JEE EXPERT

SAMPLE PAPER

MENTAL ABILITY
Going to XII

Time : 2 Hours

Maximum Marks : 300

Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.

INSTRUCTIONS

(i)   The question paper has 14 printed pages excluding Answer Sheet. Please ensure that the copy of the question paper you have received contains all pages.

(ii)   The question paper contains 100 questions. Each question carry 3 marks and all the questions are compulsory. *There is negative marking. One mark will be deducted for each wrong answer. No mark will be deducted for unattempted question.*

(iii)   Each question contains Four alternatives out of which only **ONE** is correct.

(iv)   Indicate the correct answer for each question by filling appropriate bubble in your answer sheet.

(v)   For rough work, use the space provided in question paper booklet. No extra sheet will be provided for rough work.

(vi)   Use of Calculator, Log Table, Slide Rule and Mobile is not allowed.

(vii)   The answer(s) of the questions must be marked by shading the circles against the question by dark pencil only. For example if only 'B' choice is correct then,

the correct method for filling the bubble is

A	B	C	D
○	●	○	○

the wrong method for filling the bubble are

(a)

A	B	C	D
○	⊘	○	○

(b)

A	B	C	D
○	⊗	○	○

(c)

A	B	C	D
○	◓	○	○

The answer of the questions in wrong or any other manner will be treated as wrong.

Name of the candidate

Regn. Number

I have read all the instructions and shall abide by them.

....
Signature of the Candidate

I have verified all the information filled in by the candidate.

....
Signature of the invigilator

SECTION – I

Straight Objective Type

This Section contains 100 multiple choice questions numbered 1 to 100. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct

Directions (Q.No.-1 – 3): In the following questions, some numbers are given in a sequence. Find out the number(s) from the alternatives, which will come in place of the question mark to continue the sequence.

1.   57, 54, 58, 55, 59, 56, 60, ?
        (A) 64   (B) 63
        (C) 58   (D) 57

2.   27, 31, 40, 56, 81, 117, ?
        (A) 156   (B) 165
        (C) 166   (D) 169

3.   55, 168, 57, 120, 60, 80, 62, 48, 65, 24, ?, ?
        (A) 69, 11   (B) 67, 8
        (C) 8, 71   (D) 6, 72

Directions (Q.No.- 4 – 9): In the following questions, there is a relationship between the two numbers/letters/figures on the left of the sign (: :). The same relationship exists between the two to the right of the sign (: :), of which one is missing. Find the missing one from the alternatives.
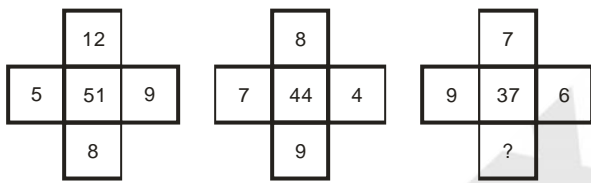
4.   7 : 42 : : 9 : ?
        (A) 75   (B) 65
        (C) 46   (D) 72

5.   8 : 32 : : 12 : ?
        (A) 52   (B) 68
        (C) 72   (D) 75

6.   DGOT : JKUX : : FINP : ?
        (A) KMTU   (B) LNTS
        (C) LMTT   (D) MNTU

7.   EIKR : HMPX : : GKMT : ?
        (A) KORY   (B) JORZ
        (C) JNSZ   (D) INQZ

8.   FILP : AEIN : : IKNT : ?
        (A) CGLR   (B) EGJR
        (C) DGKR   (D) DHLS

9.   ILNT : FHIN : : KOSV : ?
        (A) IKMN   (B) HKOQ
        (C) ILNR   (D) HKNP

Space for Rough Work

Directions (Q.No.-10 – 12): In these questions, find the wrong entry in the series from the given four alternatives.

10. 1, 3, 7, 15, 27, 63, 127
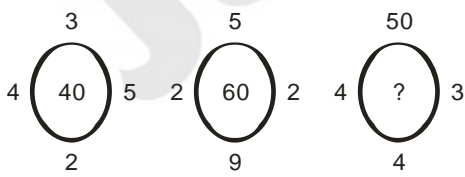   (A) 7   (B) 15
   (C) 27   (D) 63

11. 2, 5, 10, 18, 26, 37
   (A) 37   (B) 26
   (C) 18   (D) 5

12. 1, 1, 4, 8, 9, 28, 16, 64
   (A) 4   (B) 9
   (C) 16   (D) 28

Directions (Q.No.-13 – 15): In the following questions the cells of a square are filled with numbers with one number missing in a cell. Find from the alternatives the number, which will replace the question mark in the cell.
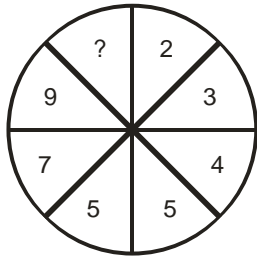
13.

Figure 1:
	12	
5	51	9
	8	

Figure 2:
	8	
7	44	4
	9	

Figure 3:
	7	
9	37	6
	?	

   (A) 3   (B) 4
   (C) 5   (D) 13

14.

2	4	9
6	4	25
8	4	?

   (A) 41   (B) 36
   (C) 32   (D) 13

15.

Circle 1: top 3, left 4, center 40, right 5, bottom 2
Circle 2: top 5, left 2, center 60, right 2, bottom 9
Circle 3: top 50, left 4, center ?, right 3, bottom 4

   (A) 80   (B) 88
   (C) 800   (D) 808

Space for Rough Work

Directions (Q.No.-16 – 20): The numbers in each of the following figures follow some rule. Find the missing number-
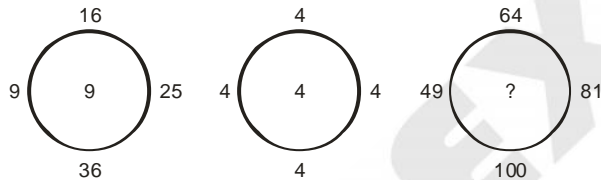
16.

Circle divided into 8 sectors: ?, 2, 9, 3, 7, 4, 5, 5

(A) 10   (B) 11
(C) 12   (D) 13

17.

50	1	7
111	11	10
335	11	?

(A) 20   (B) 18
(C) 16   (D) 14

18.

Circle 1: top 16, left 9, center 9, right 25, bottom 36
Circle 2: top 4, left 4, center 4, right 4, bottom 4
Circle 3: top 64, left 49, center ?, right 81, bottom 100

(A) 17   (B) 18
(C) 19   (D) 20

19.

Circle divided into 8 sectors: 26, ?, 124, 7, 2, 5, 4, 3

(A) 64   (B) 63
(C) 60   (D) 12

20.

Circle 1: 2, 3, 7, 6, center 63
Circle 2: 1, 9, 18, 12, center 486
Circle 3: 5, 5, 5, 4, center ?
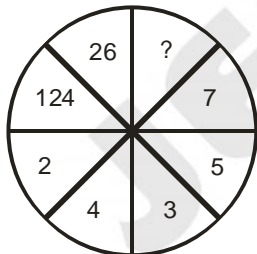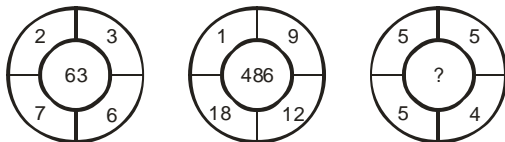
(A) 19   (B) 125
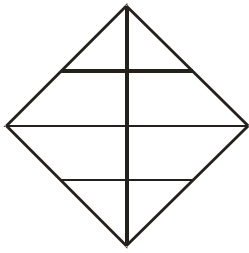(C) 500   (D) 600

Space for Rough Work

Directions (Q.No.-21 – 24): Find the number of triangles in the given figure.

21.

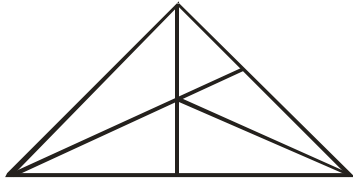   (A) 10   (B) 12
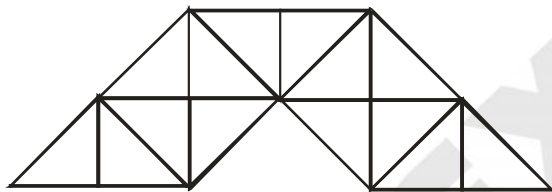   (C) 14   (D) 16

22.

   (A) 9   (B) 10
   (C) 11   (D) 12

23.

   (A) 23   (B) 27
   (C) 29   (D) 31
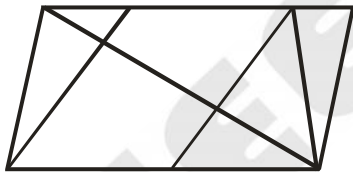
24.

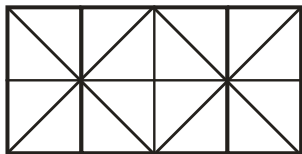
   (A) 10   (B) 12
   (C) 13   (D) 14

Directions (Q.No.-25 – 26): Find the number of squares in the given figure.

25.

   (A) 11   (B) 21
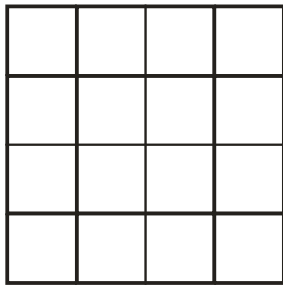   (C) 24   (D) 12
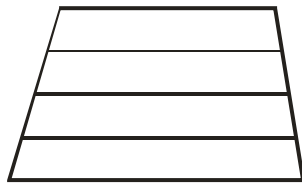
Space for Rough Work

26.

(A) 16   (B) 17
(C) 28   (D) 30

27. Determine the number of trapeziums in the following figures.

(A) 14   (B) 12
(C) 10   (D) 8

28. Tarun walks 14 km towards North, after walking 6 km towards South he walks 6 km towards East. How far is he from his starting point and in which direction/
(A) 6 km North-East   (B) 6 km East
(C) 10 km North-East   (D) 10 km West

29. Radha walks 10 km to East, then 10 km to South West. She turns again and walks 10 km to North West. In which direction is she from her starting point?
(A) South   (B) North
(C) East   (D) West

Directions (Q.No.-30 – 32): Five police booths A, B, C, D and E are situated in the following manner:
A is 1 km East of D, B is 2 km South of E, C is 2 Km South of A, E is 3 km West of D.

30. Which three police booths are in the same line?
(A) ACD   (B) ADE
(C) DEB   (D) DEC

31. Of the three lying in the straight line which one is in the middle?
(A) A   (B) B
(C) D   (D) E

32. A is how many kms away from E?
(A) 2   (B) 3
(C) 4   (D) 5

Space for Rough Work

33. P, Q, R and S are playing a game of carom. P, R and S, Q are the partners. S is to the right of R who is facing west. To which direction Q is facing?
(A) East   (B) West
(C) North   (D) South

34. In a code language COME is written as XLNV and ABLE as ZYOV. How will MOLLY be written in the same code?
(A) NLOBO   (B) NLBOO
(C) LNOOB   (D) NLOOB

35. If OPFGBCST stands for the NEAR then in the same manner IJVWHI will stand for
(A) HAG   (B) HUG
(C) HUT   (D) KEG

36. In a certain code BEAUTH is coded as 835247, DEVIL as 03916 and ABIDE as 58103. What does '3' stand for?
(A) E   (B) D
(C) B   (D) A

37. In a certain language FOR stands for 'Old is Gold', ROT stands for 'Gold is Pure' and ROM stands for 'Gold is Costly'. How is 'Pure Old Gold is Costly' be written?
(A) TFROM   (B) FOTRM
(C) FTORM   (D) TOMRF

38. In a certain code 415 means 'Milk is hot' 18 means 'Hot soup' and 895 means 'Soup is tasty', what number will indicate the word tasty?
(A) 9   (B) 8
(C) 5   (D) 4

39. If $8 \div 5 = 6425, 9 \div 6 = 8136$, then $4 \div 3 = ?$
(A) 1609   (B) 1690
(C) 4381   (D) 4421

Directions (Q.No.-40 – 42): A, B, C, D and E are standing in a row. On one end of the row 'D' and on the other is 'C'. B is to the right of E. A is to the left of C. E is in between D and B.

40. Who is in the centre of the row?
(A) E   (B) D
(C) B   (D) A

41. A is standing between
(A) B and D   (B) E and B
(C) C and E   (D) B and C

42. Who is to the right of B?
(A) A   (B) C
(C) D   (D) E

Space for Rough Work

Directions (Q.No.-43 – 44): Five books are placed on the table. Hindi book is placed above the English book and Mathematics book is placed below the science book. English book is above the science book and Drawing book is below the Mathematics book.

43.   The book between the Hindi and Science books is
       (A) Drawing   (B) Mathematics
       (C) English   (D) None of these

44.   Which book is at the bottom?
       (A) Hindi   (B) Drawing
       (C) Science   (D) Mathematics

45.   Rajesh ranked 8th from the top and 28th from the bottom in a class. How many students are there in the class?
       (A) 33   (B) 34
       (C) 35   (D) 36

46.   A is the father of B, C is the brother of A. E is the sister of B. D is the father of C. Now the relation from E to C
       (A) Nephew   (B) Niece
       (C) Son   (D) Daughter

47.   A man said to a lady "Ram's mother is the only daughter of your father". How is the lady related to Ram?
       (A) Daughter   (B) Sister
       (C) Wife   (D) Mother

48.   Rajiv is the brother of Atul. Sonia is the sister of Sunil. Atul is the son of Sonia. How is Rajiv related to Sunil?
       (A) Nephew   (B) Son
       (C) Brother   (D) Father

49.   A is mother of D and sister of B. B has a daughter C who is married to F. G is the husband of A. How is G related to D?
       (A) Husband   (B) Son
       (C) Father   (D) Uncle

Directions (Q.No.-50 – 53): To answer these questions use the information given below.

In a group of five persons A, B, C, D and E, there is a professor, a business man and an artist. A, D are ladies who are unmarried and do not work. Of the married couple in the group E is the husband. B is the brother of A and is neither a business man nor an artist.

50.   Who is the professor?
       (A) A   (B) B
       (C) C   (D) D

51.   Who is an artist?
       (A) A   (B) B
       (C) C   (D) E

Space for Rough Work

52. Who is the wife of E?
    (A) A   (B) B
    (C) C   (D) D

53. Which of the following group include all the men?
    (A) BE   (B) AB
    (C) BC   (D) AE

Directions (Q.No.-54 – 58): From the following figure, answer the questions given below in which triangle represents doctor, circle represents players and rectangle represents artists.
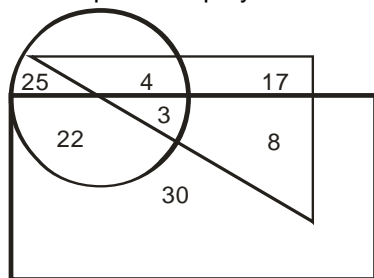

54. How many doctors are players and artists both?
    (A) 3   (B) 8
    (C) 22   (D) 30

55. How many artists are players?
    (A) 5   (B) 16
    (C) 22   (D) 30

56. How many doctors are neither artists nor players?
    (A) 5   (B) 10
    (C) 17   (D) 30

57. How many players are neither doctors nor artists?
    (A) 25   (B) 17
    (C) 10   (D) 5

58. How many artists are neither player nor doctor?
    (A) 10   (B) 17
    (C) 30   (D) 38

Space for Rough Work

Directions (Q.No.-59 – 64): A die is thrown 4 times and its four different positions are given in the figures.

59.
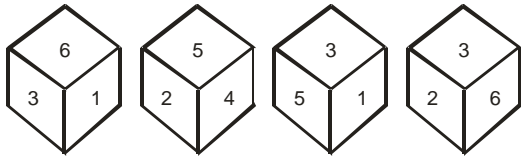
What number is opposite to 3?
(A) 2   (B) 3
(C) 4   (D) 6

60.
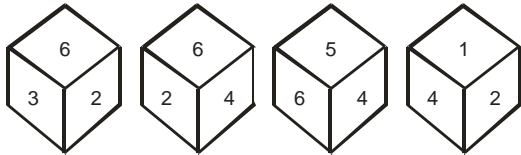
What number is opposite to 6?
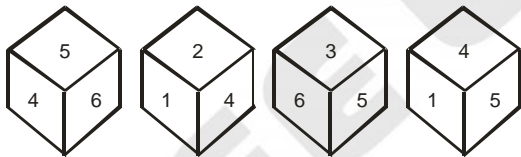(A) 1   (B) 2
(C) 3   (D) 4

61.
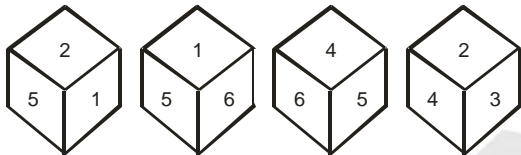
What number is on the face opposite to for?
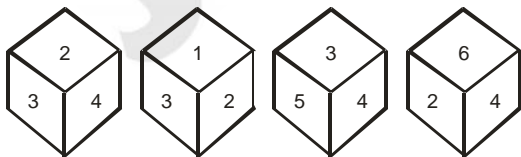(A) 1   (B) 2
(C) 3   (D) 5

62.

What number is opposite to 3?
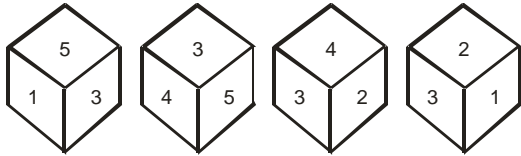(A) 1   (B) 2
(C) 4   (D) 6

63.

What number is opposite to 2?
(A) 3   (B) 4
(C) 5   (D) 6

Space for Rough Work

64.

What number is opposite to 4?

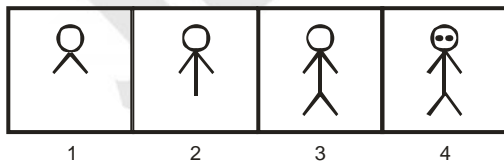(A) 6   (B) 5

(C) 2   (D) 1

Directions (Q.No.-65 – 67): A cube has six different symbols drawn over its six faces. The symbols are dot, circle, triangle, square, cross and arrow. Three different positions of the cubes are shown in figure (i), (ii) and (iii).

(i)   (ii)   (iii)
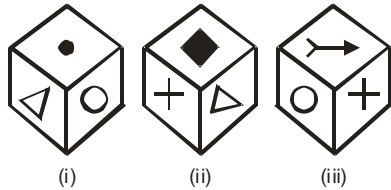
65. Which symbol is opposite of the dot?
(A) Circle   (B) Triangle
(C) Arrow   (D) Cross

66. Which symbol is opposite of the arrow?
(A) Circle   (B) Triangle
(C) Dot   (D) Cross

67. What symbol occurs at the bottom of figure (ii)?
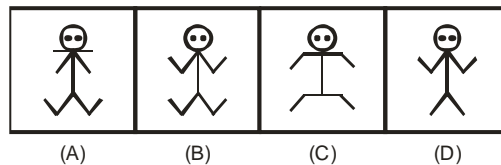(A) Arrow   (B) Triangle
(C) Circle   (D) Dot

Directions (Q.No.-68 – 75): Find out which one of the answer figure would occupy the next position in the problem figures, if they continue change in same order.
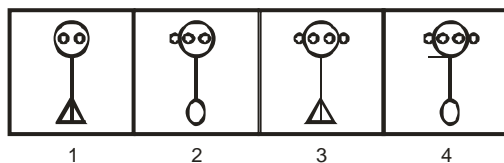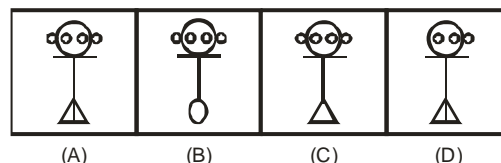
Problem Figures	Answer Figures

68.

69.

Space for Rough Work

Problem Figures   **Answer Figures**

70.

Problem Figures   **Answer Figures**

71.

Problem Figures   **Answer Figures**

72.

Problem Figures   **Answer Figures**

73.

Problem Figures   **Answer Figures**

74.

Problem Figures   **Answer Figures**

75.

Space for Rough Work

Directions (Q.No.-76 – 82): The first unit contains two figures and the second unit contains one figures and a question mark. Find out which one of the answer figure should go in place of the question mark?

76.

Problem Figures	Answer Figures

1   2   3   4

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

77.

Problem Figures	Answer Figures

1   2   3   4

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

78.

Problem Figures	Answer Figures

1   2   3   4

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

79.

Problem Figures	Answer Figures

1   2   3   4

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

80.

Problem Figures	Answer Figures

1   2   3   4

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

81.

Problem Figures	Answer Figures

1   2   3   4

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

82.

Problem Figures	Answer Figures

1   2   3   4

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

Space for Rough Work

Directions (Q.No.-83 – 87): In each of the following questions a design/pattern is given. One segment is missing from the design. Select the alternative which will complete the design when placed on the missing area.

83.

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

84.

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

85.

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

86.

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

87.

(A)   (B)   (C)   (D)
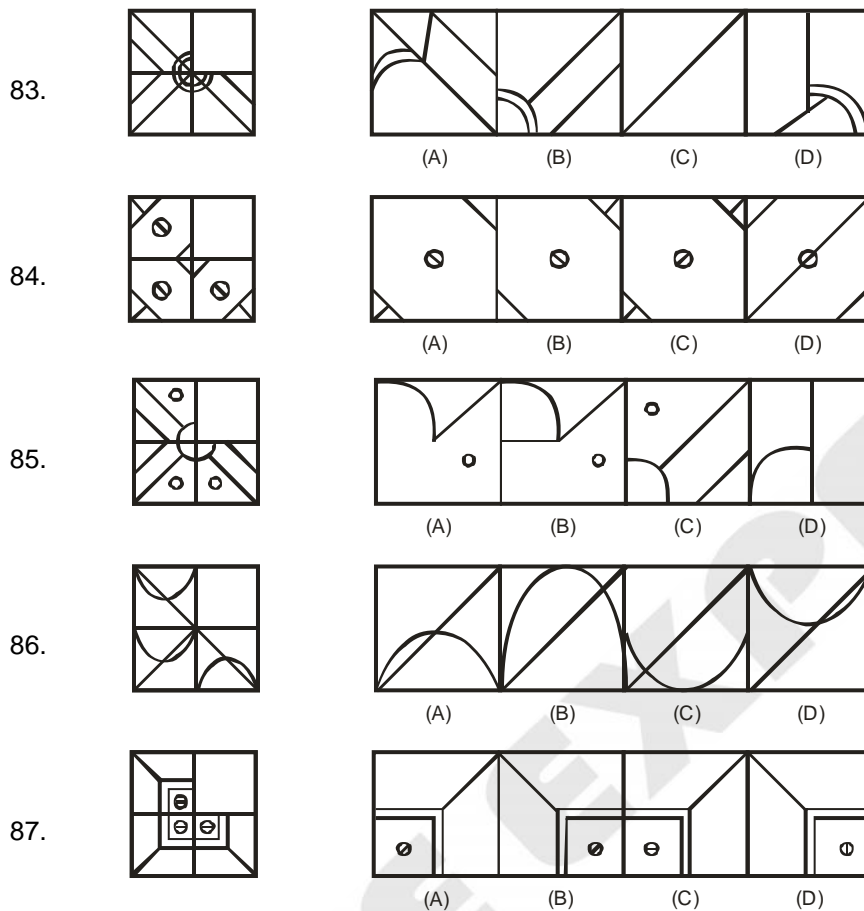
Directions (Q.No.-88 – 92): In each of the following questions a related pair of words is followed by four numbered pairs of words. Select the pair that has a relationship similar to that in the original pair.

88.   Effort : Success : : ?
    (A) Play : Cricket   (B) Healthy : Vitamin
    (C) Climb : Mountain   (D) Reading : Knowledge

89.   Earth : Moon : : ?
    (A) Asia : India   (B) Ship : Boat
    (C) Sun : Venus   (D) School : Classroom

90.   Visitor : Welcome : : ?
    (A) Warrior : Conquer   (B) Worship : God
    (C) Hungry : Beggar   (D) Criminal : Prosecute

91.   Fan : Sweat : : ?
    (A) Air : Fire   (B) Smoke : Water
    (C) Cloud : Drought   (D) Candle : Darkness

Space for Rough Work

92. Tide : Moon : : ?
   (A) Waves : Sea
   (B) Storm : Wind
   (C) Anger : Weep
   (D) Happiness : Misfortune

Directions (Q.No.-93 – 97): In each questions below are given two statements followed by two conclusions numbered I and II. Decide which of the given conclusions logically follows from the two given statements disregarding commonly known facts. Give answer (A) if only conclusion I follows (B) if only conclusion II follows (C) if either I or II follows and (D) if neither I nor II follows

93. **Statements:** Some chairs are rabbits. Table is a chair.
   Conclusion I. Some rabbits are chair.
   Conclusion II. Table is not a rabbit.

94. **Statements:** All questions are answers.
   Conclusion I. Some problems are questions.
   Conclusion II. Some answers are questions.

95. **Statements:** Some shoes are shirts. All shirts are caps.
   Conclusion I. Some shoes are caps.
   Conclusion II. Some shoes are not shirts.

96. **Statements:** All plants are flowers. Some flowers are pens.
   Conclusion I. All plants are pens.
   Conclusion II. Some plants are pens.

97. **Statements:** All helicopters are buses. All buses are cars.
   Conclusion I. All buses are helicopters.
   Conclusion II. All helicopters are cars.

98. In a certain series given below, count each 5 which is not immediately preceded by 3 but is immediately followed by 7. How many such 5's are there?
   1 5 7 3 5 7 4 7 3 7 2 5 6 5 8 5 7 4 5 6 5 5 7 1 5 7 7 5 5
   (A) 1
   (B) 2
   (C) 3
   (D) 4

99. How many 5's are there in the following number series which are either preceded by 6 or followed by 7?
   3 1 2 4 5 6 7 5 6 5 7 2 4 7 5 6 6 5 7 5
   (A) 1
   (B) 2
   (C) 3
   (D) 4

100. How many 9's are followed by 6 as well as preceded by 6, in the following number series?
   6 6 9 6 9 9 9 6 6 6 9 6 9 6 6 9 9 6 6 9 9 6 6 9
   (A) 3
   (B) 4
   (C) 5
   (D) 6

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JEE EXPERT

Going - XII
(MAT)[20.01.2019]
ANSWERS

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