

FIITJEE Talent Reward Exam

for student presently in
Class 6



Time: 3 Hours

CODE 6A

Maximum Marks: 194

Instructions:

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.

- You are advised to devote 1 Hour on Section-I and 2 Hours on Section-II and Section-III.**
- 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 (IQ)			Q. 1 to 12	+2	0
			Q. 13 to 16	+3	–1
			Q. 17 to 20	+6	0
SECTION – II (MATHEMATICS)			Q. 21 to 23	+6	–1
			Q. 24 to 26	+8	–2
			Q. 27 to 30	+8	–3
SECTION – III (SCIENCE & MATHEMATICS)	Part –A	Physics	Q. 31 to 36	+3	–1
	Part –B	Chemistry	Q. 37 to 42	+3	–1
	Part –C	Mathematics	Q. 43 to 50	+3	–1

- 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.
- Blank papers, clip boards, log tables, slide rule, calculator, cellular phones, pagers and electronic devices, in any form, are not allowed.
- Before attempting paper write your Name, Registration number and Test Centre** in the space provided at the bottom of this sheet.

Note:

Check all the sheets of this question paper. Please ensure the same SET is marked on header of all the sheets inside as indicated above 'Maximum Marks' of this page. In case SET marked is not the same on all pages, immediately inform the invigilator and CHANGE the Questions paper.

Registration Number :

Name of the Candidate :

Test Centre :

Time: 1 Hour

IQ

Section –I

Section-I**IQ**

Directions (Q. 1 to 3): In each of the following questions, one number is missing in the series. You have to understand the pattern of the series and insert the number.

1. 13, 17, 19, 23, 29, 31, ?
 (A) 43 (B) 41
 (C) 39 (D) 44
2. 4, 2, 8, 16, 128, ?
 (A) 3156 (B) 2868
 (C) 2048 (D) 1868
3. 2, 4, 8, 14, 22, 32, ?
 (A) 40 (B) 42
 (C) 48 (D) 44
4. What should come next in the following number sequence?
 1 1 2 1 2 3 1 2 3 4 1 2 3 4 5 1 2 3 4 5 6 1 2 3 _
 (A) 5 (B) 1
 (C) 6 (D) 4
5. Three of the four are alike in a certain way and so form a group. Which is the one that does not belong to that group?
 (A) Fruit (B) Flower
 (C) Leaf (D) Tree
6. If the letters in the word "PREDICTABLE" are rearranged as they appear in the English alphabet, the position of how many letters will remain unchanged after the rearrangement?
 (A) Two (B) One
 (C) Three (D) More than three
7. In a certain code, "MENTAL" is written as "NFOUBM". How is "ABILITY" written in that code?
 (A) BCJMJVZ (B) BCMJJUZ
 (C) BJD MUZY (D) BCJMJUZ
8. If Table is called Book, Book is called Chair, Chair is called Chocolate, Chocolate is called Milk and Milk is called Pen. Then on which do we sit?
 (A) Chair (B) Chocolate
 (C) Book (D) Table

Space for Rough Work

9. I am going towards north and after walking 10 km, I turned right and again walked 6 km. again I turned right and walked 10 km. How far and in which direction I am from the starting point?
 (A) 10 km east (B) 5 km south
 (C) 6 km west (D) 6 km east
10. Which would be the proper sequence of the following
 1. Rainbow
 2. Rain
 3. Sun
 4. Happy
 5. Child
 (A) 4, 2, 3, 5, 1 (B) 4, 5, 1, 2, 3
 (C) 2, 3, 1, 5, 4 (D) 2, 1, 4, 3, 5
11. Apple is related to "Fruit" in the same way as Potato is related to _____
 (A) Root (B) Stem
 (C) Flower (D) Bud

Directions (Q. 12): Answer the given question based on the following English alphabets?

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

12. Which letter is 7th to the left of the 12th letter from the left end?
 (A) Q (B) E
 (C) G (D) U

Directions (Q. 13 to 16): Read the following information and answer the questions given below it.

Seven students Amit, Sameer, Poonam, Devansh, Tarun, Bhavini and Harshul are sitting in a line. Harshul is to the right of Devansh and to the left of Sameer. Amit is to the right of Poonam. Amit and Devansh have one student between them. Tarun and Sameer have two students between them. Devansh and Bhavini have two students between them.

13. Who is on the extreme right?
 (A) Amit (B) Harshul
 (C) Bhavini (D) Devansh
14. Who is exactly in the middle?
 (A) Devansh (B) Tarun
 (C) Sameer (D) Poonam
15. Who is on the extreme left?
 (A) Harshul (B) Poonam
 (C) Amit (D) Devansh
16. Who is in between Amit and Devansh?
 (A) Tarun (B) Bhavini
 (C) Harshul (D) Poonam

Space for Rough Work

Directions (Q. 17 to 18): In the following questions, there is some relationship between the two terms to the left of :: and the same relationship holds between the two terms to its right. You are required to find out the relationship between the first two letters/numbers and choose the letter/number from the given alternatives, which bears the same relationship to the third letter/number as the first two bear.

17. $6 : 18 :: 8 : ?$
 (A) 32 (B) 26
 (C) 44 (D) 38
18. $J : Q :: E : ?$
 (A) T (B) V
 (C) U (D) W

Directions (Q. 19 to 20): Read the following information to answer the questions given below:

Four ladies Shipra, Debangshi, Rashmi and Kavita and four gentlemen Suyash, Adarsh, Mridul and Rishabh are sitting in a circle facing each other.

- (i) No two ladies or two gentlemen are sitting side by side.
 (ii) Rashmi who is sitting between Mridul and Suyash, is facing Kavita.
 (iii) Adarsh who is between Kavita and Shipra, is facing Mridul.
 (iv) Rishabh is to the left of Debangshi.

19. Who is sitting to the left of Shipra?
 (A) Mridul (B) Rishabh
 (C) Suyash (D) Adarsh
20. Who are immediate neighbours of Debangshi?
 (A) Mridul and Rishabh (B) Suyash and Mridul
 (C) Adarsh and Suyash (D) Rishabh and Adarsh

Space for Rough Work

Time: 2 Hours

Section –II

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Section –III

Section-II**Mathematics**

Comprehension – 1 (Question No. 21-23)

A, B and C are three non-collinear points on a plane. Join A to B, B to C and C to A to form a $\triangle ABC$.

21. Name of the side opposite to $\angle A$ is
(A) AB (B) BC
(C) AC (D) none of these
22. The value of $\angle A + \angle B + \angle C$ is
(A) 180° (B) 360°
(C) 90° (D) 70°
23. If length of side AB is equal to the length of side BC, then which two angles are equal ?
(A) $\angle B = \angle C$ (B) $\angle A = \angle C$
(C) $\angle B = \angle A$ (D) none of these

Space for Rough Work

Comprehension – 2 (Question No. 24-26)

A survey conducted on an Indian State shows that 1623546 people are enrolled in primary education, 9768678 people in secondary education, 6837954 people have higher education and 2893539 people are illiterate. If the number of children below the age of school admission is 693482, then

24. The total number of educated people in the state are
(A) 25304515 (B) 24121830
(C) 18230178 (D) 18151620
25. Total number of children which are studying in primary and secondary school
(A) 11392224 (B) 12151726
(C) 13161720 (D) 15201516
26. Total population of the state is
(A) 25807099 (B) 22817199
(C) 20817199 (D) 21817199
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Space for Rough Work

Comprehension – 3 (Question No. 27-30)

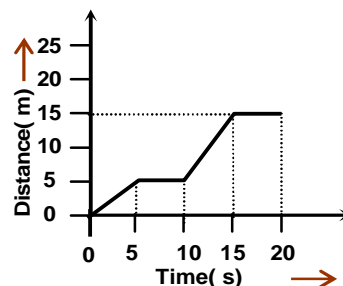
In a fruit shop there are 527 apples, 646 pears and 748 oranges. These are to be arranged in heaps from same type, containing the same number of fruits.

27. The greatest number of fruits possible in each heap
(A) 17 (B) 18
(C) 19 (D) 15
28. Number of possible heaps of pears are
(A) 36 (B) 34
(C) 37 (D) 38
29. Difference between the possible heaps of pears and possible heaps of oranges is
(A) 4 (B) 6
(C) 8 (D) 5
30. Total number of possible heaps are
(A) 113 (B) 114
(C) 117 (D) 121

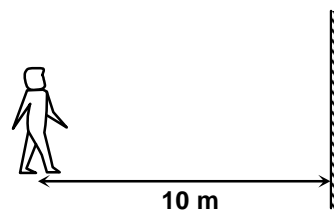
Space for Rough Work

Section-III**Science & Mathematics****Physics (Part – A)**

31. Motion of an object that repeats itself after regular interval of time is called
 (A) Circular motion (B) Periodic motion
 (C) Rectilinear motion (D) Rotatory motion
32. Image formed by a pinhole camera is
 (A) erect and enlarged (B) erect and diminished
 (C) Inverted and enlarged (D) Inverted and diminished
33. Light year is the unit of
 (A) Time (B) Speed
 (C) Distance (D) All the above
34. Which of the following statements is wrong?
 (A) Convex mirror is used as rear view mirror in the vehicle.
 (B) Image formed by a plane mirror is upside down
 (C) Working of pinhole camera is based on rectilinear motion of light
 (D) In periscope, two plane mirrors are kept parallel facing each other.
35. Speed of an object is defined as the distance travelled by it per unit time. Using the given distance-time graph of an object, answer the following question.
 In which time interval, speed of the object is maximum?
 (A) (0 – 5) sec
 (B) (5 – 10) sec
 (C) (10 – 15) sec
 (D) (15 – 20) sec



36. Suppose you are standing in front of a plane mirror at a distance of 10 m. Now you move 5 m towards the mirror. Distance between your initial and final image is
 (A) 10 m
 (B) 5 m
 (C) 15 m
 (D) 20 m

**Space for Rough Work**

Chemistry (Part – B)

37. Which of the following is not made up of coconut fibres?
(A) Ropes (B) Footmats
(C) Carpets (D) Sarees
38. Which of the following does not disappear when added to water?
(A) Sugar (B) Common salt
(C) Chalk powder (D) Glucon D
39. Among the following, identify the water soluble gas which is essential for the survival of aquatic life.
(A) Nitrogen (B) Hydrogen
(C) Helium (D) Oxygen
40. Arrange the steps in sequence for the manufacture of common salt.
(P) Recrystallization
(Q) Evaporation of sea water
(R) Dissolution in water
(S) Formation of crude salt
(A) QSRP (B) QSPR
(C) QRSP (D) PQSR
41. Separation of sawdust from water, can be carried out by the following steps given below. Arrange them in a proper sequence.
(M) The mixture is poured gently into the filter cone and collected into another beaker which is called filtrate.
(N) A mixture of sawdust and water is taken in a beaker.
(O) A filter paper is folded in the form of a cone and fitted into a funnel by moistening it with few drops of water.
(P) Solid retained on the filter paper is called residue.
(A) OMNP (B) NMOP
(C) OPNM (D) NOMP
42. Assertion (A) : Gold is used for making jewellery, coins etc.
Reason (R) : It is relatively hard metal.
(A) Both (A) and (R) are true and (R) is the correct reason of (A).
(B) Both (A) and (R) are true but (R) is not the correct explanation of (A).
(C) (A) is true but (R) is false.
(D) (A) is false but (R) is true.
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Space for Rough Work

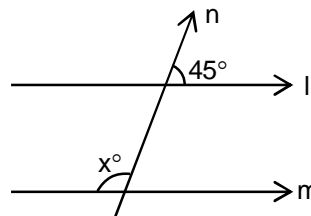
Mathematics (Part – C)

43. How many elements does a triangle have?

(A) 6 (B) 7
(C) 3 (D) 4

44. In the adjoining figure, $l \parallel m$ and n is a transversal, then the value of x is

(A) 90°
(B) 45°
(C) 135°
(D) 125°



45. The product of largest three digit number and the smallest three digit number is

(A) 9900 (B) 99900
(C) 9090 (D) 1900

46. If 19, x , 29, 31, y , 41 and 43 are a list of prime numbers in ascending order, then the value of $x + y$ is

(A) 55 (B) 40
(C) 50 (D) 60

47. The L.C.M. of 24, 36 and 40 is

(A) 140 (B) 170
(C) 190 (D) 360

48. The value of $(-12) \times 7 + (-12) \times (-4)$ after simplification is

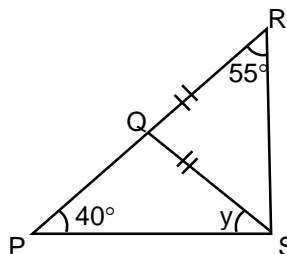
(A) -36 (B) 24
(C) 36 (D) 12

49. The successor of -18 is

(A) -19 (B) 17
(C) -17 (D) 19

50. In the given figure, if $QR = QS$ and $\angle R = 55^\circ$, $\angle P = 40^\circ$, then the value of y is

(A) 30°
(B) 45°
(C) 50°
(D) 35°



Space for Rough Work

FIITJEE TALENT REWARD EXAM

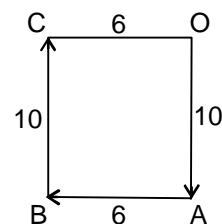
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CLASS VI HINTS (SET-A)

- (B) It is a prime number series. So next prime number is 41.
- (C) $4 \times 2 = 8$
 $8 \times 2 = 16$
 $16 \times 8 = 128$
 $128 \times 16 = \underline{2048}$
- (D) $\begin{array}{ccccccc} 2 & 4 & 8 & 14 & 22 & 32 & \underline{44} \\ \hline & +2 & +4 & +6 & +8 & +10 & +12 \end{array}$
- (D) Sequence is, $\underline{1}$ $\underline{1, 2}$ $\underline{1, 2, 3}$ $\underline{1, 2, 3, 4}$ $\underline{1, 2, 3, 4, 5}$ $\underline{1, 2, 3, 4, 5, 6}$
 So next number is 1, 2, 3, 4
- (D) Tree is odd-one, while others are part of a tree.
- (B)

P	R	E	<u>D</u>	I	C	T	A	B	L	E
A	B	C	<u>D</u>	E	E	I	L	P	R	T
- (D)

M	E	N	T	A	L	A	B	I	L	I	T	Y
+1	+1	+1	+1	+1	+1	+1	+1	+1	+1	+1	+1	+1
N	F	O	U	B	M	B	C	J	M	J	U	Z
- (B) Chair is called chocolate, So answer will be chocolate.
- (C) From the figure we can see that it is 6 km towards west from its initial position.
 $OC = 6$ km.
- (C)



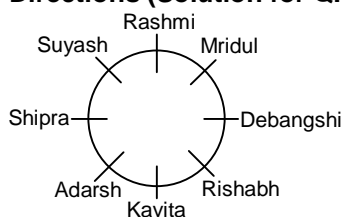
11. (B) "Apple" is related to "Fruit" in the same way as "Potato" is related to "Stem".
12. (B) 12th letter from the left end is L and 7th letter to the left of L is "E".

Directions (Solution for Q. 13 to 16): The arrangement is:

Poonam	Amit	Tarun	Devansh	Harshul	Sameer	Bhavini

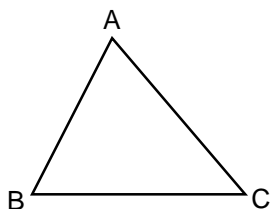
13. (C) Bhavini is on extreme right.
14. (A) Devansh is exactly in the middle.
15. (B) Poonam is on extreme left.
16. (A) Tarun is between Amit and Devansh.
17. (A) $6^2 = 36$, $\frac{36}{2} = 18$
 $8^2 = 64$, $\frac{64}{2} = 32$
18. (B) J and Q both are on the same position. J is on 10th position from starting. In the same way Q is on 10th position from the last. Similarly, E is on 5th position from starting. V is on the 5th position from the last.

Directions (Solution for Q. 19 to 20): Clearly, arrangement are as:



19. (C) Suyash is to the left of Shipra.
20. (A) Mridul and Rishabh are immediate neighbour of Debangshi.

For (21–23).



21. Side opposite to $\angle A$ is BC.
Hence (B) is correct answer
22. $\angle A + \angle B + \angle C = 180^\circ$.
23. If $AB = BC$, then $\angle A = \angle C$.
24. Total number of educated people in state
 $= 1623546 + 9768678 + 6837954 = 18230178$.

25. Number of children studying in primary and secondary school
 $= 1623546 + 9768678 = 11392224$.

26. Population of state
 $= 18230178 + 2893539 + 693482 = 21817199$.

For (27–30).

527 Apples

646 Pears

748 Oranges

H.C.F. of above number is 17

27. The greatest number of heaps = 17

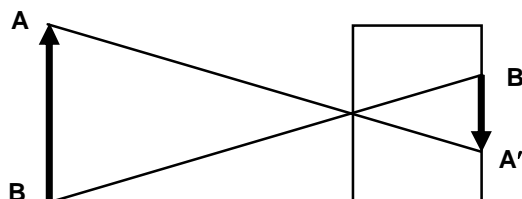
28. Possible heap of pears = $\frac{646}{17} = 38$

29. Possible heap of oranges = $\frac{748}{17} = 44$
 Difference = $44 - 38 = 6$

30. Possible heaps in Apples = $\frac{527}{17} = 31$
 Total number of Heaps = $38 + 44 + 31 = 113$.

31. Motion of an object that repeats itself after regular interval of time is called periodic motion.

32. Image formed by a pinhole camera is
 inverted and diminished
 Object is AB
 Image is A'B'



33. One light year is the distance travelled by light in vacuum in one year.

34. Image formed by a plane mirror is virtual, erect and of same size as that of object.

35. $\text{Speed} = \frac{\text{distance}}{\text{time}}$
 Speed during (0 – 5) sec = $5/5 = 1$ m/s
 Speed during (5 – 10) sec = $0/5 = 0$ m/s
 Speed during (10 – 15) sec = $10/5 = 2$ m/s
 Speed during (15 – 20) sec = $0/5 = 0$ m/s
 Hence maximum speed of the object is during (10 –15) sec

36. Position of initial image from mirror = 10 m
 Position of final image from mirror = 5 m
 Distance between initial and final image = $10 - 5 = 5$ m

37. Coconut fibre called coir is very hard and cannot be used for making sarees.

38. Chalk powder float on the surface of water because it is not soluble in it.
39. Oxygen is the water soluble gas essential for the survival of aquatic life.
40. Salt obtained from sea water is called rock salt. It can be purified by crystallization.
41. Saw dust is insoluble in water so, it can be separated by filtration.
42. Gold is used for making jewellery etc, because it is a soft metal and can be drawn into wires and sheets.
43. Elements of triangle = 6.
44. $x + 45^\circ = 180^\circ$.
 $x = 180^\circ - 45^\circ = 135^\circ$
45. $999 \times 100 = 99900$
46. 19, x, 29, 31, y, 41, 43 are prime number in ascending order
 so $x = 23$
 and $y = 37$
 $x + y = 60$.
- 47.
- $$\begin{array}{r} 4 \overline{)24, 36, 40} \\ 3 \overline{)6, 9, 10} \\ 2 \overline{)2, 3, 10} \\ 3 \overline{)1, 3, 5} \\ 5 \overline{)1, 1, 5} \\ 1, 1, 1 \end{array}$$
- LCM = $4 \times 3 \times 2 \times 3 \times 5 = 360$.
48. $-12 \times 7 + (-12) \times (-4)$
 $= -84 + 48$
 $= -36$.
49. Successor of $-18 = -18 + 1 = -17$.
50. $\angle QSR = 55^\circ$ (Isosceles Triangle)
 $\angle PQS = 55^\circ + 55^\circ$ (exterior angle property)
 $= 110^\circ$
 Using angle sum property in $\triangle PQS$
 $40^\circ + 110^\circ + y = 180^\circ$
 $y = 180^\circ - 150^\circ = 30^\circ$.