

FIITJEE ADMISSION TEST

FOUR YEAR Classroom Program
SUPREME – Four Year Integrated School Program
USA UnivQuest – Four Year Classroom Program
USA UnivQuest–Four Year Integrated School Program

IQ, SCIENCE & MATHS

Time: 3 Hours

Maximum Marks: 403

Instructions:

1. **Caution: Question Paper CODE as given above MUST be correctly marked in the answer OMR sheet before attempting the paper. Wrong CODE or no CODE will give wrong results.**
2. This Questions paper consists of 3 Sections:
Section I–IQ (Q. 1 to 30), Section II–Science (Q. 31 to 60), Section III–Mathematics (Q. 61 to 90)
3. All the questions are multiple choice questions having only **one correct answer**.
Each Double star (**) marked question carries **+8 marks** for correct answer and **-3 marks** for wrong answer. Each Single star (*) marked question carries **+5 marks** for correct answer and **-2 marks** for wrong answer. Each of the rest of questions carries **+3 marks** for correct answer and **-1 mark** for wrong answer.
4. **You are advised to devote around 1 Hour on each Section as there will be minimum cutoff marks in each Section for qualifying.**
5. Answers have to be marked on the OMR sheet.
6. The Question Paper contains blank spaces for your rough work. No additional sheets will be provided for rough work.
7. Blank papers, clip boards, log tables, slide rule, calculator, cellular phones, pagers and electronic devices, in any form, are not allowed.
8. Write your Name, Registration Number and Test Centre in the space provided below.

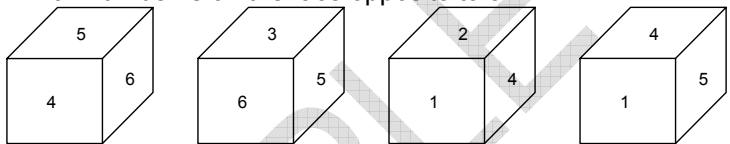
Registration Number :

Name of the Candidate : _____

Test Centre : _____

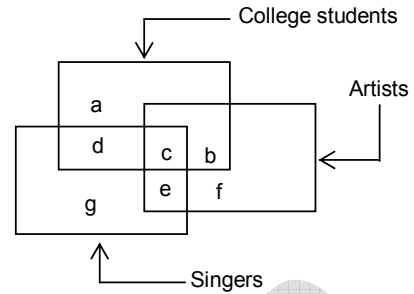
IQ**SECTION – I****Straight Objective Type**

*This Section contains 30 multiple choice questions numbered 1 to 30. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

1. What is the sequence if the following are arranged in a Dictionary ?
 (1) Telegraph (2) Telephone (3) Teleprinter (4) Telemetry (5) Telepathy
 (A) 14532 (B) 14253
 (C) 14523 (D) 14325
2. Look at the following words. No word should have more than 3 vowels. Which word does not confirm to this rule ?
 (A) SCARCITY (B) PROGNOSIS
 (C) COMPLEXITY (D) CONVULSION
- **3. If in the English alphabet, every alternate letter from B onwards is written in small letters while others are written in capitals, then how will the 3rd day from Monday be coded ?
 (A) WeDNesdaY (B) WEdnEsday
 (C) THURSDay (D) None of these
4. CLOCK is 42145, LEAN is 2068, CARE is 4690, then NECKLACE is :
 (A) 80546240 (B) 6054842
 (C) 80452640 (D) 50842604
- **5. Which number is on the face opposite to 3 ?

 (A) 4 (B) 2
 (C) 1 (D) 5

Space For Rough Work

Directions (6 – 10) : Given questions are based on the following diagram in which three rectangles are interlocked. Each rectangle represents a certain section of population. Different regions of the diagram are marked a to g.



6. College students who are artists but not singers is represented by
 (A) a (B) b
 (C) f (D) d
7. Artists who are neither college students nor singers are represented by
 (A) b (B) d
 (C) f (D) g
8. College students who are singers but not artists are represented by
 (A) a (B) b
 (C) d (D) g
9. College students who are artists as well as singers are represented by
 (A) c (B) f
 (C) g (D) b
10. Singers who are artists as well but not studying in college are represented by
 (A) e (B) c
 (C) d (D) b
11. Which one does not belong to the group?
 (A) Tomato (B) Orange
 (C) Sweet lemon (D) Pineapple
12. Fish : Water :: _____ : _____
 (A) Aero plane: Airport (B) Train: Platform
 (C) Parasite: Organism (D) Tiger: Deer
- **13. Snake : Reptile :: _____ : _____
 (A) Bat : Mammal (B) Cow : Calf
 (C) Fish : Pond (D) Soldier : Regiment

Space For Rough Work

14. Optimistic : Pessimistic :: _____ : _____
(A) Difficult : Impossible (B) Birds : Flight
(C) Tolerating : Disgusting (D) Export : Import
- *15. Some boys are standing in a queue. If the 10th boy from behind is 5 positions behind the 12th boy from the front, how many boys are there in the queue?
(A) 27 (B) 17
(C) 26 (D) 20
- *16. A cricket ball is lighter than a hockey ball. A volley ball is lighter than a football. A hockey ball is lighter than a football. Which among these four is the heaviest?
(A) cricket ball (B) hockey ball
(C) football (D) volley ball
17. Which of the following does not belong to the group?
(A) x (B) c
(C) v (D) Q

Directions (18–22): There are six persons A, B, C, D, E and F. C is the sister of F. B is the brother of E's husband. D is the father of A and grandfather of F. There are two fathers, three brothers and a mother in the group.

- *18. Who is the mother?
(A) A (B) B
(C) D (D) E
- *19. Who is E's husband?
(A) B (B) C
(C) A (D) F
- *20. How many male numbers are there in the group?
(A) 1 (B) 2
(C) 3 (D) 4
- **21. How is F related to E?
(A) uncle (B) husband
(C) son (D) daughter
- **22. Which of the following is a group of brothers?
(A) ABF (B) ABD
(C) BFC (D) BDF

Space For Rough Work

For question (23): Which one of the letter/s replaces the question mark (?)

23. A C F J ? U
 (A) L (B) M
 (C) N (D) O

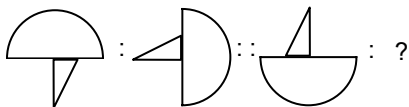
*24. Find the missing number

3	6	8
4	5	5
10	3	?
120	90	240

- (A) 4 (B) 6
 (C) 8 (D) 10
25. Consider the following set of digits : 7 8 9 7 6 5 3 4 2 8 9 7 2 4 5 9 2 9 7 6 4 7
 How many 7's are preceded by 9 and followed by 6?
 (A) 3 (B) 1
 (C) 2 (D) 4

26. TALE : LATE :: ? : CAFÉ

- (A) FACE (B) CAEF
 (C) CEFA (D) FEAC

**27.  :

- (A)  (B) 
 (C)  (D) 

Directions (28 –30): Find the odd man out:-

28. (A) hockey (B) football
 (C) tennis (D) chess
29. (A) cabbage (B) brinje
 (C) lady finger (D) peaches
30. (A) peddler (B) hawker
 (C) vendor (D) buyer

Space For Rough Work

Science

SECTION – II

Straight Objective Type

*This Section contains 30 multiple choice questions numbered 31 to 60. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

- *31. The role of lubricants is to
(A) increase friction (B) reduce friction
(C) increase wear and tear of object (D) None of these
- **32. Image formed by a plane mirror is
(A) virtual, behind the mirror and enlarged.
(B) virtual, behind the mirror and of the same size as the object.
(C) Real, at the surface of the mirror and enlarged.
(D) Real, behind the mirror and of the same size as the object.
- **33. The function of iris is to
(A) protect the interior the eye from accident.
(B) control the amount of light entering into the eye.
(C) allow light to enter inside the eye
(D) send the visual sensations to the brain
34. A rainbow is a result of
(A) reflection of light (B) scattering of light
(C) dispersion of light (D) none of these
35. Which of the following voices is likely to have maximum frequency?
(A) Baby girl (B) Baby boy
(C) a man (D) a woman
36. For a sound of high frequency, the pitch will be
(A) low (B) high
(C) pitch does not depend upon frequency (D) cant say

Space For Rough Work

37. For same amount of force acting on two surfaces, the pressure will be more on that surface whose area is
(A) more (B) less
(C) pressure will not depend upon area (D) pressure will not depend upon force.
- *38. Waves produced during earthquake are also known as
(A) electromagnetic wave (B) Non-mechanical waves
(C) seismic waves (D) none of these.
39. Which of the following would you prefer to use to read very small letters printed on the pages of a dictionary?
(A) A concave lens of large focal length (B) A convex lens of large focal length
(C) A convex lens of short focal length (D) A concave lens of short focal length
40. The distance between the center of a lens and its focus is known as
(A) Principal length (B) Focal length
(C) Optical length (D) Virtual length
- *41. The angle of reflection is the angle between
(A) the incident ray and the surface of the mirror
(B) the reflected ray and the surface of the mirror
(C) normal at the point of incidence and the incident ray
(D) normal at the point of incidence and the reflected ray
42. We can obtain the spectrum of sunlight through
(A) plain slab (B) a convex lens
(C) thermometer (D) glass prism
43. Rain coats are made up of
(A) melamine (B) Bakelite
(C) Polyesters (D) PVC
- *44. Which of the following is heat stable?
(A) Melamine (B) Polythene
(C) Polypropylene (D) Nylon

Space For Rough Work

45. Metals are
(A) Ductile (B) have low melting point
(C) have low boiling point (D) low tensile strength
- *46. Metals on reaction with HCl produce
(A) H₂ gas (B) Cl₂ gas
(C) H₂O (D) No reaction
- **47. Metal oxides have pH
(A) < 7 (B) = 7
(C) > 7 (D) 0
48. Main constituent of natural gas is
(A) butane (B) isobutane
(C) both (A) and (B) (D) CH₄
49. Which of the following is liquid at room temperature?
(A) Hg (B) Bromine
(C) Iodine (D) (A) and (B) both
- *50. Very reactive metals are present
(A) at the top of the activity series (B) at the bottom of the activity series
(C) middle of the activity series (D) not present in the activity series
51. Good fuel is
(A) high calorific value (B) low calorific value
(C) no poisonous combustion products (D) (A) and (C) both
52. Maximum percentage of carbon is present in
(A) Peat (B) Lignite
(C) Bituminous (D) Anthracite
- **53. Metals combine with O₂ to give
(A) basic oxides (B) acidic oxides
(C) neutral oxides (D) salt
54. Which of the following affects the ozone layer?
(A) CO₂ (B) CFCs
(C) Soot (D) Dust

Space For Rough Work

55. Tetanus is caused by
(A) Virus (B) Bacteria
(C) Fungi (D) Mycoplasma
- *56. The disease caused by the deficiency of iodine
(A) goiter (B) anaemia
(C) ricket (D) kwashiorkor
- **57. Which metal is present in the human body in greater percentage?
(A) calcium (B) sodium
(C) potassium (D) iron
58. The body system that gives you support and allows movement is
(A) Skeletal system (B) Circulatory system
(C) Respiratory system (D) Excretory system
59. The comma shaped bacteria is
(A) streptococcus (B) staphylococcus
(C) vibrio (D) micrococcus
60. Which food group best provides necessary nutrients for healthy teeth and bones?
(A) Milk and dairy products (B) Fruits and vegetables
(C) Bread and cereal (D) Meat

Space For Rough Work

Mathematics**SECTION - III****Straight Objective Type**

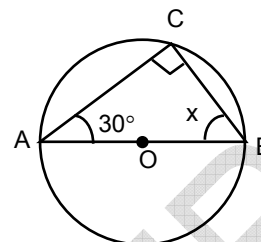
This Section contains 30 multiple choice questions numbered 61 to 90. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

61. Sum of two irrational numbers is always
 (A) rational (B) irrational
 (C) integer (D) None of these
62. If $f(x) = ax^2 + bx + a$ is divided by $(x - b)$ $a, b \neq 0$, remainder is 'a', then a is
 (A) b^2 (B) -1
 (C) 0 (D) $a + b$
63. If certain amount of money is distributed among A, B, C in ratio 4 : 5 : 7, such that C received 100 Rs. less than the sum of amount A and B received. Total amount distributed is
 (A) 1000 (B) 700
 (C) 900 (D) 800
64. When $f(x) = x^4 + x^2 - 4x + 6$ is divided by $(x + 1)$, the remainder is
 (A) 10 (B) 0
 (C) 12 (D) 8
65. L.C.M. of two numbers is 500, their HCF is 10. If one number is 20, other number is
 (A) 100 (B) 200
 (C) 400 (D) 250
66. If a chord of circle with radius 5 cm subtends a right angle at the centre, then length of chord is
 (A) $\sqrt{2}$ (B) $5/\sqrt{2}$
 (C) $5\sqrt{2}$ (D) 10
- *67. A man starts from a point and walks 10 km towards east and then 10 km towards north. The position from the starting point is
 (A) 14.14 km (B) 15 km
 (C) 17 km (D) 12 km
68. Difference of square of a number and square of 10 is 576. The number is
 (A) 26 (B) 24
 (C) 25 (D) none of these

Space For Rough Work

- *69. An alloy contains 20% copper , 25 % iron and rest silver. If total weight of alloy is 200 gm then silver is
 (A) 10 gm (B) 100 gm
 (C) 150 gm (D) 110 gm

70. The value of x is
 (A) 30° (B) 45°
 (C) 55° (D) 60°



- *71. If length of minute hand of a clock is 14 cm, the area swept by the minute hand in one minute is
 (A) $\frac{154}{15}$ cm² (B) $\frac{157}{15}$ cm²
 (C) $\frac{158}{15}$ cm² (D) 10 cm²

- **72. If $X = \frac{8ab}{a+b}$, then the value of $\frac{X+4a}{X-4a} + \frac{X+4b}{X-4b}$ is
 (A) 1 (B) -1
 (C) 2 (D) -2

73. If the sides of a triangle are 3 cm, 4 cm and 5 cm respectively, then the area of the triangle is
 (A) 6.5 cm² (B) 6 cm²
 (C) 7 cm² (D) none of these

- *74. $\frac{1+\sqrt{3}}{1-\sqrt{3}} = \frac{x-1}{x+1}$, then x is
 (A) $\sqrt{3}$ (B) $-\sqrt{3}$
 (C) $-\frac{1}{\sqrt{3}}$ (D) $\frac{1}{\sqrt{3}}$

Space For Rough Work

75. If $x + \frac{1}{x} = 5$, then the value of $x^2 + \frac{1}{x^2}$ is
 (A) 23 (B) 25
 (C) 27 (D) 29
76. The remainder when $x^2 - 10x + 25$ is divided by $x - 5$ is
 (A) 1 (B) $\frac{1}{2}$
 (C) 0 (D) 2
77. If the cost of land increases at the rate of 10% p.a. and the present cost of land is Rs. 50000, then its cost after three years is
 (A) Rs. 60550 (B) Rs. 66550
 (C) Rs. 70550 (D) Rs. 80550
- **78. The ratio of area and perimeter of a square is 2 : 1, then area of circle with diameter equal to diagonal of square is
 (A) 16π (B) 8π
 (C) 32π (D) 64π
- *79. The area of a trapezium is 37.5 cm^2 . If the distance between its parallel sides is 3 cm and one of its parallel sides is 8 cm, then the other side is
 (A) 8 cm (B) 25 cm
 (C) 17 cm (D) 11 cm
80. $4x^3 - 3x^2 + 2x - 4$ on division by $x + \frac{1}{2}$ leaves remainder
 (A) $\frac{25}{2}$ (B) $\frac{25}{3}$
 (C) $-\frac{25}{4}$ (D) $\frac{25}{4}$
- **81. A labourer is engaged for 20 days on the condition that he will receive for Rs. 60 for each day he works and will be fined Rs. 5 for each day he is absent. If he receives Rs. 745 in all, for how many days did he remain absent?
 (A) 7 days (B) 13 days
 (C) 8 days (D) 9 days

Space For Rough Work

- **82. If x ml pure alcohol is added to 400 ml of a 15% solution and after adding its strength becomes 32%, then the value of x is
(A) 50 ml (B) 75 ml
(C) 200 ml (D) 100 ml
- **83. The ages of A and B are in the ratio 3 : 8. Six years hence, their ages will be in the ratio 4 : 9. The present age of A is
(A) 18 years (B) 15 years
(C) 12 years (D) 21 years
- **84. A contractor employed 210 men to build a house in 60 days. After 12 days, he was joined by 70 more men. In how many days will the remaining work be finished?
(A) 40 days (B) 36 days
(C) 32 days (D) 30 days
85. A radio dealer marks a radio with a price which is 20% more than the cost price. He allows a discount of 10% on it. His gain is
(A) 8% (B) 10%
(C) 12% (D) 15%
86. If the selling price of 5 articles is the same as the cost price of 6 articles, then the gain percentage is
(A) 1% (B) 5%
(C) $16\frac{2}{3}\%$ (D) 20%
87. At simple interest, a sum becomes $\frac{6}{5}$ of itself in 4 years. The rate of interest per annum is
(A) 6% (B) $7\frac{1}{2}\%$
(C) 5% (D) 4%
88. If 35% of a number added to 39 is the number itself, the number is
(A) 60 (B) 65
(C) 75 (D) 105
- *89. If 11% of a number exceeds 7% of the number by 18, then the number is
(A) 72 (B) 360
(C) 450 (D) 720
90. The area of a square and a rectangle are equal. If the side of the square is 40 cm and the breadth of the rectangle is 25 cm, the length of the rectangle is
(A) 60 cm (B) 64 cm
(C) 40 cm (D) 48 cm

Space For Rough Work

FIITJEE ADMISSION TEST

for students presently in

Class-VIII

IQ, SCIENCE & MATHS

ANSWERS

SECTION – I (IQ)

1. C	2. D	3. D	4. C
5. A	6. B	7. C	8. C
9. A	10. A	11. A	12. C
13. A	14. D	15. C	16. C
17. D	18. D	19. C	20. D
21. C	22. A	23. D	24. B
25. C	26. A	27. A	28. D
29. D	30. D		

SECTION – II (Science)

31. B	32. B	33. B	34. C
35. A	36. B	37. B	38. C
39. C	40. B	41. D	42. D
43. D	44. A	45. A	46. A
47. C	48. D	49. D	50. A
51. D	52. D	53. A	54. B
55. B	56. A	57. A	58. A
59. C	60. A		

SECTION – III (Mathematics)

61. D	62. B	63. D	64. C
65. D	66. B	67. A	68. A
69. D	70. D	71. A	72. C
73. B	74. C	75. A	76. C
77. B	78. C	79. C	80. C
81. A	82. D	83. A	84. B
85. A	86. D	87. C	88. A
89. C	90. B		