



Aakash

Medical | IIT-JEE | Foundations

(Divisions of Aakash Educational Services Limited)

Regd. Office : Aakash Tower, 8, Pusa Road, New Delhi-110005 | Ph.: 011-47623456

Questions & Answers for NTSE (Stage-I) 2019-20

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you open the question booklet.

1. Use blue/black ballpoint pen only. There is no negative marking.
2. Part I : MAT : 1 - 100 questions
Part II : SAT : 1 - 100 questions
3. This test booklet contains 200 questions of one mark each. All the questions are compulsory.
4. Answer each question by darkening the one correct alternative among the four choices on the OMR SHEET with blue/black ballpoint pen.

Example :

	Q. No.	Alternatives
Correct way :	1	① ② ● ④
	Q. No.	Alternatives
Wrong way :	1	⊗ ⊖ ⊙ ④

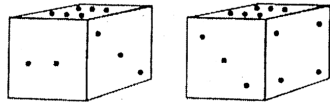
Student must darkening the right oval only after ensuring correct answer on OMR Sheet.

5. Students are not allowed to scratch / alter / change out an answer once marked on OMR Sheet, by using white fluid / eraser / blade / tearing / wearing or in any other form.
6. Separate sheet has been provided for rough work in this test booklet.
7. Please handover the OMR Sheet to the invigilator before leaving the Examination Hall.
8. Darken completely the ovals of your answer on OMR Sheet in the time limit allotted for that particular paper.
9. Your OMR Sheet will be evaluated through electronic scanning process. Incomplete and incorrect entries may render your OMR Sheet invalid.
10. Use of electronic gadgets, calculator, mobile etc, is strictly prohibited.

PART-I : MENTAL ABILITY TEST (MAT)

Directions (Q.4 to Q.6) : Two positions of a block with 1 to 6 dots on its sides are shown below. Observe the dots on block.

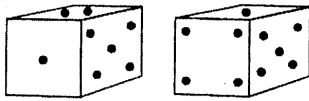
1. If the block is resting on the side with three dots. What will be the number of dots on the side the top?



- (1) 1 or 5
(2) 2
(3) 4
(4) 6

Answer (1)

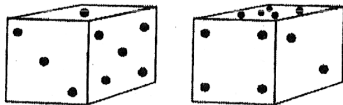
2. How many dots are contained on the face opposite to that containing four dots?



- (1) 2
(2) 5
(3) 3
(4) 6

Answer (1)

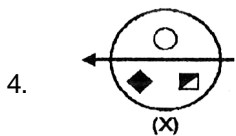
3. What is the number of dots on the face opposite 2 dots ?



- (1) 1
(2) 3
(3) 4
(4) 6

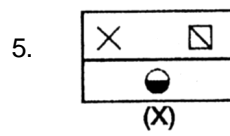
Answer (2)

Directions (Q.4 to Q.6) : Choose the correct water image of the figure (x) from amongst the alternatives given along with its.



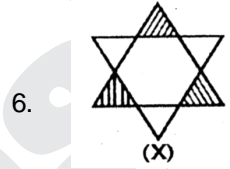
- (1)
- (2)
- (3)
- (4)

Answer (1)



- (1)
- (2)
- (3)
- (4)

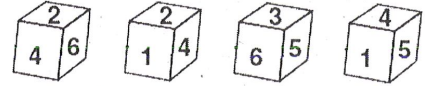
Answer (3)



- (1)
- (2)
- (3)
- (4)

Answer (4)

7. Which number is opposite to 3?



- (1) 6
(2) 4
(3) 2
(4) 1

Answer (2)

Direction: (Q.8 to Q.12) A cube painted red on two adjacent faces and black on the faces opposite to the red faces and green on the remaining faces is cut into sixty four smaller cubes of equal size.

8. How many cubes are there which have no face painted ?

- (1) 1
(2) 4
(3) 8
(4) 16

Answer (3)

9. How many cubes have only one face painted ?

- (1) 8 (2) 16
(3) 24 (4) 32

Answer (3)

10. How many cubes are there with three faces painted ?

- (1) 4 (2) 8
(3) 16 (4) 24

Answer (2)

11. How many cubes are there with two faces painted?

- (1) 24 (2) 8
(3) 32 (4) 12

Answer (1)

12. How many cubes have one face green and one of the adjacent faces black or red?

- (1) 8 (2) 16
(3) 24 (4) 28

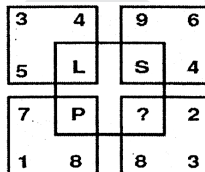
Answer (2)

13. Which group of letters is different from others?

- (1) CBAED (2) TSRVU
(3) KJIMN (4) WVUYX

Answer (3)

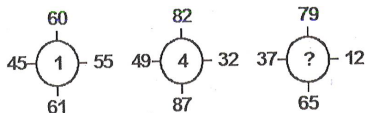
14. Find the letter to be placed in place of (?) in the figure given.



- (1) M (2) N
(3) Q (4) R

Answer (1)

15. Identify the number in the position of (?).



- (1) 4 (2) 5
(3) 6 (4) 7

Answer (2)

16. A sprinter goes off the starting block for 100 m run and at that instant the second hand of a stop watch had pointed towards North. He touches the finishing line exactly after 12 second. In which direction did the second hand point when he just crossed the finishing line?

- (1) 18° North of East (2) 18° East of North
(3) 72° North of East (4) 82° East of North

Answer (1)

Direction (Q.17 to Q.21) : Each letter of alphabet from A to Z has been given a value from 1 to 26 serially. Solve the questions on the basis of value of words.

17. BUSH = 50, CAMP = 33, then LIKE = ?

- (1) 40 (2) 41
(3) 32 (4) 37

Answer (4)

18. Which word has the maximum value?

- (1) BURN (2) CURT
(3) DUCK (4) BUOY

Answer (4)

19. Which words have the equivalent value?

- (1) KING : CAST (2) BURY : SURE
(3) RICH : BOAT (4) BLUE : CANT

Answer (3)

20. Which equation is **correct**?

- (1) $X + Y = 50$ (2) $Z - T = 6$
(3) $B \times V = 41$ (4) $R \div I = 5$

Answer (2)

21. Which word is equivalent to 106 ?

- (1) MONKEY (2) DOG JACKY
(3) HAI HAPPY (4) SO LUCKY

Answer (4)

22. What will come at the place of '?'

T	E	Y
O	K	Z
R	G	?

- (1) W (2) X
(3) Y (4) Z

Answer (3)

23. How many times in 24 hours the hands (hour & minutes) of a clock will be at right angles?

- (1) 24 (2) 30
(3) 72 (4) 48

Answer ()

24. If a train runs at a speed of 92.7 km/hr, then the distance covered in metres in 17 minutes will be:

- (1) 26265 (2) 26700
(3) 30002 (4) 29365

Answer (1)

Direction (Q.25 & Q.26) : A lady runs 12 km towards North, then 6 km towards south and then 8 km East.

25. How far is she from her starting point?

- (1) 26 km (2) 18 km
(3) 14 km (4) 10 km

Answer (4)

26. Which direction is she from her starting point?

- (1) North-East (2) North
(3) East (4) North-West

Answer (1)

27. Here are some words translated from an artificial language –

mie pie is blue light

mie tie is blue berry

aie tie is rasp berry

Which words could possibly mean "light fly"

- (1) pie zie (2) pie mie
(3) aie zie (4) aie mie

Answer (1)

28. If in a certain code, STUDENT is written as RSTEDMS, then how would TEACHER be written in the same code?

- (1) SZZDGEQ (2) SZDDGEQ
(3) SDZDGDQ (4) SDZCGDQ

Answer (3)

29. If CHAIR is coded as FKDLU then RAID is coded as:

- (1) ULGD (2) ULKG
(3) ULDG (4) UDLG

Answer (4)

30. In a certain code HNDT has been coded as 3694. How will you code THD in the same code?

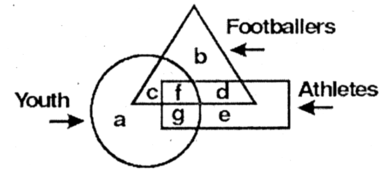
- (1) 604 (2) 428
(3) 439 (4) 349

31. If the word PENCIL is coded as LICNEP then how would the word INKPOT be coded?

- (1) TOPINK
(2) JOLQPU
(3) HMKOPS
(4) TOPKNI

Answer (4)

32. In the figure, the circle represents youth, the triangle represents footballers and the rectangle represents athletes – which letter represents athletes among youth who are not footballers?



- (1) c (2) g
(3) d (4) f

Answer (2)

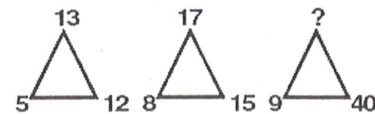
33. **Statement :** All clocks are Alarms. No Clocks are cuckoos. All cuckoos are Alarms. Some cuckoos are Birds.

Conclusion :

- (I) : Some Alarms are Birds
(II) : No Clock is a Bird
(III) : All Birds are Alarms
(1) Only conclusion I follows
(2) Only conclusion II follows
(3) Only conclusion III follows
(4) Both conclusions II and III follows

Answer (1)

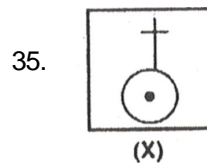
34. Find the number in the Position of '?'



- (1) 42 (2) 40
(3) 41 (4) 45

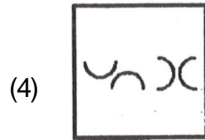
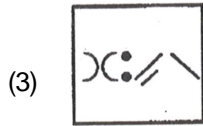
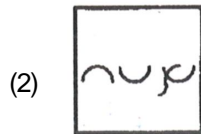
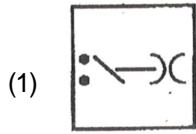
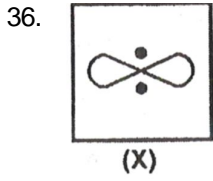
Answer (3)

Direction : (Q.35 to Q. 38): Find out which of the alternatives will exactly make up the key figure (X) ?

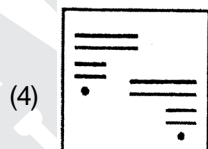
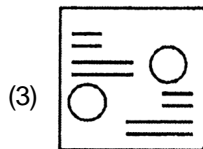
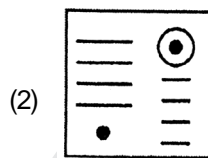
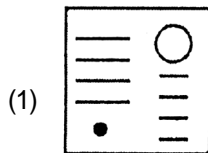
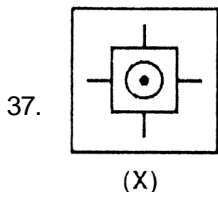


- (1)
- (2)
- (3)
- (4)

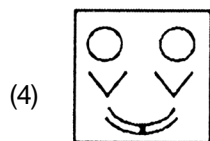
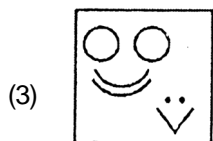
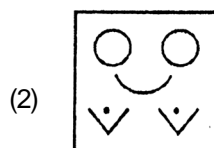
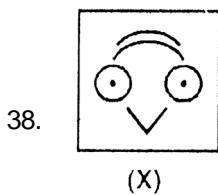
Answer (3)



Answer (1)

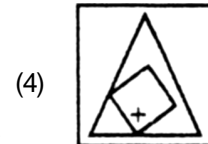
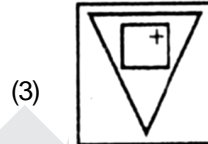
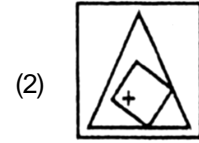
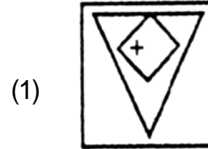
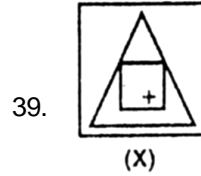


Answer (1)

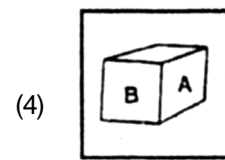
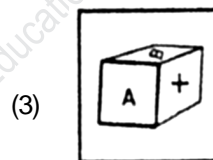
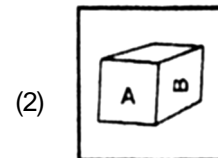
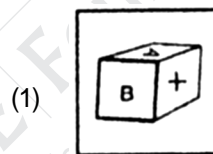
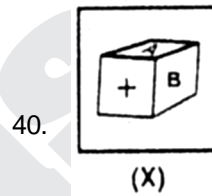


Answer (3)

Direction (Q.39 & Q.40) : Find out how will the key figure (X) look like after rotation?

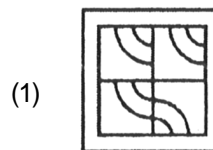
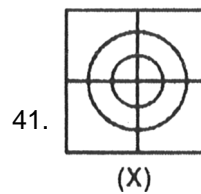


Answer (2)

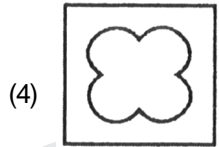
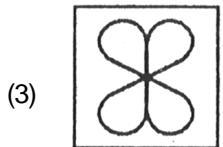
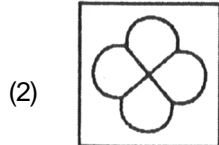
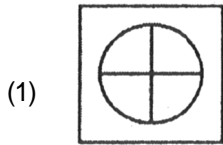
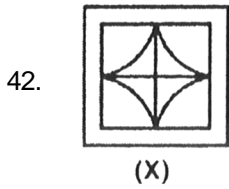


Answer (3)

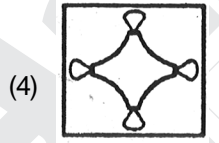
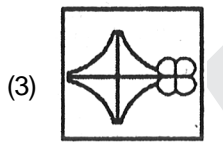
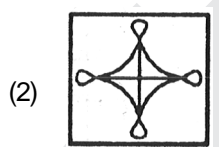
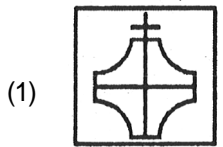
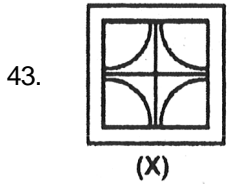
Direction (Q.41 to Q.43) : Which figure is the rearrangement of the parts of the given figure ?



Answer (1)

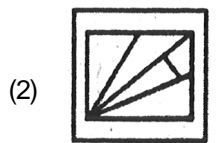
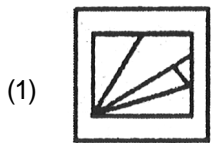
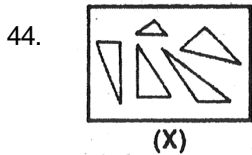


Answer (1)

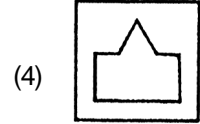
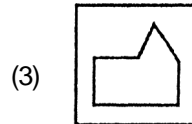
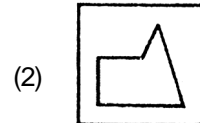
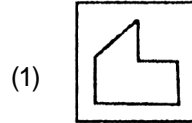
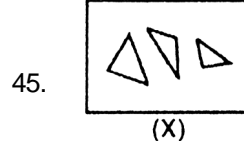


Answer (1)

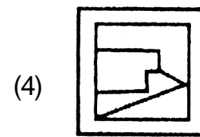
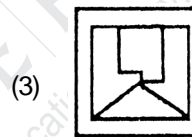
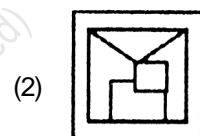
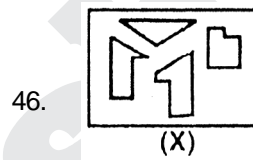
Direction (Q.44 to Q.48) : Find out which of the figures (1, 2, 3 and 4) can be formed from the pieces given in the figure (X) .



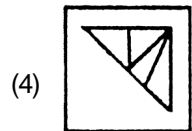
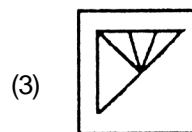
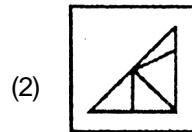
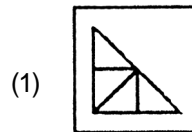
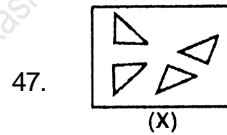
Answer (3)



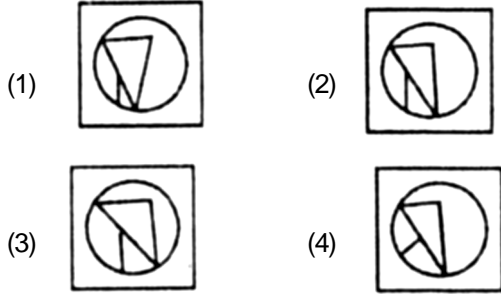
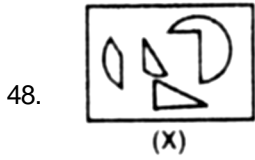
Answer (2)



Answer (3)

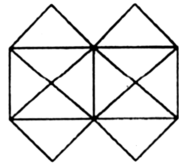


Answer (1)



Answer (2)

Direction : (Q.49 to 51) Study the following figure and answer the questions.



49. What is the minimum number of straight lines that is needed to construct the figure ?

- (1) 11 (2) 13
 (3) 15 (4) 21

Answer (2)

50. Count the number of triangles in the figure.

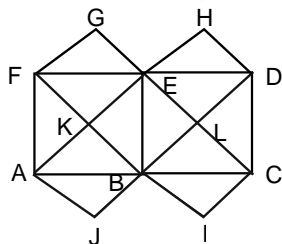
- (1) 22 (2) 16
 (3) 20 (4) 24

Answer (1)

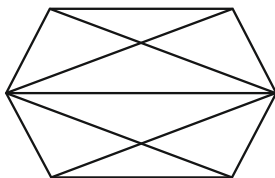
51. How many squares does the figure contain?

- (1) 5 (2) 6
 (3) 7 (4) 8

Answer (3)



Direction: (Q.52 & Q.53) Analyse the following figure and answer the questions



52. Find the number of quadrilaterals.

- (1) 6 (2) 7
 (3) 9 (4) 10

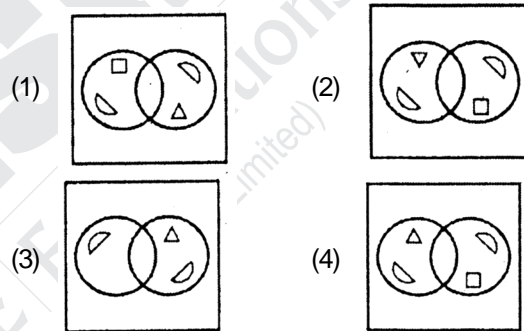
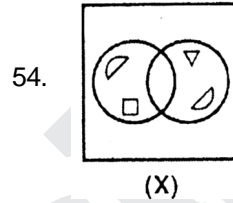
Answer ()

53. Find the number of Pentagons.

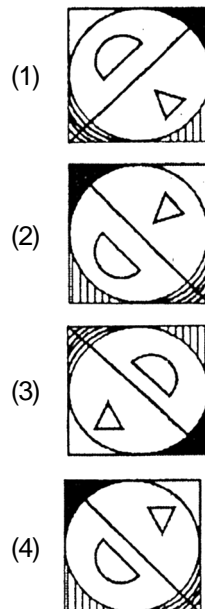
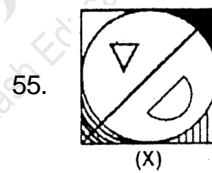
- (1) 2 (2) 3
 (3) 4 (4) 6

Answer (4)

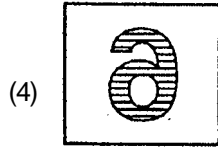
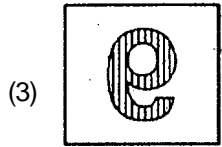
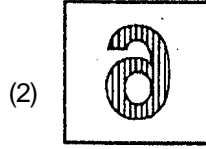
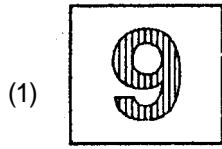
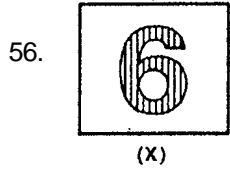
Direction: (Q. 54 & 58) Choose the mirror image of the figure, (X) from amongst the four alternatives 1, 2, 3 and 4 given along with it.



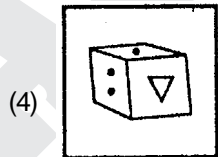
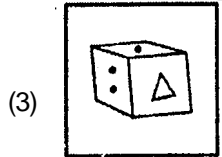
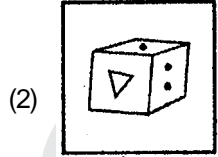
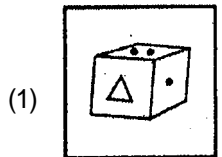
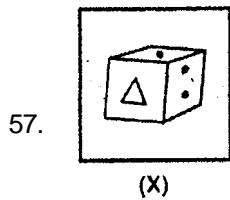
Answer (2)



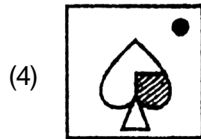
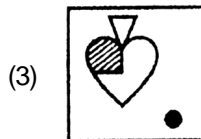
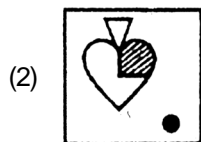
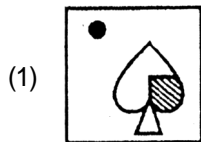
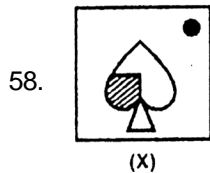
Answer (4)



Answer (2)



Answer (3)



Answer (1)

59. Asha's house faces south direction. She runs ahead 10 m, turns left and runs 5 m. Then she turns left again and runs 15 m and then again turns left and runs 10 m. Finally, she turns right and runs 5 m to reach her friend's house. What direction is Asha's friend's house facing ?

- (1) South (2) North
(3) East (4) West





Answer (1)

60. Mother was asked how many gifts she had in the bag. She replied that there were all dolls except six, all car's but six and all books but six. How many gifts had she in all?

- (1) 36 (2) 27
(3) 18 (4) 9

Answer (4)

61. Which of the following diagram indicate the relation between women, mothers and parents?

- (1) 
(2) 
(3) 
(4) 

Answer (1)

62. In a dairy, there are 60 cows and buffalos, The number of Cows is twice that of buffalos. Buffalo X ranked seventeenth in terms of milk delivered. If there are 9 Cows ahead of buffalo X, how many buffalos are after in rank in terms of milk delivered?

- (1) 10 (2) 11
(3) 12 (4) 13

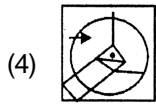
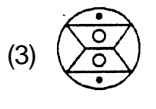
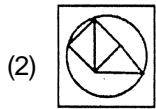
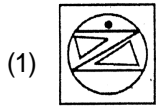
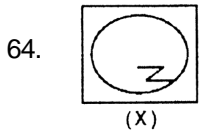
Answer (3)

63. Amongst five friends, Lata, Alka, Rani, Asha and Sadhana. Lata is older than only three of her friends. Alka is younger to Asha and Lata. Rani is older than only Sadhana. Who amongst them is the eldest?

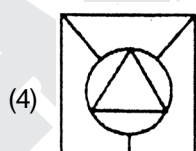
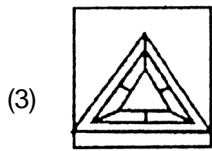
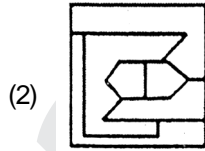
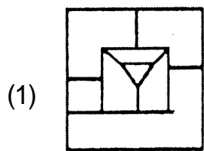
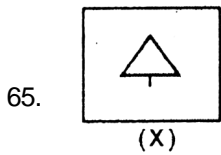
- (1) Asha (2) Lata
(3) Alka (4) Sadhana

Answer (1)

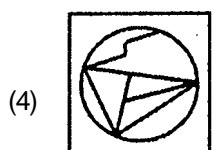
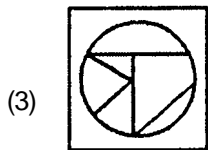
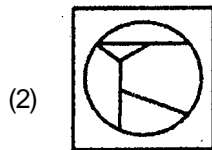
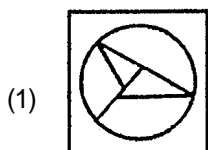
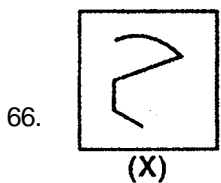
Direction: (Q.64 to Q.68) There is given a figure(X) followed by four figures 1, 2, 3 and 4 such that X is embedded in one of them. Trace out the correct alternatives.



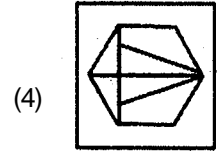
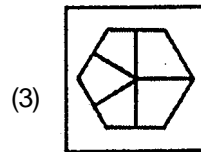
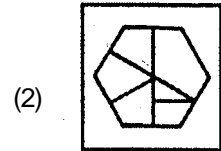
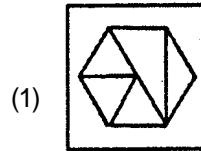
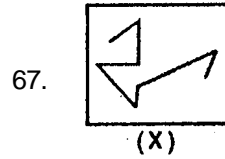
Answer (4)



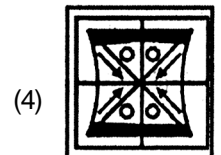
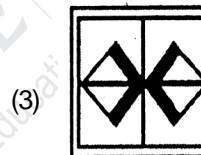
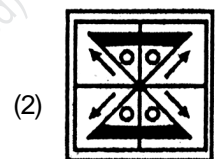
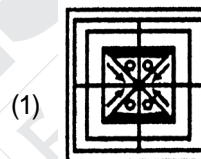
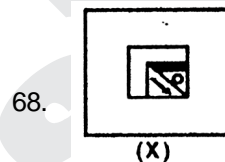
Answer (3)



Answer (2)

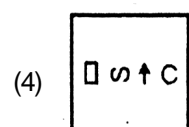
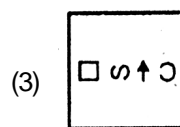
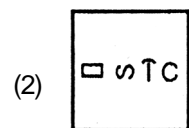
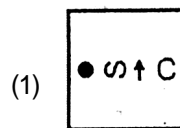
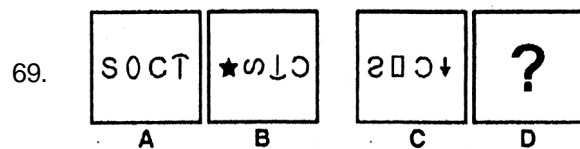


Answer (4)

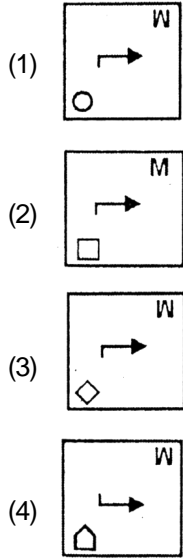
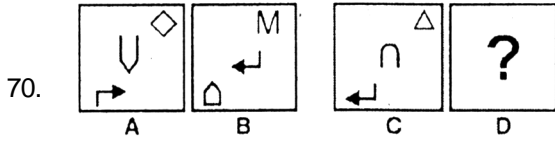


Answer (1)

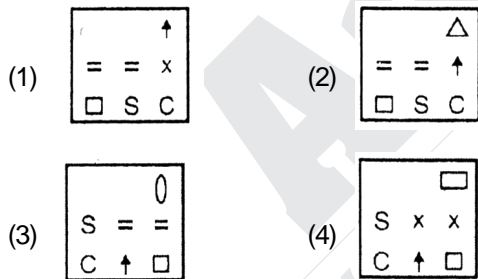
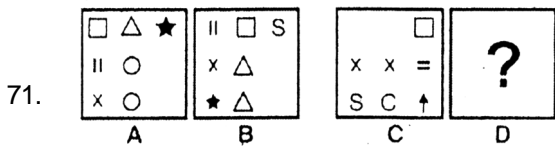
Direction (Q.69 to Q.73) : Figure A, B, C and D constitute the problem set while figures 1, 2, 3 and 4 constitute the answer set. There is a definite relationship between figures A and B. Establish a similar relationship between figures C and D by choosing a suitable figure (D) from the answer set.



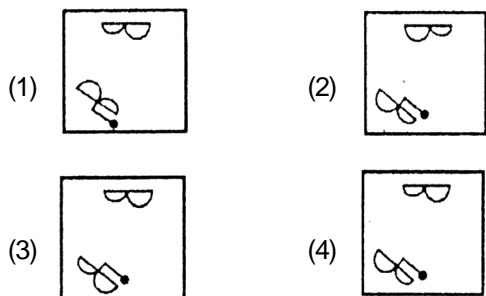
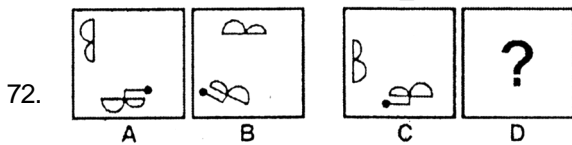
Answer (1)



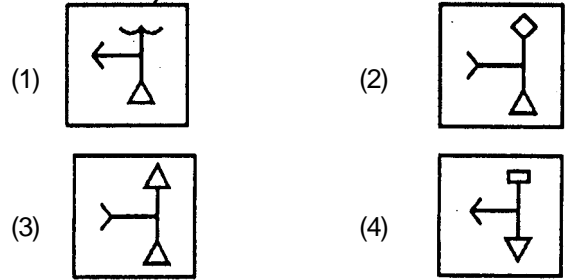
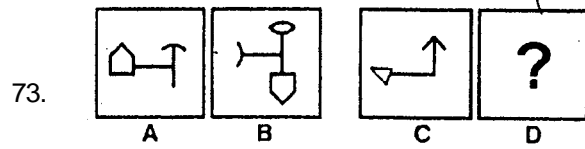
Answer (3)



Answer (2)

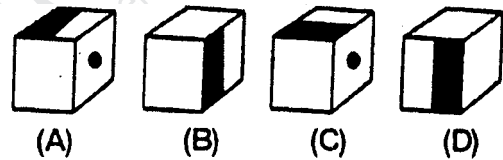
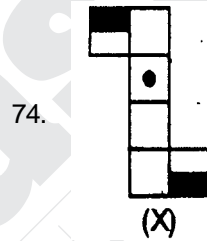


Answer (4)



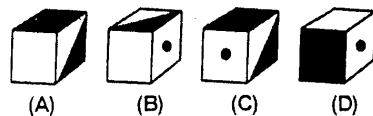
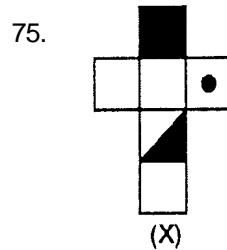
Answer (2)

Direction : (Q. 74 to 78) The figure (X) given in each problem, is folded to form a box. Choose from amongst the alternatives, the boxes that are similar to the box formed.



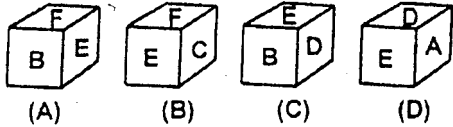
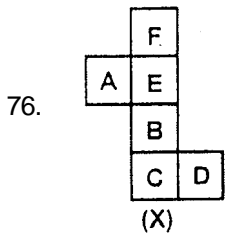
- (1) A and B only (2) B and C only
(3) B and D only (4) A, B, C and D

Answer (4)



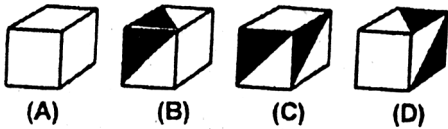
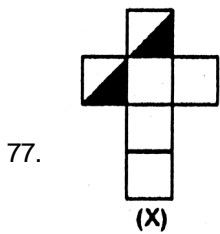
- (1) A and C only
(2) B, C and D only
(3) B and D only
(4) C and D only

Answer (3)



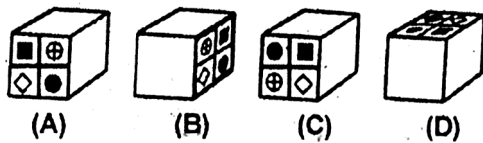
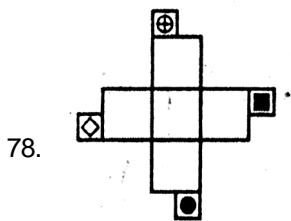
- (1) A only (2) C only
(3) A and C only (4) A and B only

Answer (2)



- (1) A and D only (2) C and D only
(3) A and B only (4) B and C only

Answer (1)

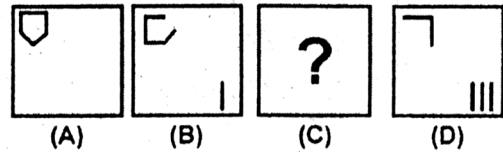


- (1) A and B only
(2) B only
(3) B and C only
(4) A, B, and D only

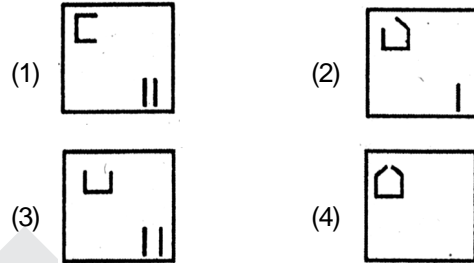
Answer (2)

Direction (Q. 79 to 85) There are given a set of four figures (A, B, C and D) forming a certain series. However, the figure at C is missing. Choose this figure from the given alternatives.

79. Problem Figures

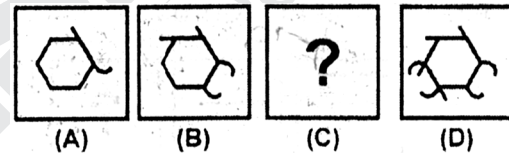


Answer Figures

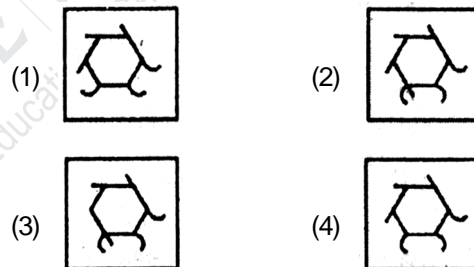


Answer (3)

80. Problem Figures

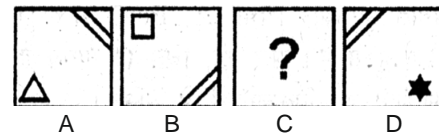


Answer Figures

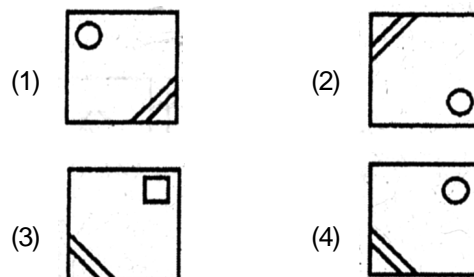


Answer (4)

81. Problem Figures

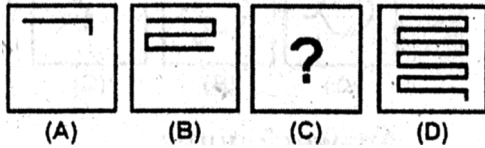


Answer Figures

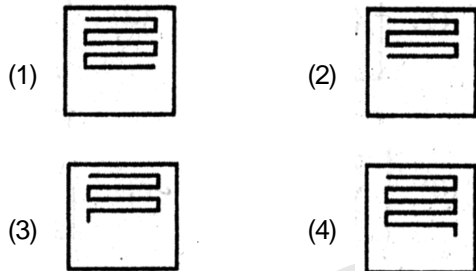


Answer (4)

82. Problem Figures

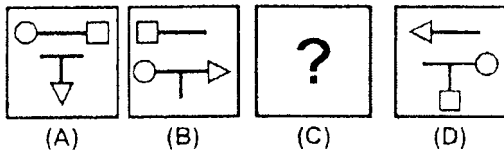


Answer Figures

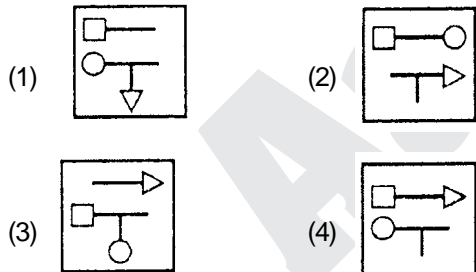


Answer (1)

83. Problem Figures

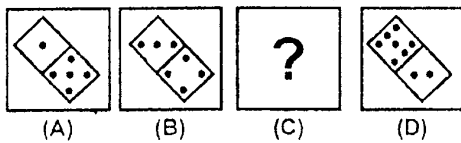


Answer Figures

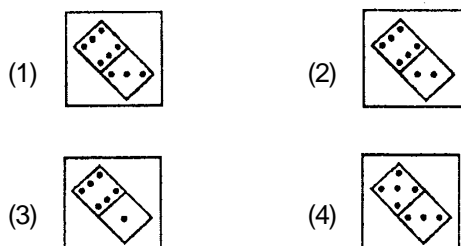


Answer (3)

84. Problem Figures

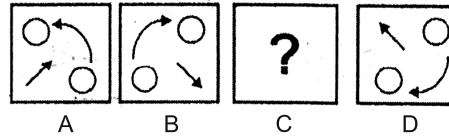


Answer Figures

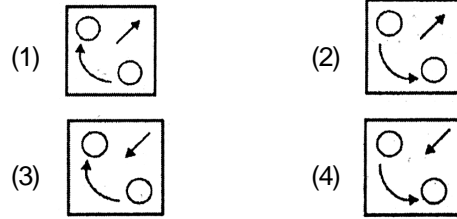


Answer (4)

85. Problem Figures

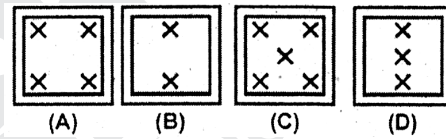


Answer Figures

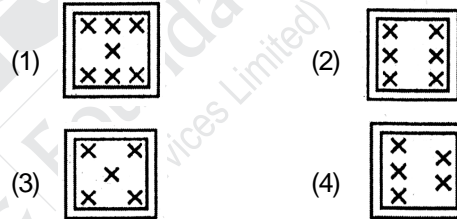


Answer (4)

86. Problem Figures

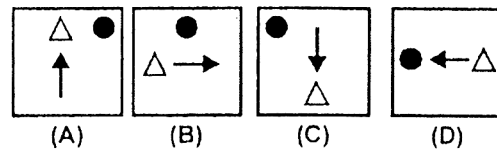


Answer Figures

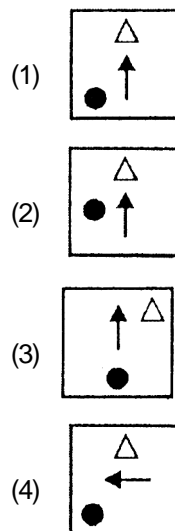


Answer (2)

87. Problem Figures

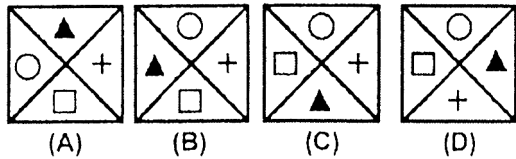


Answer Figures

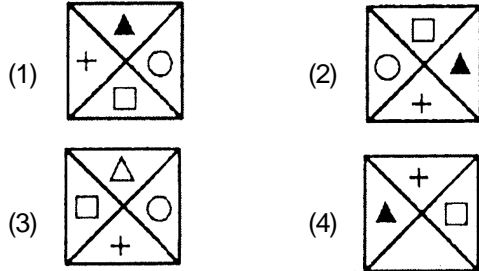


Answer (1)

88. Problem Figures

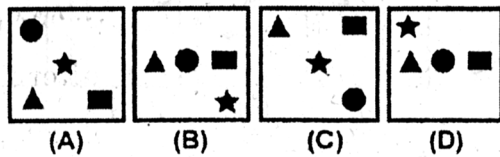


Answer Figures

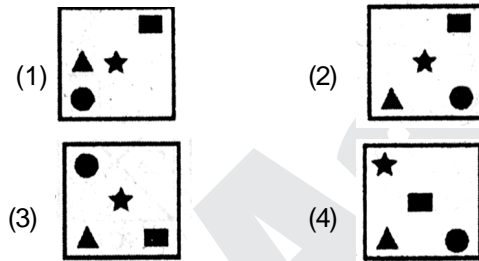


Answer (1)

89. Problem Figures



Answer Figures



Answer (3)

90. Find the missing number in the series 2, 10, 26, 50, _____, 122.

- (1) 81
- (2) 82
- (3) 80
- (4) 84

Answer (2)

Direction (Q.91 to Q.94) : In the questions, a series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.

91. 6, 24, 60, 120, ?

- (1) 180
- (2) 210
- (3) 240
- (4) 360

Answer (2)

92. 1, 9, 9, 81, 90, 810, 819, ?

- (1) 7371
- (2) 900
- (3) 8100
- (4) 1638

Answer (1)

93. 2, 3, 6, 18, 108, ?

- (1) 1944
- (2) 1658
- (3) 648
- (4) 1008

Answer (1)

94. 1, 2, 3, 4, 5, 7, 7, ?, ?

- (1) 11, 13
- (2) 10, 11
- (3) 8, 9
- (4) 9, 11

Answer (1)

Direction (Q.95 to Q.98) : Find the wrong number in the following series.

95. 24576, 6144, 1536, 386, 96, 24

- (1) 96
- (2) 386
- (3) 1536
- (4) 6144

Answer (2)

96. 3, 4, 10, 32, 136, 685

- (1) 685
- (2) 10
- (3) 136
- (4) 32

Answer (4)

97. 3, 8, 13, 24, 42, 70

- (1) 13
- (2) 24
- (3) 42
- (4) 70

Answer (3)

98. 6, 7, 9, 11, 15, 15, 28, 19, 36

- (1) 15
- (2) 28
- (3) 19
- (4) 70

Answer (2)

99. Shitin remembers that his mother's birthday is after 17th April but before twenty first April, where as his father remembers that his wife's birthday is after 19th April but before 24th April. Which of the following days in April is definitely his mother's birthday?

- (1) 19th April
- (2) 20th April
- (3) 21th April
- (4) Both statements are not sufficient

Answer (2)

100. Day after tomorrow is my birthday. On the same day next week falls 'Holi'. Today is Monday. What will be the day after 'Holi'?

- (1) Thursday
- (2) Friday
- (3) Wednesday
- (4) Saturday

Answer (1)

PART-II : SCHOLASTIC APTITUDE TEST (SAT)

1. Headquarter of UNESCO is at ?

- (1) Geneva
- (2) Rome
- (3) Paris
- (4) London

Answer (3)

2. How many valence electrons are present in Cl⁻ ion?

- (1) 5
- (2) 6
- (3) 7
- (4) 8

Answer (4)

3. Blood cells are manufactured in our :

- (1) Bone marrow
- (2) Liver
- (3) Spleen
- (4) Pancreas

Answer (1)

4. If $a = (\sin\theta - \cos\theta)^4$, $b = \sin^6\theta + \cos^6\theta$ and

$c = (\sin\theta + \cos\theta)^2$, then the value of $\sqrt{3a + 4b + 6c}$ lies between:

- (1) 2 and 3
- (2) 3 and 4
- (3) 4 and 5
- (4) 5 and 6

Answer (2)

5. Which of the following statements are **correct** in relation to liberal Nationalism in 19th C. Europe ?

- I. Freedom for the individual and equality of all before the law.
- II. Government by consent of all.
- III. End of autocracy and the privileges of clergy.
- IV. Equal political rights for women and non - propertied men.

- (1) I, II, IV
- (2) I, II, III
- (3) II, III, IV
- (4) I, III, IV

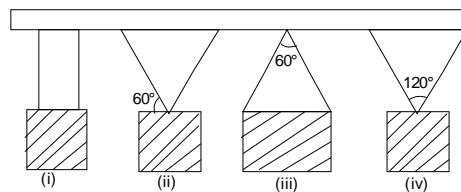
Answer (2)

6. Maintaining the proper amount of water and proper ionic balance in the body is named as :

- (1) Homeostasis
- (2) Osmoregulation
- (3) Excretion
- (4) Nutrition

Answer (2)

7. A 10 kg box is suspended from a beam in three ways as shown in figure. In which case, tension in string is maximum ?



- (1) i
- (2) ii
- (3) iii
- (4) iii & iv both

Answer (None of the given option is correct)

8. If $\frac{3}{\sqrt{28+10\sqrt{3}} - \sqrt{7-4\sqrt{3}}} = a + \sqrt{3b}$, Where a and b are integers, then the value of $\sqrt{5a+12b}$ is

- (1) 4
- (2) 3
- (3) $\sqrt{11}$
- (4) $\sqrt{13}$

Answer (None of the given option is correct)

9. Element M forms a chloride with the formula MCl_3 . Element M would most likely in the same group of periodic table as :

- (1) Si
- (2) Al
- (3) Mg
- (4) Na

Answer (2)

10. Which of the following is **not** a part of human hind brain ?

- (1) Crura cerebri
- (2) Medulla oblongata
- (3) Pons varoli
- (4) Cerebellum

Answer (1)

11. Which of the following statement does not match the Nazi views on women ?

- (1) Women are radically different from men.
- (2) Women must become good mothers and rear pure blooded 'Aryan' children.
- (3) Women should be entitled equal rights to men.
- (4) Women must produce more children.

Answer (3)

12. What model of government did Montesquieu propose in his book 'A Spirit of Laws' ?
- (1) To refute the doctrine of the divine and absolute rights of the monarch.
 - (2) A government based on the social contract between people and their representatives.
 - (3) Division of powers within the government between the legislative, the executive and the judiciary.
 - (4) Concentration of all the powers in the hands of a monarch and his group of loyal people.

Answer (3)

13. Read the following statements.

Statement-I : Plaster of Paris is stored in moisture proof containers.

Statement-II : Plaster of Paris on reaction with water changes into a hard solid gypsum.

Select the correct answer from the options given below:

- (1) Statement-I is true.
Statement-II is false.
- (2) Statement-I is false.
Statement-II is true.
- (3) Both Statements are true and Statement-II provides explanation to Statement-I.
- (4) Both Statements are true but Statement-II does not provides explanation to statement-I.

Answer (3)

14. Organs which look different and perform different functions but have similar basic structure and origin are called :
- (1) Analogous organs
 - (2) Homologous organs
 - (3) Similar organs
 - (4) Dissimilar organs

Answer (2)

15. Two organic compounds 'X' and 'Y' react with sodium metal and both produce same gas 'A'. With sodium hydrogen carbonate only compound 'Y' reacts to produce gas 'B' identify X, Y, A and B.
- (1) $X = C_2H_4$ $Y = C_2H_5OH$ $A = CO_2$ $B = H_2$
 - (2) $X = C_2H_5OH$ $Y = CH_3COOH$ $A = H_2$ $B = CO_2$
 - (3) $X = CH_3OH$ $Y = C_2H_5OH$ $A = H_2$ $B = CO_2$
 - (4) $X = CH_3COOH$ $Y = HCOOH$ $A = CO_2$ $B = H_2$

Answer (2)

16. How many numbers lie between 100 and 400 which when divided by 9 leave a remainder 6, and when divided by 21, leave a remainder 12?
- (1) 3
 - (2) 4
 - (3) 5
 - (4) 6

Answer (2)

17. What did freedom mean for the plantation workers of Assam ?
- (1) Self Government
 - (2) Freedom from Zamindars
 - (3) Fare labour
 - (4) Right to move freely in and out of the plantations.

Answer (4)

18. If a , b and c are integers such that

$$(\sqrt[3]{4} + \sqrt[3]{2} - 2)(\sqrt[3]{4a} + \sqrt[3]{2b} + c) = 20$$

then which one of the following is true?

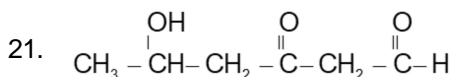
- (1) $a + b - c = 10$
- (2) $a - b + c = 10$
- (3) $a + b = 2c$
- (4) $a + b + c = 16$

Answer (No option is correct)

19. Which of the following were the famous three demands of Lenin that are also known as 'April Theses' ?
- The war be brought to close.
 - Land be transferred to the peasants.
 - Restrictions on public meetings be imposed
 - Banks be nationalised.
- (1) I, II, III
 - (2) II, III, IV
 - (3) I, III, IV
 - (4) I, II, IV

Answer (4)

20. Carrying the flag, holding it aloft during marches in Indian National movement, was a symbol of :
- (1) Leadership
 - (2) Defiance
 - (3) Non - Violence
 - (4) Satyagrah

Answer (2)

Which functional groups are present in this organic compound?

- (1) Alcohol, ketone and ester
- (2) Alcohol, ketone and carboxylic acid
- (3) Alcohol, ketone and aldehyde
- (4) Alcohol, aldehyde and carboxylic acid

Answer (3)

22. How many subjects are given in central list ?

- (1) 97 (2) 66
 (3) 50 (4) 47

Answer (1)

23. What is the mass of 2.5 moles of CO₂?

- (1) 100 g (2) 110 g
 (3) 88 g (4) 98 g

Answer (2)

24. Which of the following organ in human male is called thermoregulator ?

- (1) Vas deferens (2) Ejaculatory ducts
 (3) Scrotum (4) Cowper's gland

Answer (3)

25. The graphs of the equations $2x + 3y = A$ and $x + 2y = B$ intersect at the point P, which also lies on the graph of the equation:

- (1) $5x + 3y = A - B$ (2) $3x - 5y = A + B$
 (3) $3x - 5y = A - B$ (4) $3x + 5y = A + B$

Answer (4)

26. Radha works in an office from 9 am to 5 pm. She gets her salary regularly every month and also she gets provident fund, medical and other allowances as per the rules laid down by the govt. Sunday is a paid holiday for her. She was given an appointment letter stating all the terms and conditions of work at the time of joining.

Her cousin Ram is a daily wage labourer in a cloth shop. He goes to shop at 8 am and works till 8 pm in the evening. He does not get any type of allowances apart from his wages. He is not paid for days he does not work i.e. He does not get paid holidays. Also, he did not get any appointment letter.

In which sectors, Both Radha and Ram work ?

- (1) Both are in organised sectors.
 (2) Both are in unorganised sectors.
 (3) Radha works in organised sector 'while Ram works in unorganised sector.
 (4) Radha works in unorganised sector while Ram works in organised sector.

Answer (3)

27. Who was the author of Arthashastra ?

- (1) Kautilya (2) Plato
 (3) Aristotle (4) Mechiavelli

Answer (1)

28. Which is the ruling party in Telangana ?

- (1) T.D.P
 (2) Indian National Congress
 (3) B.J.P
 (4) T.R.S.

Answer (4)

29. Which of the following UT does not have its own Assembly ?

- (1) Delhi (2) J & K
 (3) Ladakh (4) Pondicherry

Answer (3)

30. Teacher wrote following points on the blackboard about a particular crop i.e. Temp. 20° - 35°C, Rainfall - not less than 200 cm Terrain - undulating, soil - laterite, red, yellow. Which of the following crop the teacher is discussing about ?

- (1) Jute (2) Millet
 (3) Coffee (4) Rubber

Answer (4)

31. The daily wage of a person in rural area is Rs. 200 and the poverty line for a person is fixed at Rs. 800 per month for rural areas. Following table shows the detail of employment of four families living in a village. Identify the family living below poverty line:

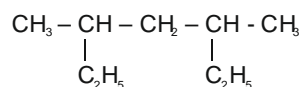
Family Total days of Employment got in a months by the family Member of family

Family	Total days of Employment got in a months by the family	Member of family
Ram	10	2
Radha	18	3
Raju	12	4
Pooja	25	5

- (1) Pooja (2) Ram
 (3) Radha (4) Raju

Answer (4)

32. The I.U.P.A.C. name of following compound is:



- (1) 2,4 - Diethyl pentane
 (2) 2, 4 - Diethyl butane
 (3) 3, 5 - Dimethyl hexane
 (4) 3, 5 - Dimethyl heptane

Answer (4)

33. Which one of the following is not an example of fixed capital ?

- (1) Tools
- (2) Raw Materials
- (3) Machines
- (4) Buildings

Answer (2)

34. If $\sqrt{\frac{1-\cos\theta}{1+\cos\theta}} \times \sqrt{\frac{\operatorname{cosec}\theta - \cot\theta}{\operatorname{cosec}\theta + \cot\theta}} = \frac{r-1}{r+1}$, then

- (1) $\tan\theta = \sqrt{r^2 - 1}$
- (2) $\cos\theta = r$
- (3) $\sin\theta + \cos\theta = \frac{\sqrt{r^2 + 1}}{r}$
- (4) $\cot\theta = \sqrt{1 - r^2}$

Answer (1)

35. Arrange the following households in ascending order of per capita income.

Name of Household	Total Income of Household	Size of the Household
Rajat	6000	5
Raman	5000	5
Suman	3200	4
Priya	8400	6

- (1) Suman < Raman < Rajat < Priya
- (2) Priya < Rajat < Raman < Suman
- (3) Raman < Rajat < Suman < Priya
- (4) Suman < Rajat < Raman < Priya

Answer (1)

36. India imports Chinese toy at Rs. 100, whereas the same toy is manufactured and available in India for Rs. 150. Now if Indian Govt. puts tax of Rs. 50 on import of that toy. This practice of Indian Govt. is known as :

- (1) Export substitution
- (2) Trade barrier
- (3) Import substitution
- (4) Dumping

Answer (2)

37. The arithmetic progressions : 1, 4, 7, and 2, 10, 18,, each contains 100 terms, How many terms are common to both the progression?

- (1) 10
- (2) 12
- (3) 13
- (4) 14

Answer (3)

Direction (Q.38 to Q.41) : Read the statements and select the correct answer from the options given below.

- (1) Statement-I is True.
Statement-II is false.
- (2) Statement-I is false.
Statement-II is true.
- (3) Both statement are true and Statement-II provides explanation to statement-I.
- (4) Both statements are true but statement-II does not provide explanation of statement-I

38. **Statement-I :** Three wars over seven years with Austria, Denmark and France ended in Prussian Victory and completed the process of unification of Germany.

Statement-II : On 18th January, 1871 new German Empire was proclaimed headed by Kaiser William I of Prussia in the Palace of Versailles.

Answer (3)

39. **Statement-I :** On 5th May, 1789 Louis XVI called together an assembly of the Estate General to pass proposals for new taxes.

Statement-II : The members of the third estate demanded that voting now be conducted by the principle that estate had one vote.

Answer (1)

40. **Statement-I :** Under the shadow of the Second World War Germany had waged a genocidal war, which resulted in the mass murder of selected groups of innocent civilians of Europe.

Statement-II : Germany's conduct during the war, especially those actions which came to be called 'Crimes Against Humanity' raised serious moral and ethical question and invited worldwide condemnation.

Answer (3)

41. **Statement-I :** After the corn laws were scrapped the condition of peasants deteriorated as they were unable to compete with imports.

Statement-II : Around the world in Eastern Europe, Russia, America and Australia lands were cleared and food production expanded to meet the British demand.

Answer (3)

50. Select the correct set of statements regarding change in properties, as we move left to right in the second period of periodic table :

- I. Atomic size decreases
 II. Valency remains same
 III. Electronegativity increases
 IV. Metallic character decreases
- (1) I, II and III (2) II, III and IV
 (3) I, II and IV (4) I, III and IV

Answer (4)

51. Shivasamudram fall is found on which river?

- (1) Mahanadi (2) Chenab
 (3) Cavery (4) Krishna

Answer (3)

52. Which metallic mineral is famous in the Balaghat district of Madhya Pradesh?

- (1) Gold (2) Iron
 (3) Copper (4) Zinc

Answer (3)

53. Ram was working with his father in their farm. His father was small farmer. Income generated from the farm was not enough for the family. Ram got an opportunity to get loan from the bank under a govt. programme. He bought a rickshaw with that money and started working as a rickshaw puller in the city. Now he is able to earn good enough and their family income is increased than earlier. Such kind of activity done by Ram to improve his financial condition comes under:

- (1) Primary sector (2) Secondary sector
 (3) Manufacturing sector (4) Service sector

Answer (4)

54. A screen bearing a real image of magnification m_1 , formed by a convex lens, is moved by a distance x . The object is then moved until a new image of magnification m_2 is formed on screen. The focal length of lens is :

- (1) $\frac{x}{m_2 - m_1}$ (2) $\frac{m_2 - m_1}{x}$
 (3) $\frac{x}{m_1 - m_2}$ (4) $\frac{m_1 - m_2}{x}$

Answer (3)

55. The number of integral solutions (x, y) of the system of equations $x^2 - xy + 8 = 0$ and $x^2 - 8x + y = 0$ is

- (1) 1 (2) 2
 (3) 3 (4) 0

Answer (1)

56. Match the following famous place with their respective states.

- | I | II |
|---------------------------------|------------------------|
| (A) Pampa Sagar Lake | (i) Tamil Nadu |
| (B) Dibang Multipurpose Project | (ii) Arunachal Pradesh |
| (C) Umnanda Island | (iii) Karnataka |
| (4) Anicut Canal | (iv) Guwahati |
| (1) A(ii), B(i), C(iii), D(iv) | |
| (2) A(iii), B(ii), C(iv), D(i) | |
| (3) A(iii), B(iv), C(i), D(ii) | |
| (4) A (iv), B(ii), C(i), D(iii) | |

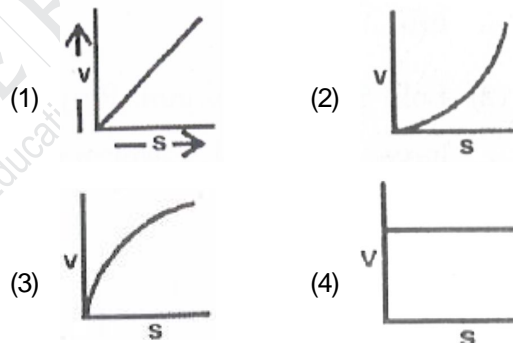
Answer (2)

57. Which of the following type of teeth are called as tearing teeth ?

- (1) Incisors (2) Canines
 (3) Premolars (4) Molars

Answer (2)

58. A body is dropped from rest. Its velocity varies with displacement covered as :



Answer (3)

59. In $\triangle ABC$, BE and CD are the perpendiculars on sides AC and AB , respectively and intersect each other at O . The bisectors of $\angle OBC$ and $\angle OCB$ meet at P . If $\angle BPC = 146^\circ$, then what is the measure of $\angle A$?

- (1) 34° (2) 68°
 (3) 73° (4) 36.5°

Answer (2)

60. A normal bar magnet is 6 cm long. Its north pole will be away from its mid point at a distance of

- (1) 6 cm
 (2) 3 cm
 (3) Slightly more than 3 cm
 (4) Slightly less than 3 cm

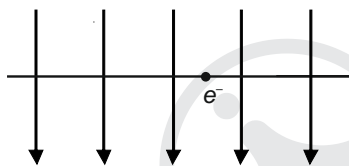
Answer (4)

61. Choose the **correct** statement:

- (1) Lok Sabha and Rajya Sabha have equal power in financial bill.
- (2) Lok Sabha and Rajya Sabha have equal power on ordinary bill.
- (3) Lok Sabha and Rajya Sabha have equal power on constitutional amendment bill.
- (4) Rajya Sabha is house of general people.

Answer (3)

62. A uniform magnetic field pointing top to bottom in a plane of paper. When an electron is allowed to move perpendicular to it, it gets deflected outwards. The electron must be moving along:



- (1) Left to Right
- (2) Right to Left
- (3) It is stationary
- (4) It can't deflect outward

Answer (1)

63. Which has maximum number of atoms?

- (1) 24 g of C(12)
- (2) 56 g of Fe(56)
- (3) 27 g of Al(27)
- (4) 108 g of Ag(108)

Answer (1)

64. A Pulse crop is grown in the time interval between two cereal crops to compensate for the:

- (1) Loss of phosphate
- (2) Loss of sulphur
- (3) Loss of potassium
- (4) Loss of nitrogen

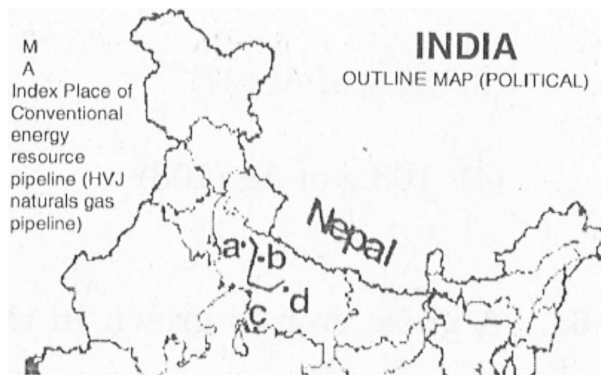
Answer (4)

65. Which Indian soil is formed due to weathering of basic igneous rock?

- (1) Lignite soil
- (2) Alluvial soil
- (3) Desert soil
- (4) Black soil

Answer (4)

66. Observe the map given below. Identify the correct marked points of a pipeline of conventional energy resource with a sequence:



- (1) (a) Aonla (b) Shahjahanpur (c) Auraiya (d) Jagdishpur
- (2) (a) Jagdishpur (b) Aonla (c) Shahjahanpur (d) Auraiya
- (3) (a) Auraiya (b) Shahjahanpur (c) Aonla (d) Jagdishpur
- (4) (a) Shahjahanpur (b) Aonla (c) Auraiya (d) Jagdishpur

Answer (1)

67. When x is divided by $r(x)$ the remainder is $r(x)$. The value of $r(-2) + r(2)$ is :

- (1) 0
- (2) 4
- (3) 6
- (4) 8

Answer (2)

68. A conical paper cup with height 16 cm and base radius 6 cm is filled to the top with water. If $19/27$ of the water is removed, then water level in the cup will drop by (in cm):

- (1) $5\frac{1}{3}$
- (2) $4\frac{2}{3}$
- (3) $4\frac{1}{3}$
- (4) $5\frac{2}{3}$

Answer (1)

69. Each exterior angle of a regular polygon is less than 40° and the sum of its interior angles is less than 1980° . If N is the number of sides of the polygon, then the number of possible values of N is :

- (1) 7
- (2) 5
- (3) 3
- (4) 2

Answer (3)

70. Match the following states with respect to their highest literacy rate :

State	Literacy Rate %
A Kerala	(i) 91.85
B Lakshwadeep	(ii) 91.33
C Mizoram	(iii) 94.00
D Tripura	(iv) 87.75

- (1) A (ii), B (iii), C (i), D (iv)
- (2) A (iii), B (iv), C (i), D (ii)
- (3) A (iii), B (i), C (ii), D (iv)
- (4) A (iv), B (iii), C (ii), D (i)

Answer (3)

71. D and E are the points on sides BC and AC, respectively of $\triangle ABC$. AD and BE intersect each other at T. If $AT/TD = 5$ and $BT/ET = 7$, then $CD : BD =$

- (1) 1 : 7 (2) 5 : 7
 (3) 5 : 17 (4) 3 : 17

Answer (4)

72. The coordinates of vertices A and B of a triangle ABC are (0, 0) and (36, 15), respectively. If the coordinates of C are integers, then what is the minimum area (in sq. units) that $\triangle ABC$ can have ?

- (1) 1 (2) $\frac{3}{2}$
 (3) 2 (4) $\frac{5}{2}$

Answer (2)

73. The seasonal or periodic movement of pastoral farmer with their livestock over relatively short distances seeking fresh pastures between two areas of different climatic conditions is called as :

- (1) Lay farming (2) Crop rotation
 (3) Transhumance (4) Ground farming

Answer (3)

74. On which basis, the sectors can be classified into Public and Private sector ?

- (1) Ownership of enterprises
 (2) The nature of economic activity
 (3) Number of workers employed in the enterprise
 (4) Employment conditions

Answer (1)

75. The nature of a solution obtained by dissolving soluble metal oxide in water is :

- (1) Acidic (2) Neutral
 (3) Basic (4) Amphoteric

Answer (3)

76. Which of the following does not have poison apparatus?

- (1) Scorpion (2) Centipede
 (3) Spider (4) Crab

Answer (4)

77. A cork is immersed in a jar of water & released. How the cork will move if the jar is assumed to be kept in a satellite orbiting earth :

- (1) Sink
 (2) Rise
 (3) Remain where left
 (4) Depends upon the satellite velocity

Answer (3)

78. A person of weight W jumps to ground with his legs fixed & comes to rest with an upward acceleration of 3g. (g = acceleration due to gravity). The force exerted by him during landing is :

- (1) W (2) 2W
 (3) 3W (4) 4W

Answer (4)

79. Tracheal respiration is found in:

- (1) Birds (2) Reptiles
 (3) Mammals (4) Insects

Answer (4)

80. Choose the wrong statements in the following :

- (1) India has unity in diversity.
 (2) India has Parliamentary democracy.
 (3) India is Republic.
 (4) India is not member of commonwealth countries.

Answer (4)

81. ABCD is a cyclic quadrilateral in which $AB = 14.4$ cm, $BC = 12.8$ cm and $CD = 9.6$ cm. If AC bisects BD, then what is the length of AD ?

- (1) 16.4 cm (2) 13.6 cm
 (3) 15.8 cm (4) 19.2 cm

Answer (4)

82. Mark the correct reason for the following statement – Karnataka has developed as an in state for the growth of silk industry :

- (1) Availability of good market, skilled labour and political reasons.
 (2) Availability of good market, good climate and political reasons.
 (3) Good climate, availability of soft water and mulberry plants
 (4) Availability of soft water, good climate and nearness to port

Answer (3)

83. Which British banned sati in India ?

- (1) William Bentinck
 (2) Lord Cornwallis
 (3) Lord Dalhousie
 (4) Lansdown

Answer (1)

84. Which statement out of following is true ? Isobars have :
- (1) Same protons (2) Same electrons
(3) Same neutrons (4) Same nucleons

Answer (4)

85. The %age of irrigated land in India is about ___ as per 2017 datas.
- (1) 45% (2) 65%
(3) 25% (4) 35%

Answer (4)

86. The equations $x^2 + rx + 64 = 0$ and $x^2 - 8x + r = 0$, where $r > 0$, have real roots. Then r satisfies the equation :
- (1) $r^2 - 15r + 8 = 0$ (2) $r^2 - 14r - 30 = 0$
(3) $r^2 - 13r - 48 = 0$ (4) $r^2 - 12r - 56 = 0$

Answer (3)

87. Which of the following statements is incorrect about honey bees?
- (1) Queen bee is largest in size.
(2) Worker bees outnumber the others.
(3) Drone keep the hive clean.
(4) Bees have no sense of direction.

Answer (4)

88. If $x^4 - 83x^2 + 1 = 0$, then a value of $x^3 - x^{-3}$ is :
- (1) 758 (2) 756
(3) 739 (4) 737

Answer (2)

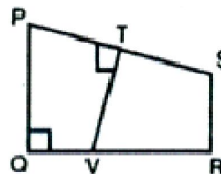
89. A dice is constructed so that when it is thrown each even number is twice as likely to come up as each of the odd number. What is the probability of getting 6, when it is thrown once ?
- (1) $\frac{1}{6}$ (2) $\frac{1}{9}$
(3) $\frac{2}{9}$ (4) $\frac{1}{3}$

Answer (3)

90. A metal sphere is dipped in water. If at 0°C & 4°C the buoyancies in water are β_1 & β_2 respectively, then
- (1) $\beta_1 > \beta_2$
(2) $\beta_2 > \beta_1$
(3) $\beta_1 = \beta_2$
(4) It depends upon radius of sphere

Answer (2)

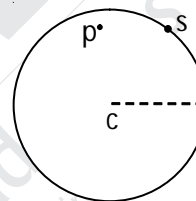
91. In the figure, $PT = TS$, $PQ \perp QR$ and $PQ \parallel SR$. If $PQ = 9$ cm, $QR = 8$ cm, and $SR = 7$ cm, then what is the area (in cm^2) of quad (PTVQ) ?



- (1) 22
(2) 24
(3) 25
(4) 26

Answer (4)

92. The force between a hollow sphere 'S' and a point mass 'P' inside it, as shown in figure is :



- (1) Attractive & Constt.
(2) Repulsive & Constt.
(3) Attractive & depends upon the location of P w.r.t centre
(4) Zero

Answer (4)

93. 'Ratoon Cropping' is gaining popularity among which of the following crop cultivators ?
- (1) Sugarcane (2) Millet
(3) Rice (4) Wheat

Answer (1)

94. If Samir withdraws Rs. 25,000 from his bank account by submitting a self cheque in bank for making payments and he also gave a account Payee cheque of Rs. 52,000 issued by his employer in his favour. Now what happens to the Balance in his account.
- (1) Samir's bank balance will increase by Rs. 77,000
(2) Samir's bank balance will decrease by Rs. 77,000
(3) Samir's bank balance will increase by Rs. 27,000
(4) Samir's bank balance will decrease by Rs. 27,000

Answer (3)

95. The vapour density of an organic compound is 30. This organic compound can be:

- (1) Ethanol (2) Ethanal
(3) Ethanoic acid (4) Methyl ethanoate

Answer (3)

96. Which kind of disease is arthritis?

- (1) Acute disease
(2) Chronic disease
(3) Infectious disease
(4) Communicable disease

Answer (2)

97. Muscles involved in the movement of the arm are:

- (1) Striated (2) Non striated
(3) Cardiac (4) Smooth

Answer (1)

98. Who among the following coined the phrase 'Jet Stream'?

- (1) H. Seilkoph (2) Wiley Post
(3) Herodotus (4) Sir Gilbert Walker

Answer (1)

99. Anything we get from the physical environment to fulfill our needs is called:

- (1) Resource (2) Agriculture
(3) Domestication (4) Horticulture


Answer (1)

100. Which atom has the smallest size?

- (1) B (2) N
(3) Al (4) P

Answer (2)




Aakash
Medical IIT-JEE Foundations
(Divisions of Aakash Educational Services Limited)