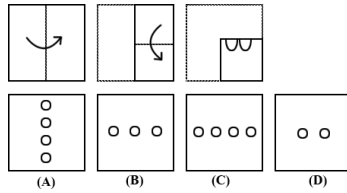


1.) Which of the following options is the most appropriate representation of the figure formed after unfolding the rightmost question figure?

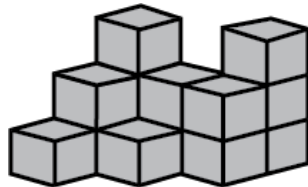


ANS:(C)

2.) In a certain language 154 means “do so fa” 125 means “do re so” 342 means “mi fa re” what is the code for “so” in the language?

(A)1 (B)3 (C)4 (D)5

3.) Find the number of cubes in the given figure



(A)13 (B)14 (C)16 (D)17

4.) Find the missing term in the following series:

5,6,16,57,244,?

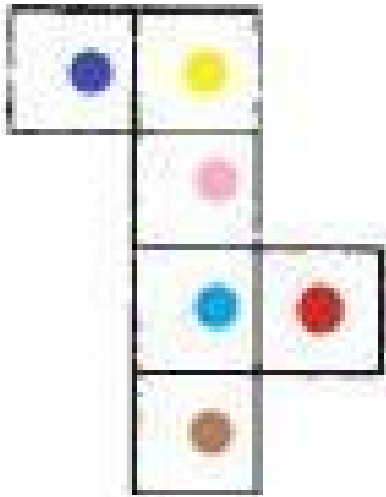
(A)1245 (B)1311 (C)1262 (D)1369

5.) Complete the letter series:

ab_a_baa_b_b

(A)aabb (B)abab (C)abaa (D)baaa

6.) The figure given along side represents the net of a cube, when the net is folded the number that appears opposite to the face with brown dot is:



- (A)Yellow (B)Pink (C)Sky Blue (D)Red

Directions (Q7 – Q10): Based on the information given below, answer the following questions:

A Science exhibition is being organised in Delhi. 5 different states will represent their art in the exhibition during six days of a week, starting Monday and ending on Saturday. One of these days the stalls shall not be put up.

- The five participating states include – Andhra Pradesh, Rajasthan, Punjab, Uttarakhand and Gujarat
- On a given working day only one state is allowed to put up their stall.
- The day off is between the days when Andhra Pradesh and Gujarat exhibit their work
- Punjab will put up their work right before Uttrakhand
- There is a gap of 2 days between Gujarat and Punjab's exhibition. Gujarat organised the exhibition before Punjab
- Rajasthan does not organise the exhibition on Saturday

7.) When does Rajasthan put up their exhibition?

- a.)Monday b.)Saturday c.)Wednesday d.)Tuesday

8.) The exhibition of which state is organised on Thursday?

- A. Rajasthan
- B. Gujarat
- C. Andhra Pradesh
- D. Punjab

9.) Which of the following combinations is correct?

- A. Thursday – Uttarakhand
- B. Wednesday – Gujarat
- C. Friday – Rest Day
- D. Friday – Rajasthan

10.) Which state's exhibition is organised on Saturday?

- A. Punjab
- B. Uttarakhand
- C. Andhra Pradesh
- D. Rajasthan

11.) Fill in the missing numbers: 1,3,7,13,__,31,__

- A] 21, 47
- B] 21, 43
- C] 17, 47
- D] 17, 43

12.) In a certain encryption system, KANGAROO is spelled as MYPECPQM, what will DINOSAUR be called in this system.

- A]EJOPTBVS
- B]CJMPRBTS
- C]EHONTZVQ
- D]FGPMUYWP

13.) Mr. X, goes 20m towards east, then he turns left and goes 20m ahead. He turns left again and moves 10m. He turns right and moves 20m. He turns left and moves 50m. He turns left again and moves 40m ahead. Where is he?

- A] North-East
- B] South-West
- C] West
- D] Back to where is started

14.) Andrew has 50,000 rupees he would like to invest for 5 years. He has 2 options: Either he puts his money in Bank A which gives him 10% simple interest or Bank B, which provides 7.5% interest compounded annually. Which would be a better pick

A] Bank B

B] Both are the same

C] Bank A

D] None

15.) When Andrew was 11 years ago, his dad was 4 times his age. After 11 years from now, his father will be twice his age. What is the ratio of their current age.

A] 3

B] 2.5

C] 2.67

D] More Information needed

16.) If all CAPS are CONES and all CONES are PYRAMIDS. If some HATS are CAPS, can all HATS be classified as PYRAMIDS?

A] Yes

B] Maybe, will need computational help.

C] No

D] None

17.) A cube of side length 25cm is taken. A circle of the same area as the total surface area of the cube was made. What is the surface area of a sphere made of the same radius as the circle?

A] 15000 m²

B] 1500 m²

C] 15 m²

D] 1.5 m²

18.) Find the next term of given sequence ..7, 29, 117, 469, 1877,

(A) 7509 (B) 7501 (C) 7510 (D) 7515

19.) If in any code language NATIONAL is written as MZGRLMZO than how is JAIPUR written in that language.

(A) QZRKFI (B) PZRKFI (C) QZRIFK (D) QARKFI

20.) If $A + D > C + E$, $C + D = 2B$ and $B + E > C + D$, it necessarily follows that

(A) $A + B > 2d$ (B) $B + D > C + E$ (C) $A + D > B + E$ (D) $A + D > B + C$

21.) Akash said to Mohit, "That boy in blue shirt is younger of the two brothers of the daughter of my father's wife". How is the boy in blue shirt related To Aakash".

(A) Father (B) Uncle (C) Brother (D) Nephew

22.) Amit faces towards North. Turning to his right he walks 25 metres. He then turns to his left and walks 30 metres. Next, he moves 25 metres to his right. He then turns to his right again and walks 55 metres. Finally, he turns to the right and moves 40 metres. In which direction is he now from his starting point ?

(A) South-West (B) South (C) North-West (D) South-East

23.) If it was Saturday on 17th November, 1962 what will be the day on 22nd November, 1964 ?

(A) Monday (B) Tuesday (C) Wednesday (D) Sunday

24.) If P is brother of Q, R is father of P, S is brother of T, T is daughter of Q, then uncle of S is

(a) P

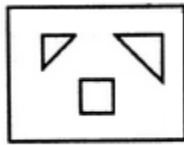
(b) Q

(c) R

(d) S

(e) None of these

- 25 Find out which of the figures (1), (2), (3) and (4) can be formed from the pieces given in figure (X).



(X)



(1)

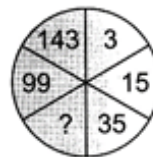
(2)

(3)

(4)

- A 1
- B 2
- C 3
- D 4

Answer: Option A



- 26.) Find the missing number in the figure below.

- A) 63
- B) 56
- C) 60
- D) 65

(a) 140 cm

(c) 130 cm(ans)

(b) 150 cm

(d) 170 cm

28.) In the given question, choose the correct alternate to complete the series:

r _ t _ v _ s _ u _ _ s _ u _

(a) stvtvruv

(b) rytvstuv

(c) survtrsv

(d) surtvrvtv

29.) If in a certain language THRIVE is coded as DUHQGS then what will be the code for STRONG?

a.) FMNSQP

b.) RSQNMF

c.) EDHIMV

d.) FMNQSR

30.) 190, 94, 46, 22, ?, 4.

a.) 12

b.) 14

c.) 10

d.) 8

31.) Ayush, a student of IIT Kanpur starts walking 20metres towards North from his hostel. He then turns left and walk 40metres. He again turn left and walks 20metres. Further , he moves 20metres after turning to the right and reaches Café Coffee Day. Calculate the distance between his hostel to the Café Coffee Day?

a.) 40metres

b.) 50metres

c.) 60metres

d.) 70metres

32.) If in a certain code thief is called constable, constable is called dacoit, dacoit is called judge, judge is called robber, robber is called lawyer and Lawyer is called teacher.

Then who will give the judgement in the court?

- a.) Judge
- b.) Robber
- c.) Dacoit
- d.) Teacher

33.) If $A+B$ means A is the brother of B. $A-B$ means A is the sister of B. $A*B$ means A is the father of B. then which of the following represents that C is the son of M?

- a.) $M-N*C+F$
- b.) $F-C+N*M$
- c.) $N+M-F*C$
- d.) $M*N-C+F$

P,Q,R,S,T,U,V and W are sitting around a circular table, facing the centre. P sits third to the right of W and third to the left of Q. S sits second to the right of T. V sits second to the left of R. T is not the neighbor of Q while U is neither a neighbor of T nor of W.

34.) Who sits second to the left of V?

- a.) R
- b.) P
- c.) U
- d.) T

35.) Who sits between U and P?

- a.) S
- b.) R
- c.) V
- d.) Q

36.) Four of the following are like in a certain way based on their positions in the seating arrangement and so form a group. Which is the one that does not belong to that group?

- a.) W,T
- b.) P,U
- c.) S,Q
- d.) P,Q

37.) If it is Thursday on 10 February 2000 then Which day would come on 25 June 2000?

- a.) Sunday
- b.) Monday
- c.) Thursday
- d.) Saturday

38.) 'Schools closed down' is written as ©#%

'down the line' is written as \$#*

'schools and colleges' is written as &f%

Then what is the code for 'closed'?

- a.) %
- b.) ©
- c.) #
- d.) \$

39.) Find the odd one out

- (a) OKPNJO
- (b) CGIBFH
- (c) VNISMH
- (d) DLXCKW

40.) Statement: All people living in UK are rich. Some are indian.

Conclusions

- I. No Indian is rich.
- II. Some rich Indians have migrated
- III. All rich people are in UK
- IV. Some Indian are rich.
- A. Only IV follow
- B. Only II. Follow
- C. Only III. Follow
- D. None of these

41.) What is the value of x

22:00 , 23:05 , 24:12, 17:x

- (a) 55
- (b) 42
- (c) 01
- (d) 48

42.) 3, 9, 6, 36, 30, X

The value of X is

(a)900 (b)250 (c)270(d)300

43.) Mr X travels at the following speed for the given amount of time

Speed (m/s)	40	60	20	0	50	10	80
Time	40 mins	2 hours	15 mins	25 mins	1 hour	50 mins	1.5 hour

Find the average speed

A] 49.5

B] 50

C] 55.75

D] 49.875

44.) Find the missing number

7	3	10
39	23	?

(A) 51 (B) 55 (C) 62 (D) 40

45.) Anil and Sunil are ranked seventh and eleventh respectively from the top in a class of 31 students. What

will be their respective ranks from the bottom in the class ?

(A) 20th and 20th (B) 24th and 20th (C) 25th and 21st (D) 26th and 22nd

46.) CZX, DYW, EXV, FWU, ?

(a) GWT

(b) GUT

(c) GTV

(d) GVT

(e) GVS

47.) If X is brother of the son of Y's son. How is X related to Y?

- (a) Son
- (b) Brother
- (c) Cousin
- (d) Grandson
- (e) Uncle

(Q.48-49) Read the following information carefully and answer the questions that follows:

There are six cities, A, B, C, D, E & F

A is not a hill station

B & E are not historical places

D is not an industrial city

A & D are not historical cities

A & B are not alike.

48.) Which two cities are industrial centres?

- (a) A and B
- (b) E and F
- (c) C and D
- (d) B and F
- (e) A and D

49.) Which two cities are historical places?

- (a) A and C
- (b) B and F
- (c) C and F
- (d) D and E
- (e) A and D

50.) In a certain code, COLD is written as '5 2 \$ %' and LAME is written as \$ 1 9 # How is COME written in that code?

A) 5\$ 9 2

B) 5 1 9 \$

C) 5 2 \$ 9

D) 5 2 9 #

51.) If in a certain language, CALCUTTA is coded as GEPGYXXE, then which of the following would be coded as FSQFCE?

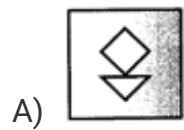
A) BOMYAB

B) BOMBYA

C) BOMBAY

D) BOBAMY

52.) Find the figure which comes next in the series given.



Correct Answer: C

53.) What comes next?

BEH	KNQ	TWZ	?
-----	-----	-----	---

A) IJL

B) CFI

C) BDF

D) ADG

54.) Complete the sequence:

20 40 65 98 142 200 275 ? ?

a.) 370, 488 b.) 371, 488 c.) 350, 437 d.) 371, 437

55.) A student devises a rule to assign value to a sequence of three consecutive alphabets:

ABC=1

BCD=5

CDE=11

DEF=21

What will be the value of JKL?

a.) 110 b.) 106 c.) 111 **d.) 108**

56.) Anil has a standard deck of 52 cards. Anil removes 4 cards at random from the deck face down. Now he draws one card from the modified deck. What is the probability that the removed card is Ace of Spades?

- a.) $1/52$ b.) $1/54$ c.) $1/56$ d.) $1/58$

57.) A pipe can fill an empty tank in 6 hours whereas an outlet can empty the same in 4 hours. If the tank is initially full and both the inlet and outlet are opened simultaneously, find the time taken to empty the tank.

- a.) 10hours b.) 12hours c.) 14hours d.) 11hours

61.) An optimist and a pessimist are examining a sequence of real numbers. The optimist remarks, 'Oh jolly! The sum of any eight consecutive terms is positive!' But the pessimist interjects, 'Not so fast, the sum of any five consecutive terms is negative.' Can they both be right? Atmost how large can this sequence be?

- (a)11 (b)12 (c)9 (d)10

62.) You are given a wooden box with 100 pens (50 blue and 50 black). You pick pens from box one by one without replacements until all the pens are out. A blue followed by a black or a black followed by a blue is "a colour change". Calculate the expected number of colour changes if the pens are being picked randomly from the box

- (a)45 (b)47 (c)50 (d)56

63.) What will be the next term in the series:

10, 40, 110, 238, 442, ?

- (a)652 (b)680 (c)740 (d)812

64.) A stick is broken into 3 parts, by choosing 2 points randomly along its length. With what probability can it form a triangle?

- (a) $1/4$ (b) $1/3$ (c) $1/2$ (d) $\frac{1}{6}$

65.) There is a 6x8 rectangular chocolate bar made up of small 1x1 bits. We want to break it into the 48 bits. We can break one piece of chocolate horizontally or vertically, but cannot break two pieces together! What is the minimum number of breaks required?

(a)38 (b)47 (c)20 (d)39

66.) In a river, the tip of a flower plant is seen 50cm above the surface of water. Forced by the wind, it gradually moved, and just submerged at a distance of 120 cm. The depth of water at the root of the lotus plant will be

- (a) 140 cm
- (c) 119 cm
- (b) 150 cm
- (d) 170 cm

Paragraph for next 2 questions:

6 persons joe, jack, jerry, adam, jessika and jacob are sitting in two rows, three in each row facing each other. Jessika is not at the end of any row. Adam is the second to the left of jacob. Jerry, who is the neighbour of jessika is sitting diagonally opposite to adam. Jack is the neighbour of jacob.

67.) Which of the following are in one of the two rows?

- (a) adam,jack,jacob(ans)
- (b) jacob,jack,jerry
- (c) jerry, jessika,jack
- (d) adam,jacob,jessika

68.) Who is facing jack?

- (a) joe
- (b) jerry
- (c) adam
- (d) jessika

69.) In some years there were exactly four Mondays and exactly four Fridays. On what day of the week did the 17th of Jan fall that year?

- A) Thursday
- B) Wednesday
- C) Tuesday
- D) Saturday

70.) A cat's footprints were drawn on a sheet of paper by a teacher . Then he asked Joe , "how many footprints are there?" "Seven," said Joe. "Correct! So how many footprints you see ?" Teacher asked Charlie after a while . "Five " said Charlie. "Absolutely correct" replied teacher. Now imagine this scenario of those events happening in that class and choose most relevant:

a) only Joe is right

b) only Charlie is right

c) both of them maybe right

d) can't be commented

71.) Which letter will replace the question mark from given alternatives?

D		H
K	M	X
G		P
M		J
R	B	P
E		F
L		C
S	G	L
G		I
N		U
O	?	W
A		B

- (a) H
- (b) L
- (c) P

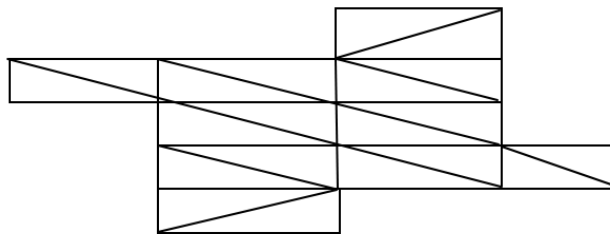
(d) K

72.) In the given question, choose the correct alternate to complete the series:

r _ t _ v _ s _ u _ _ s _ u _

- (a) stvtvruv
- (b) rytvstuv
- (c) survtrsv
- (d) surtvr tv

73.) How many triangles are there in the given figure?



- (a) 26
- (b) 28
- (c) 30
- (d) 32

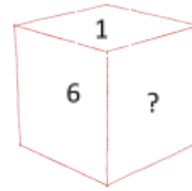
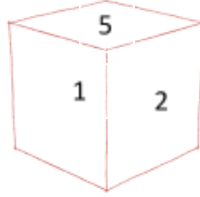
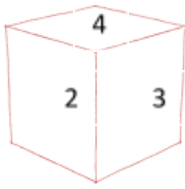
74.) "Who is Ankur's father?"

Statements-

- I. Mayur and Harish are brothers
- II. Harish's wife is the sister of Ankur's wife

- (a) Statement I is alone sufficient to answer the problem
- (b) Statement II is alone sufficient to answer the problem
- (c) Statement I and II both are needed to answer the problem
- (d) Statement I and II are both not sufficient

75.) From the following positions of dice, find which number will come in place of "?":



- (a) 4
- (b) 5
- (c) 3
- (d) 2

76.) If in a certain language SCIENCE is coded as 58 and TECHKRITI is coded as 103, then how will GENIUS be coded in that language?

- (a) 81
- (b) 78
- (c) 75
- (d) 72

77.) Find the MOST SUITABLE Analogy:

Drought : Thirst :: War : ?

- (a) Enmity
- (b) Destruction
- (c) Insecurity
- (d) Cavalry

78.) Find the missing number in the series:

0, 4, 18, (?), 100

- (a) 36
- (b) 38
- (c) 48
- (d) 42

79.) Given the following operation, find out which of the following numbers cannot stand for PANT.

$$\begin{array}{r} P A N \\ - A N T \\ \hline 2 2 2 \end{array}$$

- (a) 9 7 5 3
- (b) 6 4 2 0
- (c) 7 5 3 1
- (d) 8 4 2 0

80.) 100 Students who cleared TOSC Phase I were to attend several Workshops and Exhibition specially arranged for them by Techkriti, IIT Kanpur. They attended a workshop on Robotics in which they created a new language for the Robot to communicate in such a way that no one else is able to understand the message except them. Some codes were:

ARDUINO – YHVEQLK

SENSOR – GULGKH

How will PYTHON be coded in that language?

- (a) IAHRKL
- (b) JAFRKL
- (c) KAHRML
- (d) LAFRKL

81.) If in a certain language THRIVE is coded as DUHQGS then what will be the code for STRONG?

- a.) FMNSQP
- b.) RSQNMF
- c.) EDHIMV
- d.) FMNQSR

82.) 190, 94, 46, 22, ?, 4.

- a.) 12
- b.) 14
- c.) 10
- d.) 8

83.) Ayush, a student of IIT Kanpur starts walking 20metres towards North from his hostel. He then turns left and walk 40metres. He again turn left and walks 20metres. Further , he moves 20metres after turning to the right and reaches Café Coffee Day. Calculate the distance between his hostel to the Café Coffee Day?

- a.) 40metres
- b.) 50metres
- c.) 60metres
- d.) 70metres

84.) If in a certain code thief is called constable, constable is called dacoit, dacoit is called judge, judge is called robber, robber is called lawyer and Lawyer is called teacher.

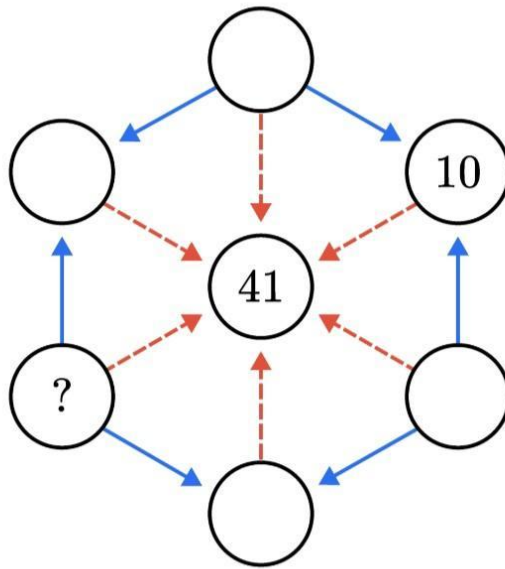
Then who will give the judgement in the court?

- a.) Judge
- b.) Robber
- c.) Dacoit
- d.) Teacher

85.) If $A+B$ means A is the brother of B. $A-B$ means A is the sister of B. $A*B$ means A is the father of B. then which of the following represents that C is the son of M?

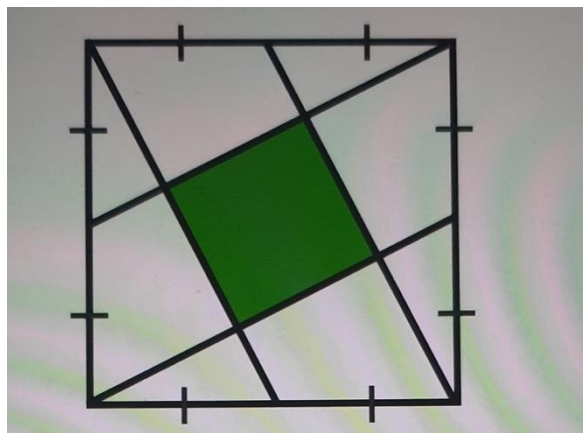
- a.) $M-N*C+F$
- b.) $F-C+N*M$
- c.) $N+M-F*C$
- d.) $M*N-C+F$

86.) In the following puzzle, dashed arrows denote addition, while solid arrows denote multiplication. If all the circles must contain different positive integers, which number will replace the question mark?



- A) 2
- B) 3
- C) 6
- D) 12

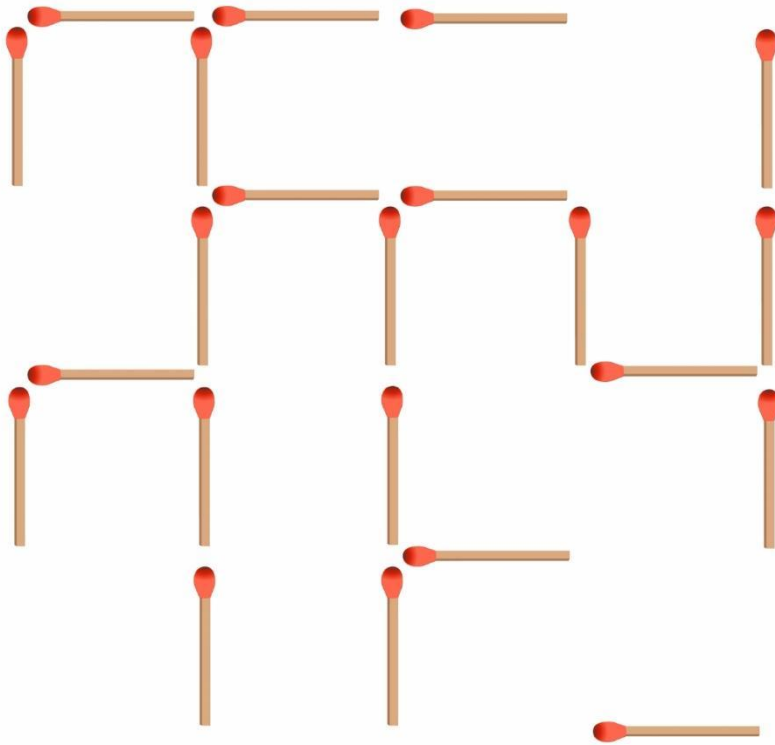
87.) A square has line segments connecting corners to midpoints, as shown. What fraction of the larger square is coloured green?



- A) $\frac{1}{5}$
- B) $\frac{1}{4}$
- C) $\frac{1}{3}$
- D) $\frac{2}{5}$

88.) What is the maximum number of matchsticks that can be added without creating any unit squares?

Rules: matchsticks can be only added vertically or horizontally on the 4×4 grid and they must be aligned in the same row or column as the existing matches.



- A) 6
- B) 7
- C) 8
- D) 9