

# FIITJEE SAMPLE PAPER – 2018

## (Big Bang Edge Test / Talent Recognition Exam)

for students presently in

### Class 6 (Paper 1)

Time: 3 Hours (9:30 am – 12:30 pm)

Code 6000

Maximum Marks: 354

#### Instructions:

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

1. This Question paper consists of 3 sections. All questions will be multiple choice single correct out of four choices with marking scheme in table below:

Section		Question no.	Marking Scheme for each question	
			correct answer	wrong answer
SECTION – I	APTITUDE TEST	1 to 5, 13 to 14, 22 to 23	+3	0
		6 to 12, 15 to 18, 24 to 27	+4	0
		19 to 21, 28 to 30	+5	0
SECTION– II & III (SCIENCE & MATHEMATICS)	PHYSICS	31 to 32, 36, 81	+3	0
		33 to 34, 37 to 38, 82	+4	0
		35, 39, 83	+5	0
	CHEMISTRY	40 to 41, 45, 84	+3	0
		42 to 43, 46 to 47, 85	+4	0
		44, 48, 86	+5	0
	MATHEMATICS	49 to 50, 59 to 60, 87	+3	0
		51 to 56, 61 to 66, 88, 89	+4	0
		57 to 58, 67 to 68, 90	+5	0
	BIOLOGY	69 to 70, 73, 77	+3	0
		71, 74 to 75, 78 to 79	+4	0
		72, 76, 80	+5	0

2. 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.
3. Blank papers, clip boards, log tables, slide rule, calculator, cellular phones, pagers and electronic devices, in any form, are not allowed.
4. **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.**
5. **See method of marking of bobbles of the back of cover page for question no. 81 to 90.**

**Note:** Please check this Question Paper contains all 90 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 : \_\_\_\_\_

For questions **81 to 90**

Numerical based questions single digit answer 0 to 9

**Example 1:**

If answer is 6.

Correct method:

- 0  1  2  3  4  5  6  7  8  9

**Example 2:**

If answer is 2.

Correct method:

- 0  1  2  3  4  5  6  7  8  9

**Section-I****APTITUDE TEST****Straight Objective Type**

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 series is given with one of the term missing. Choose the correct alternative that will continue the same pattern and replace the question mark (?) in the given series.

1. 97, 90, 76, 55, ?  
 (A) 28 (B) 27  
 (C) 26 (D) 25
2. 0, 2, 8, 14, ?, 34  
 (A) 20 (B) 23  
 (C) 24 (D) 25
3. BZA, DYC, FXE, ?, JVI  
 (A) HUG (B) HWG  
 (C) UHG (D) WHG

**Direction (Q. 4 to 5):** In the following questions given below is a sequence in which some letters are missing. From the choices, select the choice that gives the letters that can fill the blanks in the given sequence.

4. nc \_ ln \_ clnc \_ nc \_ l \_ ccl  
 (A) cclcc (B) ccnc  
 (C) clcl (D) cclcn
5. \_ stt \_ tt \_ tts \_  
 (A) tsst (B) sstt  
 (C) ttst (D) tsts
6. If in a certain code language, BROWSER is coded as RESWORB, then how TEACHER be coded in the same language?  
 (A) REHCEAT (B) REHCAET  
 (C) REHCTEA (D) AHRCTEA

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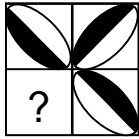
**Space for Rough Work**

7. In a certain code, BAKE is written as 5796 and FIRE is written as 3146. How is FEAR written in that code?  
 (A) 3564 (B) 3674  
 (C) 3574 (D) 3654
8. If LINGER is 123456 and FORCE is 98675, then FIERCE will be  
 (A) 345667 (B) 456678  
 (C) 345677 (D) 925675
9. If Z = 26 and ACT = 24, then BAT will be equal to  
 (A) 23 (B) 26  
 (C) 30 (D) 40
10. If + means  $\div$ , - means  $\times$ ,  $\div$  means + and  $\times$  means -, then  $36 \times 12 + 4 \div 6 + 2 - 3 = ?$   
 (A) 2 (B) 18  
 (C) 42 (D) 24
11. If a means +, b means -, c means  $\div$  and d means  $\times$ , then  $18 a 12 c 6 d 2 b 5 = ?$   
 (A) 15 (B) 25  
 (C) 17 (D) 45
12. If  $\div$  means +, - mean  $\div$ ,  $\times$  means - and + means  $\times$ , then  $\frac{(36 \times 4) - 8 \times 4}{4 + 8 \times 2 + 16 \div 1} = ?$   
 (A) 0 (B) 8  
 (C) 12 (D) 24
13. You go North, turn right, then right again and then go to the left. In which direction are you now?  
 (A) North (B) South  
 (C) East (D) West
14. In a row of girls facing to the North, A is 16<sup>th</sup> from the left end and 21<sup>th</sup> from the right end. How many girls are there in the row?  
 (A) 39 (B) 40  
 (C) 41 (D) 36
15. Shyam ranks from left end of the row is 25<sup>th</sup> and Mohan's ranks 25<sup>th</sup> from right end if the total number of students in this row 40 then how many students in between Shyam and Mohan?  
 (A) 10 (B) 8  
 (C) 7 (D) Can't be determined

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*Space for Rough Work*

16. In the given question, select a figure from amongst the four alternatives, which one placed in the blank space of figure (X) would complete the pattern.



(X)



(A)



(B)



(C)



(D)

17. Manoj is 24<sup>th</sup> from the right in a row of 40 boys. What is position from the left end?  
 (A) 18<sup>th</sup> (B) 16<sup>th</sup>  
 (C) 17<sup>th</sup> (D) None of these
18. Deepak walks 9 m towards South then he turns to his right and moved 5 m then he turns to his right and moves 4 m. Then he turns to his left and moves 7 m. Now how far is he from starting point and in which direction?  
 (A) 15 m South-West (B) 7 m South-West  
 (C) 15 m West (D) 13 m South-West

**Directions (Q. 19 to 21):** In each of the following questions, a word has been given, following by four other words. One of which can be formed by using the letters from the given word. Find that word.

19. REMEMBERING  
 (A) NEGRO (B) AGREE  
 (C) RAIN (D) GREEN
20. ARISTOCRATIC  
 (A) CREATION (B) STATIC  
 (C) SECRET (D) ARREST
21. CORRESPONDING  
 (A) DISCERN (B) RESPONSE  
 (C) REPENT (D) CORRECT
22. Introducing a man woman said, that he is the son of my mother's brother's father's son. Then how is woman related to that man?  
 (A) Nephew (B) Brother  
 (C) Son (D) None of these

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*Space for Rough Work*

23. If A is son of Q, Q and Y are sisters, Y's mother is Z, P is son of Z, then which one is definitely true?  
 (A) A and P are cousin (B) A is uncle of P  
 (C) A is maternal uncle of P (D) None of these

**Directions (Q. 24 to 27):** Which number will replace the question mark?

24.  $\begin{matrix} 17 & & 5 \\ & \diagdown & / \\ & & 85 \end{matrix}$        $\begin{matrix} 18 & & 9 \\ & \diagdown & / \\ & & 162 \end{matrix}$        $\begin{matrix} 15 & & ? \\ & \diagdown & / \\ & & 180 \end{matrix}$   
 (i)                      (ii)                      (iii)  
 (A) 12 (B) 18  
 (C) 20 (D) 25

25. 

$\begin{matrix} 343 & 1 \\ 7 & 1 \\ ? & 3 \\ 5 & 27 \end{matrix}$	
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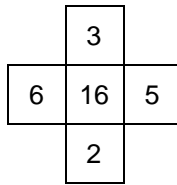
  
 (A) 125 (B) 27  
 (C) 25 (D) 23

26.  $\begin{matrix} 5 & 6 & 5 \\ 8 & 9 & 7 \\ 10 & 7 & ? \\ 400 & 378 & 315 \end{matrix}$   
 (A) 7 (B) 5  
 (C) 9 (D) 12

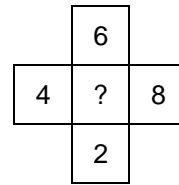
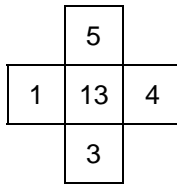
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*Space for Rough Work*

27. Find the missing number?



- (A) 30  
(C) 24



- (B) 20  
(D) 15

**Directions (Q. 28 to 30):** Study the following arrangement carefully and answer the question given below:

(i) A, B, C, D and E, five men are sitting in a line facing to South – while M, N, O, P and Q are five ladies sitting in a second line parallel to the first line and are facing to North.

(ii) B who is just next to the left of D, is opposite to Q.

(iii) C and N are diagonally opposite to each other.

(iv) E is opposite to O who is just to the right of M.

(v) P who is just to the left of Q, is opposite to D.

(vi) M is at one end of the line.

28. Who is sitting third to the right of O?

- (A) Q  
(B) N  
(C) M  
(D) Data inadequate

29. If B shifts to the place of E, E shifts to the place of Q, and Q shifts to the place of B, then who will be the second to the left of the person opposite of O?

- (A) Q  
(B) P  
(C) E  
(D) B

30. Which of the following pair is diagonally opposite to each other?

- (A) EQ  
(B) BO  
(C) AN  
(D) AM

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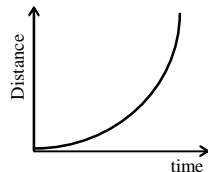
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**Section-II****Science & Mathematics****Physics****(Part - A)****Straight Objective Type**

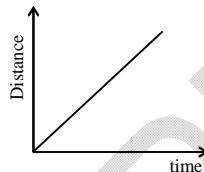
Question numbers 31 to 39 are 9 multiple choice questions. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

31. Which of the following distance – time graph represent uniform motion:-

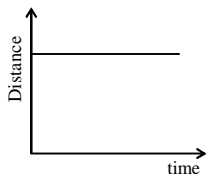
(A)



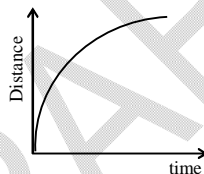
(B)



(C)



(D)



32. 1 micro second is equal to :-

(A)  $10^6$  s(B)  $10^{-6}$  s(C)  $10^3$  s(D)  $10^{-3}$  s

33. Soldiers in march past is an example of

(A) Periodic motion

(B) Rotational motion

(C) Rectilinear motion

(D) Circular motion

34. Shape and size of a shadow depends on

(A) The shape and size of the object

(B) The position of the source of light

(C) The distance between the source of light and object

(D) All the above.

35. How many years are there in one decade?

(A) 5 years

(B) 10 years

(C) 100 years

(D) 1000 years

*Space for Rough Work*



36. While measuring the length of a pencil the reading of the scale at one end is 3.0 cm and at the other end is 15.2 cm. What is the length of the pencil?  
(A) 13.2 cm (B) 12.2 cm  
(C) 11.8 cm (D) 14.2 cm
37. The interval between two events is called  
(A) time (B) distance  
(C) speed (D) displacement
38. I went from my house to the playground 300 metres away in 10 minutes then, I ran back and reached my house in 2 minutes. What was my average speed?  
(A)  $\frac{10}{12}$  m/s (B)  $\frac{10}{2}$  m/s  
(C)  $\frac{30}{10}$  m/s (D)  $\frac{12}{10}$  m/s
39. If the image cannot be taken on the screen, it must be  
(A) real (B) virtual  
(C) real or virtual (D) none of these

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*Space for Rough Work*

**Chemistry****(Part - B)****Straight Objective Type**

Question numbers 40 to 48 are 9 multiple choice questions. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

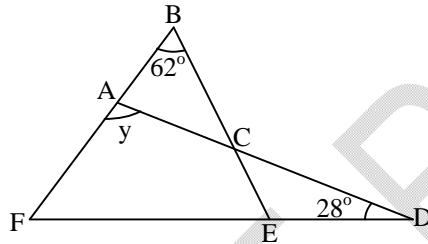
40. In which climate are cotton crops grown  
(A) Winter (B) Warm  
(C) Spring (D) Rainy
41. Which types of clothes burn slowly?  
(A) Nylon (B) Polyester  
(C) Cotton (D) Silk
42. The process of pulling out cotton seeds from cotton is called \_\_\_\_\_?  
(A) Pat sun (B) Ginning  
(C) Weaving (D) Spinning
43. Silk is obtained from  
(A) Banana tree (B) Jute stem  
(C) Silk worm (D) Mango tree
44. Unspun cotton is used for  
(A) Adsorbent (B) Filling mattress  
(C) Cleaning (D) None of these
45. Find the odd one out from the following  
(A) Aluminium (B) Iron  
(C) Copper (D) Sand
46. Which one is a liquid metal?  
(A) Mercury (B) Bromine  
(C) Silicon (D) Germanium
47. Wax and plastics are \_\_\_\_\_ in water  
(A) Soluble (B) Insoluble  
(C) Miscible (D) None of these
48. All gases are \_\_\_\_\_ conductor of heat  
(A) Good (B) Bad  
(C) Neutral (D) None of these

**Space for Rough Work**

**Mathematics****(Part - C)****Straight Objective Type**

Question numbers 49 to 68 are 20 multiple choice questions. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

49. Which set of the following number will make the number sentence true?  
 $\dots \div \dots + \dots = 12$   
 (A) 6,8,12 (B) 6,8,16  
 (C) 16,8,10 (D) 6,8,10
50. The HCF and LCM of two number is 16 and 192 respectively. If one of the number is 64, the other one is  
 (A) 48 (B) 24  
 (C) 72 (D) None
51. In the figure,  $\triangle ADF$  and  $\triangle BEF$  are two triangles and  $\angle EDC = \angle DCE = 28^\circ$ . Find the value of  $y$ .



- (A)  $90^\circ$  (B)  $91^\circ$   
 (C)  $92^\circ$  (D)  $93^\circ$
52. The price of commodity x increases by 20 paise every year, while the price of commodity y decreases by 20 paise every year. If present price of x is Rs. 23.50 and that of y is Rs. 40.30, find the total price of x and y after 10 years.  
 (A) Rs. 21.50 (B) Rs. 38.30  
 (C) Rs. 59.80 (D) Rs. 63.80

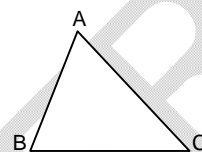
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**Space for Rough Work**

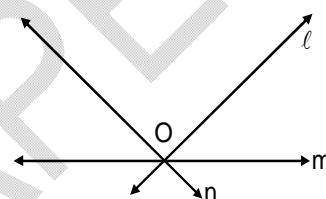
53. Circumference of a circle, whose area is  $3850 \text{ cm}^2$ , is :  
 (A) 220 cm (B) 70 cm.  
 (C) 110 cm (D) 140 cm

54. Subtract  $(x^4 + x^2y^2 - 3x^2y + y^4)$  from  $(y^4 + 3x^2y^2 - x^4)$   
 (A)  $2x^4 - 2x^2y^2 - 3x^2y$  (B)  $2x^2y^2 + 3x^2y - 2x^4$   
 (C)  $2y^4 + 4x^2y^2 - 3x^2y$  (D)  $x^2y^2 + 2y^4$

55. Which of the relation of the sides showing the condition of scalene triangle?  
 (A)  $AB = BC = CA$  (B)  $AB \neq BC = AC$   
 (C)  $AB \neq BC \neq CA$  (D)  $AB = BC \neq AC$



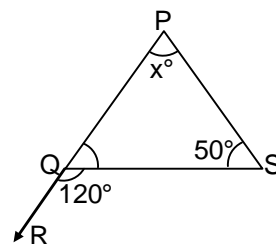
56. In the given figure lines  $\ell$ ,  $m$  and  $n$  are called  
 (A) Collinear lines  
 (B) Parallel lines  
 (C) Concurrent lines  
 (D) None of these



57. Supplementary angle of  $108.5^\circ$  is  
 (A)  $70.5^\circ$  (B)  $71.5^\circ$   
 (C)  $21\frac{1}{2}^\circ$  (D)  $77\frac{1}{2}^\circ$

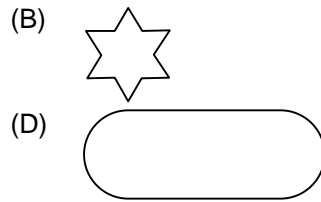
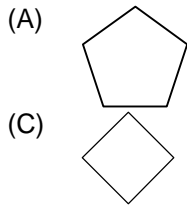
58. At 3 O'clock, the smaller angle formed between the hands of a clock is  
 (A) Reflex angle (B) Right angle  
 (C) Straight angle (D) Acute angle

59. Measure of  $x^\circ$  in the figure is  
 (A)  $60^\circ$  (B)  $70^\circ$   
 (C)  $80^\circ$  (D)  $55^\circ$



Space for Rough Work

60. Which of the following figure is not a polygon?



61. Hexagon is a polygon which consists of

- (A) 7 sides, 7 angles and 7 vertices  
 (B) 6 sides, 6 angles and 6 vertices  
 (C) 8 sides, 8 angles and 8 vertices  
 (D) 4 sides, 4 angles and 4 vertices

62. A triangle can not have \_\_\_\_\_

- (A) Two acute angles  
 (B) One right angle  
 (C) Two obtuse angles  
 (D) Each angle equal to  $60^\circ$

63. Roman numeral for the greatest three digit number is

- (A) IXIXIX  
 (B) CMXCIX  
 (C) CMIXIX  
 (D) CMIIC

64. Using 5, 4, 0, 3 without repetition, make the greatest and smallest 4-digit numbers respectively

- (A) 5403, 0345  
 (B) 5430, 3045  
 (C) 5430, 0345  
 (D) 5304, 3450

65. If the product  $4868 \times 9P2$  is divisible by 12, then the possible value of P is

- (A) 2  
 (B) 5  
 (C) 6  
 (D) None of these

66. The representation of the smallest 5-digit number using three different digit is

- (A) 10002  
 (B) 11002  
 (C) 10000  
 (D) 12300

67. The round off of the number 346578 to its nearest lakh is

- (A) 400000  
 (B) 300000  
 (C) 340000  
 (D) 346000

68. Find the L.C.M. of 84, 126 and 288.

- (A) 2016  
 (B) 12  
 (C) 84  
 (D) 288

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*Space for Rough Work*

## **Biology** **(Part - D)**

### Straight Objective Type

Question numbers 69 to 80 are 12 multiple choice questions. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

69. Which one among the following is an omnivore?  
 (A) Lion (B) Deer  
 (C) Cockroach (D) None of these

70. Which one of the following is not an animal product?  
 (A) Cheese (B) Butter  
 (C) Honey (D) Rice

71. The food which is mainly eaten by majority of people is known as:  
 (A) Non staple food (B) Fermented food  
 (C) Staple food (D) Fast food

72. Oil contain..... which is an essential component of food.  
 (A) Proteins (B) Fats  
 (C) Carbohydrates (D) Minerals

73. Match the statements in column A with those of column B

Column – A		Column – B	
(a)	Maize	(p)	Herbivore
(b)	Some plants and animals	(q)	Curd
(c)	Milk	(r)	Carbohydrate
(d)	Deer	(s)	Source of food to human beings.

- (A) (a → p), (b → q), (c → r), (d → s)      (B) (a → r), (b → s), (c → q), (d → p)  
 (C) (a → r), (b → p), (c → s), (d → q)      (D) (a → s), (b → p), (c → q), (d → r)

74. Deficiency of iron leads to:  
 (A) Goitre (B) Marasmus  
 (C) Anaemia (D) All of these

75. Vitamin C is also known as:  
 (A) Ascorbic acid (B) Asboric acid  
 (C) Citric acid (D) Acetic acid

**Space for Rough Work**

76. Which of the following will provide maximum roughage to our diet, if taken in equal mass?  
(A) Rice (B) Tomato  
(C) Cabbage (D) Egg
77. Lipids in the diet:  
(A) Makes the food less tasty (B) Increase the bulk  
(C) Enable the absorption of some vitamins (D) All of the above
78. Which of the following minerals are required for the formation of bones and teeth?  
(A) Sodium and potassium (B) Iron and calcium  
(C) Calcium and cobalt (D) Calcium and phosphorous
79. Water is absorbed by the .....of a plant.  
(A) root (B) stem  
(C) flower (D) seed
80. In monocots, .....root system is observed.  
(A) tap root (B) fibrous root  
(C) both (A) and (B) (D) none of these

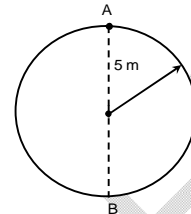
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*Space for Rough Work*

**Section-III**      **Physics, Chemistry & Mathematics****Physics****(Part - A)****Numerical Based Type**

Question numbers 81 to 83 are 3 numerical based questions single digit answer 0 to 9.

81. A body travels from A to B along a circular path having radius 5m in 2 seconds as shown in the figure. Its average velocity in m/sec is:-



82. A light ray is incident on a plane mirror placed in a horizontal plane, making an angle of  $30^\circ$  with the vertical, then the angle between the reflected ray and the normal is  $10n$ (in degrees). What is the value of  $n$ ?
83. A boy covers 50 m in 10 sec, 40 m in next 10 sec and 30 m in the last 10 sec. Calculate the average speed of the boy in m/sec.

*Space for Rough Work*



## **Chemistry**

## **(Part - B)**

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### **Numerical Based Type**

*Question numbers 84 to 86 are 3 numerical based questions single digit answer 0 to 9.*

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84. Among the following which properties are used to measure the purity of a substance?  
Its colour, Quantity, Melting point, Boiling Point, Source
85. Among the following how many are malleable substance?  
Wood, Copper, Stone, Glass, Silver, Iron
86. Among the following which is transparent?  
Butter paper, Water, Air, Glass, Fog
- 

**Space for Rough Work**

**Mathematics****(Part - C)****Numerical Based Type**

Question numbers 87 to 90 are 4 numerical based questions single digit answer 0 to 9.

87. If  $\frac{1}{1 + \frac{1}{3 + \frac{1}{5}}}$  can be written as  $\frac{n}{a}$  then value of  $\frac{2(n+a)}{37}$  is

88. For  $x = 1$  and  $y = 2$ , value of expression  $x^2 + y^2 - 2x - 3y + 9$  is:

89. A school canteen charges Rs. 25 and Rs.  $x$  for biscuits and milk respectively. Money spent by a student in 5 days on both the items if he has one of each on all the five days is 150, then value of  $x$  is:

90. Value of  $\frac{-3}{200} \times (177 + 777)$  is:

**Space for Rough Work**

# FIITJEE SAMPLE PAPER – 2018

## (Big Bang Edge Test / Talent Recognition Exam)

for students presently in

### Class 6

## ANSWERS

### PAPER-1

1.	<b>B</b>	2.	<b>C</b>	3.	<b>B</b>	4.	<b>D</b>
5.	<b>A</b>	6.	<b>B</b>	7.	<b>B</b>	8.	<b>D</b>
9.	<b>A</b>	10.	<b>C</b>	11.	<b>C</b>	12.	<b>A</b>
13.	<b>C</b>	14.	<b>D</b>	15.	<b>B</b>	16.	<b>B</b>
17.	<b>C</b>	18.	<b>D</b>	19.	<b>D</b>	20.	<b>B</b>
21.	<b>A</b>	22.	<b>D</b>	23.	<b>D</b>	24.	<b>A</b>
25.	<b>A</b>	26.	<b>C</b>	27.	<b>B</b>	28.	<b>B</b>
29.	<b>A</b>	30.	<b>D</b>	31.	<b>B</b>	32.	<b>B</b>
33.	<b>C</b>	34.	<b>D</b>	35.	<b>B</b>	36.	<b>B</b>
37.	<b>A</b>	38.	<b>A</b>	39.	<b>B</b>	40.	<b>B</b>
41.	<b>C</b>	42.	<b>B</b>	43.	<b>C</b>	44.	<b>B</b>
45.	<b>D</b>	46.	<b>A</b>	47.	<b>B</b>	48.	<b>B</b>
49.	<b>C</b>	50.	<b>A</b>	51.	<b>A</b>	52.	<b>D</b>
53.	<b>A</b>	54.	<b>B</b>	55.	<b>C</b>	56.	<b>C</b>
57.	<b>B</b>	58.	<b>B</b>	59.	<b>B</b>	60.	<b>D</b>
61.	<b>B</b>	62.	<b>C</b>	63.	<b>B</b>	64.	<b>B</b>
65.	<b>D</b>	66.	<b>A</b>	67.	<b>B</b>	68.	<b>A</b>
69.	<b>C</b>	70.	<b>D</b>	71.	<b>C</b>	72.	<b>B</b>
73.	<b>B</b>	74.	<b>C</b>	75.	<b>A</b>	76.	<b>C</b>
77.	<b>C</b>	78.	<b>D</b>	79.	<b>A</b>	80.	<b>B</b>
81.	<b>5</b>	82.	<b>3</b>	83.	<b>4</b>	84.	<b>2</b>
85.	<b>3</b>	86.	<b>3</b>	87.	<b>2</b>	88.	<b>6</b>
89.	<b>5</b>	90.	<b>6</b>				