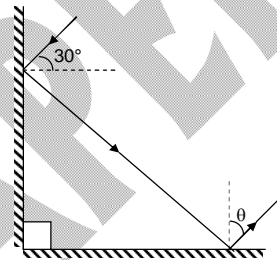
Section – II

Time: 30 Minutes

PHYSICS – (PART – A)

This part contains 10 Multiple Choice Questions number 31 to 40. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

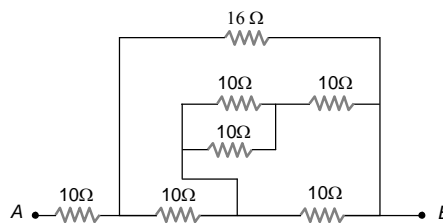
31. What is the value of θ in the following diagram?
 (A) 30°
 (B) 45°
 (C) 90°
 (D) 60°



32. If an incident ray passes through the centre of curvature of a spherical mirror, the reflected ray will
 (A) Pass through the pole
 (B) Pass through the focus
 (C) Retrace its path
 (D) both (A) and (B) are correct
33. The combination of a convex lens of focal length 6 cm and a concave lens of focal length f acts as a convex lens of focal length 8 cm. The value of f is
 (A) 12 cm
 (B) 15 cm
 (C) 24 cm
 (D) 3 cm
34. An air bubble in a glass slab of refractive index 1.5 is 5 cm deep when viewed from one face and 2 cm deep when viewed from the opposite face. The thickness of the slab is
 (A) 10.5 cm
 (B) 7 cm
 (C) 10 cm
 (D) 7.5 cm
35. A person cannot see an object lying beyond 10 metres. The power of lens used to rectify this defect will be
 (A) + 0.1 D
 (B) + 0.2 D
 (C) - 0.2 D
 (D) - 0.1 D
36. A convex lens and a concave lens, each having same focal length of 25 cm, are put in contact to form a combination of lenses. The power in diopters of the combination is
 (A) Zero
 (B) 25
 (C) 50
 (D) infinite
37. The critical angle for diamond (refractive index = 2) is
 (A) About 20°
 (B) 60°
 (C) 45°
 (D) 30°

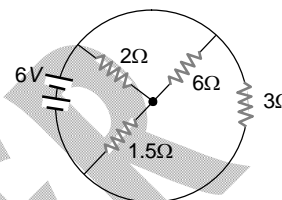
38. Value of R_{eq} across A and B

- (A) $8\ \Omega$
 (B) $10\ \Omega$
 (C) $18\ \Omega$
 (D) $24\ \Omega$



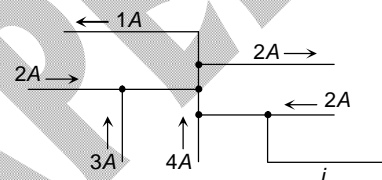
39. The total current supplied to the circuit by the battery is

- (A) 1 A
 (B) 2 A
 (C) 4 A
 (D) 6 A



40. The figure here shows a portion of a circuit. What are the magnitude of the current i in the lower right-hand wire

- (A) 7 A
 (B) 8 A
 (C) 6 A
 (D) 2 A



CHEMISTRY - (PART - B)

This part contains 10 Multiple Choice Questions number 41 to 50. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

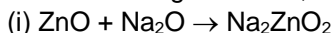
41. During roasting which of the following poisonous gas is mainly produced

- (A) CO
 (B) CO₂
 (C) SO₂
 (D) N₂O

42. Which species contain coordinate, covalent as well as ionic bonds?

- (A) H₂SO₄
 (B) NH₄NO₃
 (C) NaOCl
 (D) K₂CrO₄

43. In the following reactions, ZnO is respectively acting as a/an



- (A) base and acid
 (B) base and base
 (C) acid and acid
 (D) acid and base

44. The aqueous solution of disodium hydrogen phosphate is

- (A) Acidic
 (B) Neutral
 (C) Basic
 (D) None

45. Isomerism exhibit by acetic acid and methyl formate is

- (A) Functional
 (B) Chain
 (C) Geometrical
 (D) Central

46. Which of the following statement is false regarding metals?

- (A) All metals are solid in nature
 (B) Metals can be used to make cooking utensils
 (C) Generally most of metals having high melting and boiling points
 (D) Copper is used generally to make electrical wires

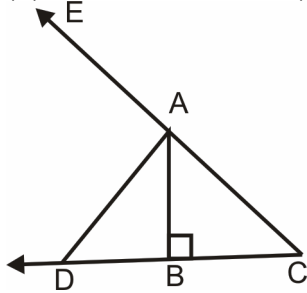
47. Which of the following is acid salt(s)
 (i) Sodium bisulphite (ii) potassium chloride
 (iii) potassium bisulphite (iv) Sodium carbonate
 (A) (i), (ii) & (iv) (B) (ii) & (iv)
 (C) (i), (ii) & (iii) (D) (i) & (iii)
48. Two test tubes A & B contain aqueous solutions of potassium iodide and lead nitrate separately. When these two test-tubes A & B are mixed to each other, results into x & y. The x & y are : -
 (A) yellow ppt. , yellow solution (B) yellow ppt. , Colourless solution
 (C) white ppt. , yellow solution (D) white ppt. , Colourless solution
49. Which of the following reaction is endothermic?
 (A) $C + O_2 \rightarrow CO_2$ (B) $CaCO_3 \rightarrow CaO + CO_2$
 (C) $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$ (D) $CaO + H_2O \rightarrow Ca(OH)_2$
50. An element X on exposure to moist air turns reddish brown and a new compound y is formed substance X and Y are
 (A) X = Ag, y = Ag₂S (B) X = Cu, y = Cu₂O
 (C) X = Al, y = Al₂O₃ (D) X = Fe, y = Fe₂O₃ . x H₂O

MATHEMATICS – (PART – C)

This part contains 10 Multiple Choice Questions number 51 to 60. Each question has 4 choices (A), (B), (C) and (D), out of which ONLY ONE is correct.

51. If $a = \sqrt{11} + \sqrt{3}$, $b = \sqrt{12} + \sqrt{2}$ and $c = \sqrt{6} + \sqrt{4}$, then which of the following holds true?
 (A) $c > a > b$ (B) $a > b > c$ (C) $a > c > b$ (D) $b > a > c$
52. Four bells toll at intervals of 10 seconds, 15 seconds, 20 seconds and 30 seconds respectively. If they toll together at 10:00 am, at what time will they toll together for the first time after 10 am ?
 (A) 10:01 am (B) 10:02 am (C) 10:00:30 am (D) 10:00:45 am
53. In how many ways can 1500 be resolved into two factors?
 (A) 18 (B) 12 (C) 24 (D) 36
54. If $\frac{\sin^2 \theta - 5 \sin \theta + 3}{\cos^2 \theta} = 1$, then θ can be _____.
 (A) 30° (B) 45° (C) 60° (D) 0°
55. In the given figure, $\overline{DE} \parallel \overline{AC}$. Find the value of x,
 (A) 1 (B) 2 (C) 3 (D) 4
56. If LCM of f(x) and g(x) is $6x^2 + 13x + 6$, then which of the following cannot be the HCF of f(x) and g(x)?
 (A) $2x + 3$ (B) $3x + 1$ (C) $(2x + 3)(3x + 2)$ (D) $3x + 2$
57. If $\sqrt[3]{75} = \sqrt[4]{45} = \sqrt[5]{15} = 0$, then which of the statement is true :
 (A) $x + y = 2z$ (B) $x + y = 3z$ (C) $x - y = 2z$ (D) $x - y = 3z$

58. In the figure above (not to scale), $\overline{AB} \perp \overline{CD}$ AD is the bisector of $\angle BAE$. $AB = 3$ cm and $AC = 5$ cm. Find CD.
 (A) 6 cm. (B) 8 cm (C) 10 cm (D) None of these



59. Choose the correct value of $\frac{1}{\sqrt{9}+\sqrt{10}} + \frac{1}{\sqrt{10}+\sqrt{11}} + \frac{1}{\sqrt{11}+\sqrt{12}} + \dots$ up to 91 terms from the following options:
 (A) 7 (B) 8 (C) 6 (D) 9
60. In a $\triangle ABC$, $\angle B < \angle C$ and the values of B and C satisfy the equation $2 \tan x - k(1 + \tan^2 x) = 0$, where $(0 < k < 1)$. Then the measure of $\angle A$ is
 (A) $\frac{\pi}{3}$ (B) $\frac{2\pi}{3}$ (C) $\frac{\pi}{2}$ (D) $\frac{3\pi}{4}$

Section – III

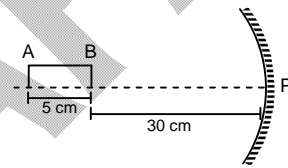
Time: 30 Minutes

PHYSICS – (PART – A)

This part contains **TWO (02)** comprehensions. Based on each comprehension, there are **TWO (02)** questions of **Multiple Choice Questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

Comprehension-1 for Q. No. 61 to 62

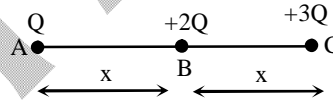
A thin rod of length 5 cm lies along the principal axis of the concave mirror of focal length 15 cm in such a way that the end closer to the pole is 30 cm away from it (as shown in figure)



61. Find the distance of image of 'A' from pole 'P'.
 (A) 20.25 (B) 22.5
 (C) 35 (D) 26.25
62. Find the distance of image of 'B' from pole 'P'.
 (A) 20 cm (B) 30 cm
 (C) 15 cm (D) 10 cm

Comprehension-2 for Q. No. 63 to 64

The charges of value Q , $+2Q$, $+3Q$ are placed at point A, B, and C respectively.



63. Find the force on charge A:
 (A) $\frac{9 KQ^2}{4 x^2}$ (B) $\frac{10 KQ^2}{4 x^2}$
 (C) $\frac{11 KQ^2}{4 x^2}$ (D) $\frac{13 KQ^2}{4 x^2}$
64. Find the force on charge B:
 (A) $5 \frac{KQ^2}{x^2}$ (B) $6 \frac{KQ^2}{x^2}$ (C) $7 \frac{KQ^2}{x^2}$ (D) $4 \frac{KQ^2}{x^2}$

CHEMISTRY – (PART – B)

This part contains **TWO (02)** comprehensions. Based on each comprehension, there are **TWO (02)** questions of **Multiple Choice Questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

Comprehension-1 for Q. No. 65 to 66

A homologous series is a collection of compounds with the same general formula that differ only in the carbon chain length. Compounds in a homologous series have same functional groups, resulting in chemical and physical properties that are comparable.

The homologous series of straight-chained alkanes begins methane (CH_4), ethane (C_2H_6), propane (C_3H_8), butane (C_4H_{10}), and pentane (C_5H_{12}).

65. Which of the following is not observed in a homologous series?
 (A) Change in chemical properties
 (B) Difference in $-\text{CH}_2$ and 14u molecular mass
 (C) Gradation in physical properties
 (D) Same functional group
66. Which group of compounds is part of a homologous series?
 (A) CH_4 , C_2H_4 , C_3H_8
 (B) C_3H_6 , C_3H_8 , $\text{C}_3\text{H}_7\text{OH}$
 (C) CH_3OH , $\text{C}_2\text{H}_5\text{OH}$, $\text{C}_3\text{H}_7\text{OH}$
 (D) $\text{CH}_3\text{CO}_2\text{H}$, $\text{CH}_3\text{CH}_2\text{OH}$, HCO_2H

Comprehension-2 for Q. No. 67 to 68

An oxidizing agent (often referred to as an oxidant) is a chemical species that tends to oxidize other substances. A substance which loses electrons to other substances in a redox reaction and gets oxidised to a higher valency state is called a reducing agent. A redox equation can be balanced using the following stepwise procedure: (1) Divide the equation into two half-reactions. (2) Balance each half-reaction for number of atoms and charge. (3) Equalize the number of electrons transferred in each half-reaction. (4) Add the half-reactions together

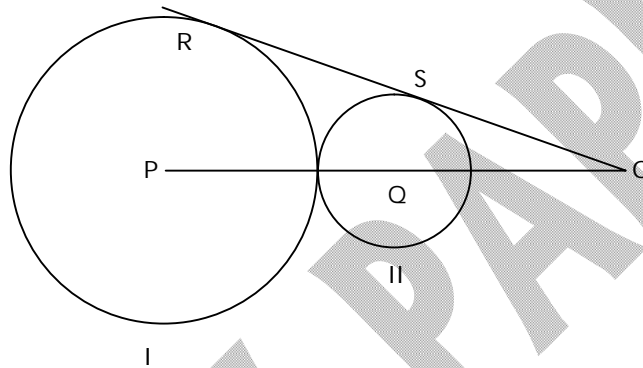
67. What is the value of x in given equation? $y\text{Al} + x\text{H}^+ \rightarrow y\text{Al}^{3+} + z\text{H}_2$
 (A) 2
 (B) 4
 (C) 6
 (D) 8
68. What is the ratio of coefficients reducing agent to oxidizing agent, if the following reaction is correcting balanced?
 $\text{NH}_3 + \text{O}_2 \rightarrow \text{NO} + \text{H}_2\text{O}$
 (A) 4 : 5
 (B) 5 : 4
 (C) 5 : 3
 (D) 3 : 5

MATHEMATICS – (PART – C)

This part contains **TWO (02)** comprehensions. Based on each comprehension, there are **TWO (02)** questions of **Multiple Choice Questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

Comprehension-1 for Q. No. 69 to 70

In the adjoining figure, I and II are circles with centre P and Q respectively. The two circles touch each other and have a common tangent that touches them at point R and S respectively. This common tangent meet the line joining P and Q at O. The diameters and I and II are in the ratio 4 : 3. It is known that the length of PO is 28 cm.



69. What is the ratio of the length of PQ to that of QO?
 (A) 1 : 2 (B) 2 : 3 (C) 1 : 3 (D) 3 : 1
70. Radius of circle II is
 (A) $3/2$ cm (B) $5/2$ cm (C) 3 cm (D) none of these

Comprehension-2 for Q. No. 71 to 72

If α, β, γ are the zeroes of $ax^3 + bx^2 + cx + d$, then

$$\sum \alpha = -\frac{b}{a}, \sum \alpha\beta = \frac{c}{a}, \alpha\beta\gamma = -\frac{d}{a}$$

71. If α, β, γ are the zeroes of $x^3 - 5x^2 - 2x + 24$ and $\alpha\beta = 12$ then $\gamma =$
 (A) 2 (B) -2 (C) 3 (D) -3
72. If α, β, γ are zeroes of $x^3 - 5x^2 - 16x + 80$ the sum of zeroes are :
 (A) 3 (B) 4 (C) 5 (D) 2

Section – IV

Time: 30 Minutes

CHEMISTRY – (PART – A)

This part contains 8 Multiple Choice Questions number 73 to 80. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

73. Which of the following carbon atoms is likely to possess tetrahedral geometry?
- $$\text{H}_2\overset{4}{\text{C}}=\overset{3}{\text{C}}\text{H}-\overset{2}{\text{C}}\text{H}_2-\overset{1}{\text{C}}\text{OOH}$$
- (A) 1 (B) 2
(C) 3 (D) 4
74. According to Lewis acid-base concept, which is a correct statement?
(A) Species in which central atom has completed octet cannot act as acid.
(B) All negatively charged ions are acids.
(C) Molecule in which the central atom has vacant "d" orbitals acts as acid.
(D) All positively charged ions are bases.
75. In the disproportionation reaction (unbalanced),
 $\text{Br}_2 + \text{OH}^- \rightarrow \text{Br}^- + \text{BrO}_3^- + \text{H}_2\text{O}$,
the ratio of Br_2 molecules undergoing oxidation and reduction is
(A) 5:1 (B) 1:5
(C) 2:3 (D) 3:2
76. What is the concentration of the solution that results from mixing 40.0 mL of 0.200 M HCl with 60.0 mL of 0.100 M NaOH?
(A) 0.150 M NaCl
(B) 0.0200 M NaCl and 0.0200 M HCl
(C) 0.0200 M NaCl and 0.0600 M HCl
(D) 0.0600 M NaCl and 0.0200 M HCl
77. Which statement is true about the most stable Lewis structure of CS_2 ?
(A) There are no lone pairs
(B) All bonds are double
(C) The central atom does not have an octet of electrons
(D) A sulphur atom must be central atom for structure to be stable
78. Which molecule has a sigma (σ) and two Pi (π) bonds between 2 carbons atoms
(A) C_2H_2 (B) C_2H_4
(C) C_2H_6 (D) C_3H_6
79. Mohr's salt is a
(A) Normal salt (B) Acid salt
(C) Basic salt (D) Double salt
80. The strong conjugate base is
(A) NO_3^{2-} (B) Cl^-
(C) SO_4^{2-} (D) CH_3COO^-

CHEMISTRY – (PART – B)

This part contains 4 Multiple Choice Multi Correct Type Questions number 81 to 84. Each question has 4 choices (A), (B), (C) and (D), out of which MORE THAN ONE are correct.

81. Which one of the following is true in case of base?
(A) It acts as an electron pair donor.
(B) It accepts proton
(C) It turns blue litmus red
(D) It is colourless in presence of phenolphthalein
82. Which of the following is not a homogenous reaction?
(A) $C(s) + O_2(g) \rightarrow CO_2(g)$
(B) $2Mg(s) + O_2(g) \rightarrow 2MgO(s)$
(C) $N_2(g) + O_2(g) \rightarrow 2NO(g)$
(D) $CaO(s) + H_2O(l) \rightarrow Ca(OH)_2(aq)$
83. Which of the following elements show disproportionation tendency?
(A) Cl
(B) Br
(C) F
(D) I
84. Which is true for diamond?
(A) all the four valence electrons are bonded to carbon atoms by covalent bonds
(B) it is a giant molecule
(C) it is made up of carbon atoms
(D) it cannot be burnt at any temperature

FIITJEE TALENT REWARD EXAM

for Students presently in **Class X** (Paper 2)

ANSWER KEY (SAMPLE PAPER)

1. C	2. D	3. D	4. C
5. A	6. C	7. A	8. A
9. D	10. B	11. D	12. D
13. D	14. C	15. A	16. B
17. B	18. D	19. C	20. D
21. D	22. D	23. A	24. A
25. A	26. B	27. D	28. B
29. C	30. B	31. D	32. C
33. C	34. A	35. D	36. A
37. D	38. C	39. C	40. B
41. C	42. B	43. D	44. C
45. A	46. A	47. D	48. B
49. B	50. D	51. B	52. A
53. B	54. A	55. A	56. B
57. B	58. C	59. A	60. C
61. D	62. B	63. C	64. D
65. A	66. C	67. C	68. A
69. C	70. C	71. B	72. C
73. B	74. C	75. B	76. D
77. B	78. A	79. D	80. D
81. A, B	82. A, B, D	83. A, B, D	84. A, B, C