Reasoning and Logical Deduction

DIRECTIONS (Q. Nos. 31-32) *Find the odd one out.*

31. 3, 8, 18, 46, 100, 210, 432

(a) 5 (b) 18
(c) 46 (d) 100

Sol. *(b)* The pattern is

32. 4, 5, 15, 49, 201, 1011, 6073

(a) 5 (b) 15
(c) 49 (d) 201

Sol. *(a)* The pattern is

DIRECTIONS (Q. Nos. 33-34) *Each of these questions has a statement followed by two Conclusions* I *and* II. *Consider the statement and the following conclusions. Decide which of the conclusions follows from the statement.*

Give answer

(a) if Conclusion I follows

(b) if Conclusion II follows

(c) if neither Conclusion I nor II follows

(d) if both Conclusions I and II follow

33. Statement The best way to escape from a problem is to solve it.

Conclusions

I. Your life will be dull if you don't face a problem.

II. To escape from problems, you should always have some solutions with you.

Sol. *(b)* Only Conclusion II follows. As, solving problem is the best option.

34. Statement India's economy is dependent mainly on forests.

Conclusions

I. Trees should be preserved to improve the Indian economy.

II. India wants only maintenance of forests to improve economic conditions.

Sol. *(a)* Only Conclusion I follows. As, preservation of forest is necessary.

DIRECTIONS (Q. Nos. 35-36) *Each of these questions has an Assertion (A) and Reason (R).*

Give answer

(a) if both A and R are true and R is the correct explanation of A

(b) if both A and R are true but R is not the correct explanation of A

(c) if A is true but R is false

(d) if A is false but R is true

35. Assertion (A) Baking soda creates acidity in the stomach.

Reason (R) Baking soda is alkaline.

Sol. *(d)* Baking soda is alkaline and cannot create acidity in the stomach.

36. Assertion (A) Cut fruits and vegetables should not be kept in open for long.

Reason (R) Their vitamin content is ruined.

Sol. *(b)* Both A and R are true but R is not the correct explanation of A.

37. In a certain code, TOGETHER is written as RQEGRJCT. In same code, PAROLE will be written as

(a) NCPQJG (b) NCQPJG

(c) RCPQJK (d) RCTQNG

Sol. *(a)* As,

T	O	G	E	T	H	E	R
-2	+2	-2	+2	-2	+2	-2	+2
R	Q	E	G	R	J	C	T

Similarly,

P	A	R	O	L	E
-2	+2	-2	+2	-2	+2
N	C	P	Q	J	G

38. If 'cinto baoli tsi nzro' means 'her village is Sarurpur'; 'mhi cinto keep tsi oind' means 'her first love is literature' and 'oind geit tsi cinto pki' means 'literature collection is her hobby', which word would mean 'literature'?

(a) cinto (b) baoli (c) oind (d) geit

Sol. *(c)* cinto baoli tsi nzro → her village is Sarurpur.

mni cinto keep tsi oind → her first love is literature.

oind geit tsi cinto pki → literature collection is her hobby.

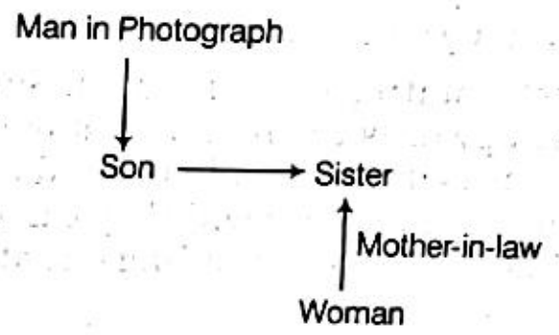
∴ Code of literature is oind.

39. Pointing to a photograph, a woman says, "This man's son's sister is my mother-in-law". How is the woman's husband related to the man in the photograph?

(a) Grandson (b) Son

(c) Son-in-law (d) Nephew

Sol. *(a)*

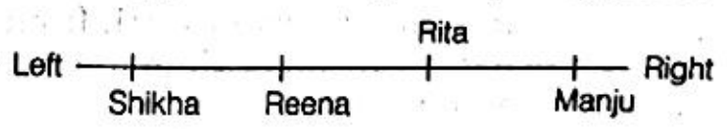


∴ Woman's husband is the grandson of the man in the photograph.

40. Four girls are sitting on a beach to be photographed. Shikha is to the left of Reena. Manju is to the right of Reena. Rita is between Reena and Manju. Who would be second from the left in the photograph?

(a) Reena (b) Shikha (c) Manju (d) Rita

Sol. *(a)*

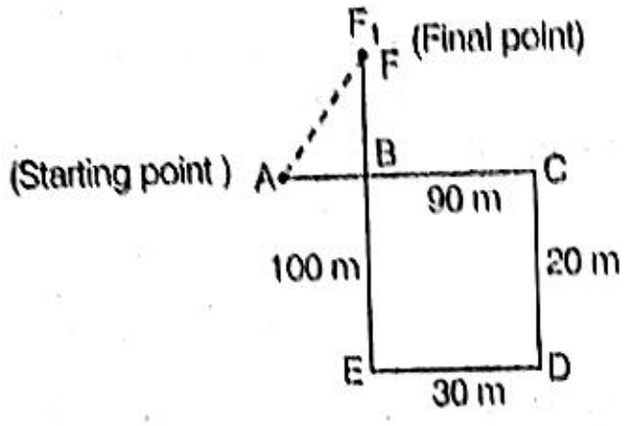


Reena is second from the left in the photograph.

41. A child is looking for his father. He went 90 m in the East before turning to his right. He went 20 m before turning to his right again to look for his father at his uncle's place 30 m from this point. His father was not there. From here, he went 100 m to the North before meeting his father in a street. How far did the son meet his father from the starting point?

(a) 80 m (b) 100 m (c) 140 m (d) 260 m

Sol. *(b)* According to the question,



Here, AB = 60 m, BF = 80 m

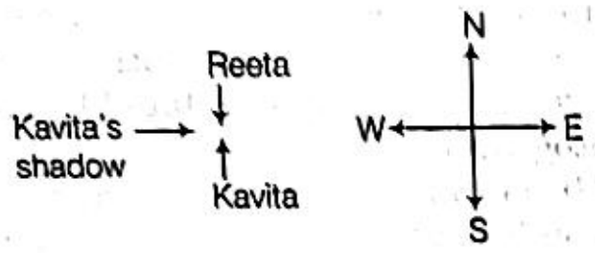
$\therefore$ AF = $\sqrt{60^2 + 80^2} = \sqrt{3600 + 6400} = \sqrt{10000} = 100$ m

42. One morning after sunrise, Reeta and Kavita were talking to each other face to face at Tilak Square. If Kavita's shadow was exactly to the right of Reeta, which direction Kavita was facing?

(a) North (b) South

(c) East (d) None of these

Sol. *(a)* According to the question,



$\therefore$ Kavita was facing North.

43. Nitin was counting down from 32. Sumit was counting upwards the numbers starting from 1 and he was calling out only the odd numbers. What common number will they call out at the same time, if they were calling out at the same speed?

(a) 19

(b) 21

(c) 22

(d) They will not call out the same number

Sol. *(d)* Nitin : 32 31 30 29 28 27 26 25 24 23 22

Sumit : 1 3 5 7 9 11 13 15 17 19 21 ...

Clearly, they will never call out the same number.

44. In a class of 60, where girls are twice that of boys, Kamal ranked seventeenth from the top. If there are 9 girls ahead of Kamal, how many boys are after him in rank?

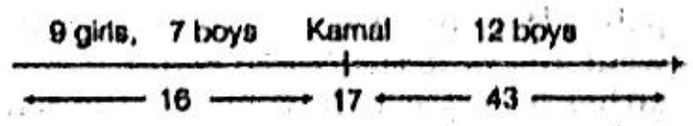
(a) 3 (b) 7

(c) 12 (d) 23

Sol. *(c)* Since, girls are twice that of boys.

$\therefore$ Number of girls = 40

and number of boys = 20



So, there are 12 boys ranked after Kamal.

45. There are twenty people working is an office. The first group of five works between 8 : 00 am and 2 : 00 pm. The second group of ten works between 10 : 00 am and 4 : 00 pm. And the third group of five works between 12 noon and 6 : 00 pm. There are three computers in the office which all the employees frequently use. During which of the following hours the computers are likely to be used most?

(a) 10:00 am - 12 noon

(b) 12 noon - 2:00 pm

(c) 1:00 pm - 3:00 pm

(d) 2:00 pm - 4:00 pm

Sol. *(b)* First group = 8 : 00 am - 2 : 00 pm

Second group = 10 : 00 am - 4 : 00 pm

Third group = 12 : 00 pm - 6 : 00 pm

So, the computers are likely to be used most during 12 noon to 2 : 00 pm

46. At the end of business conference, all the ten people shake hands present with each other once. How many handshakes will there be altogether?

(a) 20 (b) 45 (c) 55 (d) 90

Sol. *(b)* Total number of handshakes = $\frac{n(n-1)}{2}$

$= \frac{10\,(10-1)}{2} = 45$

47. In a caravan, in addition to 50 hens, there are 45 goats and 8 camels with some keepers. If the total number of feet be 224 more than the number of heads in the caravan, the number of keepers is

(a) 5 (b) 8 (c) 10 (d) 15

Sol. *(d)* Let total number of keepers be k.

$\therefore$ Number of heads = $k + 103$

and number of feet = $50 \times 2 + 45 \times 4 + 8 \times 4 + 2 \times k$

$= 312 + 2k$

According to the question,

$$312 + 2k = 224 + (k + 103)$$

$$\Rightarrow \quad 312 + 2k = 327 + k$$

$$\Rightarrow \quad k = 327 - 312 = 15$$

48. In a 500 m race, the ratio of the speeds of two contestants A and B is 3 : 4. If A has a start of 140 m, then A win by.

(a) 60 m (b) 40 m

(c) 20 m (d) 10 m

Sol. *(c)* Let the speed of A and B be $3x$ and $4x$, respectively.

According to the question,

Time taken by A to cover 360 m = $\frac{360}{3x}$

$\Rightarrow$ Distance covered by B in

$$\frac{360}{3x} = \frac{360}{3x} \times 4x = 480 \text{ m}$$

$\therefore$ A win by 20 m.

9. Two dices are tossed. What is the probability that the total score is a prime number?
(a) 1/6 (b) 5/12 (c) 1/2 (d) 7/9

Sol. *(b)* Required probability $= \frac{15}{36} = \frac{5}{12}$

0. How many words can be formed by using all the letters of the word 'DAUGHTER', so that the vowels always come together?
(a) 720 (b) 1440
(c) 2460 (d) 4320

Sol. *(d)* Required number of ways $= 6! \times 3!$
$= 6 \times 5 \times 4 \times 3 \times 2 \times 3 \times 2$
$= 4320$

51. What will be the difference between the sum of the odd digits and the sum of the even digits in the number 857423?
(a) Zero
(b) One
(c) Two
(d) None of the above

Sol. *(b)* Sum of odd digits $= 5 + 7 + 3 = 15$
Sum of even digits $= 8 + 4 + 2 = 14$
$\therefore$ Required difference $= 15 - 14 = 1$

DIRECTIONS (Q. Nos. 52-54) *Study the following information to answer these questions.*

A cube is coloured red on two opposite faces, blue on two adjacent faces and yellow on the two remaining faces. It is then cut into two halves along the plane parallel to the red faces. One piece is then cut into four equal cubes and the other one into 32 equal cubes.

52. How many cubes do not have any coloured face?
(a) 0 (b) 2 (c) 4 (d) 8

Sol. *(c)* Consider a 4 inch cube.
The top half is cut into four equal cubes. All of them have atleast one painted face. The bottom half is cut into 32 equal cubes. The central four cubes in the top layer are paintless.

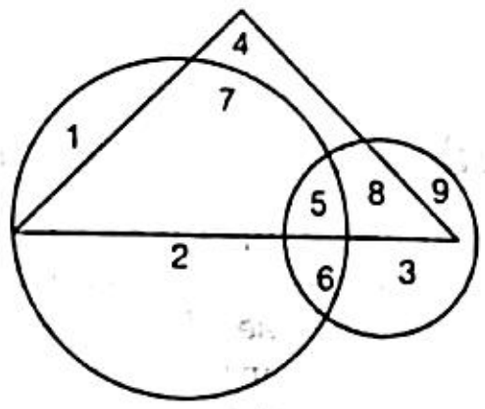
53. How many cubes do not have any red face?
(a) 8 (b) 16
(c) 20 (d) 24

Sol. *(b)* Since, the top and bottom faces are coloured red, so the middle layer of 16 cubes will not have any red coloured face.

54. How many cubes have atleast two coloured faces?
(a) 20 (b) 24
(c) 28 (d) 32

Sol. *(b)* 24 cubes have atleast two coloured faces.

DIRECTIONS (Q. Nos. 55-57) *The following questions are based on the given diagram in which the triangle represents female graduates, small circle represents self-employed females and the big circle represents self-employed females with bank loan facility. Numbers are shown in the different sections of the diagram. On the basis of these numbers, answer the following questions.*



55. How many female graduates are self-employed?
(a) 12 (b) 13 (c) 15 (d) 20

Sol. *(d)* Self-employed female graduates are
$5 + 8 + 7 = 20$

56. How many female graduates are not self-employed?
(a) 4 (b) 10 (c) 12 (d) 15

Sol. *(a)* 4 female graduates are not self-employed.

57. How many non-graduate females are self-employed?
(a) 9 (b) 11
(c) 12 (d) 21

Sol. *(d)* Non-graduate females who are self-employed are
$9 + 3 + 6 + 2 + 1 = 21$

DIRECTIONS (Q. Nos. 58-60) *Read the following information carefully to answer these questions.*

There are six teachers A, B, C, D, E and F in a school. Each of the teachers teaches two subjects, one compulsory subject and the other optional subject. D's optional subject was history while three others have it as compulsory subject. E and F have physics as one of their subjects. F's compulsory subject is mathematics which is an optional subjects of both C and E. History and English are A's subjects but in terms of compulsory and optional subjects, they are just reverse of those D's. Chemistry is an optional subject of only one of them. The only female teacher in the school has English as her compulsory subject.

58. What is C's compulsory subject?
(a) History (b) Physics
(c) English (d) Chemistry

59. Who is the female member in the group?
(a) A (b) B
(c) C (d) D

60. Who among the following has same compulsory and optional subject as those of F's?

(a) D (b) B

(c) A (d) None of these

Sol. (Q. Nos. 58-60) According to the information,

		Compulsory	Optional
(Male) A	→	History	English
(Male) B	→	History	Chemistry
(Male) C	→	History	Mathematics
(Female) D	→	English	History
(Male) E	→	Physics	Mathematics
(Male) F	→	Mathematics	Physics

58. *(a)* C's compulsory subject is History.

59. *(d)* D is the female member in the group.

60. *(d)* None of these