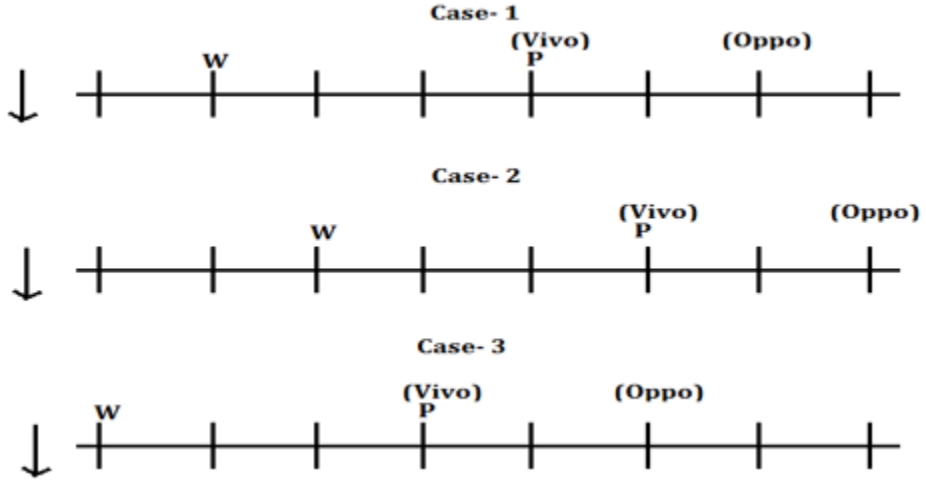
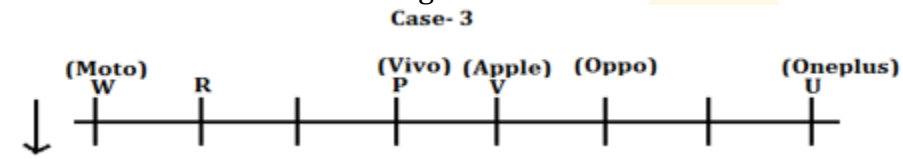
S1. Ans.(b)

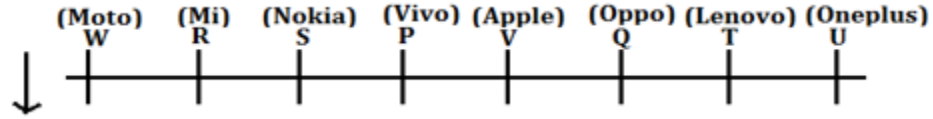
Sol. W sits third to the right of P, who likes Vivo mobile. The one who likes Oppo mobile sits second to the left of P. From these conditions we have three possible cases-



Only one person sits between P and R. R does not like Oppo mobile. R sits third to the right of V, who likes Apple mobile. There are two persons sit between V and U, who likes Oneplus mobile. By these conditions case- 1 and case- 2 are cancelled. There are more than three persons sit between the ones who like Oppo and Moto mobile. So new arrangement will be-

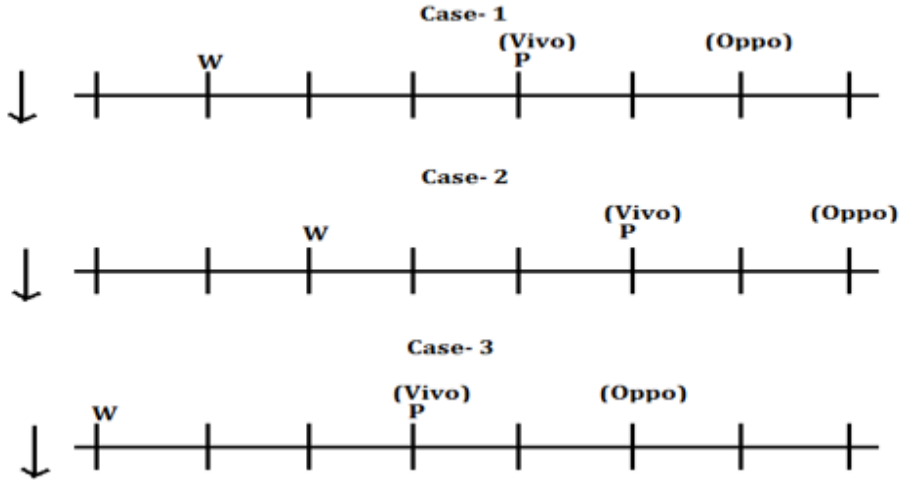


The one who likes Mi mobile sits immediate right of the one who likes Nokia mobile. Q likes neither Nokia nor Lenovo mobile. T does not like Nokia mobile. So Final arrangement will be-

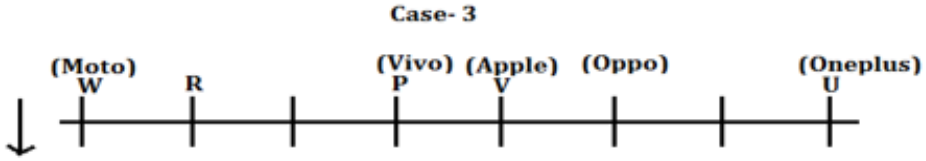


S2. Ans.(b)

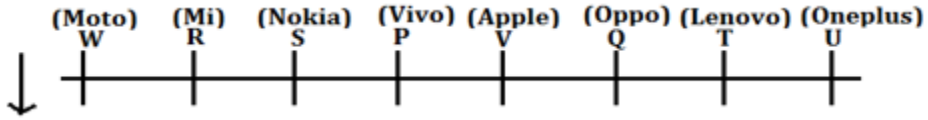
Sol. W sits third to the right of P, who likes Vivo mobile. The one who likes Oppo mobile sits second to the left of P. From these conditions we have three possible cases-



Only one person sits between P and R. R does not like Oppo mobile. R sits third to the right of V, who likes Apple mobile. There are two persons sit between V and U, who likes Oneplus mobile. By these conditions case- 1 and case- 2 are cancelled. There are more than three persons sit between the ones who like Oppo and Moto mobile. So new arrangement will be-

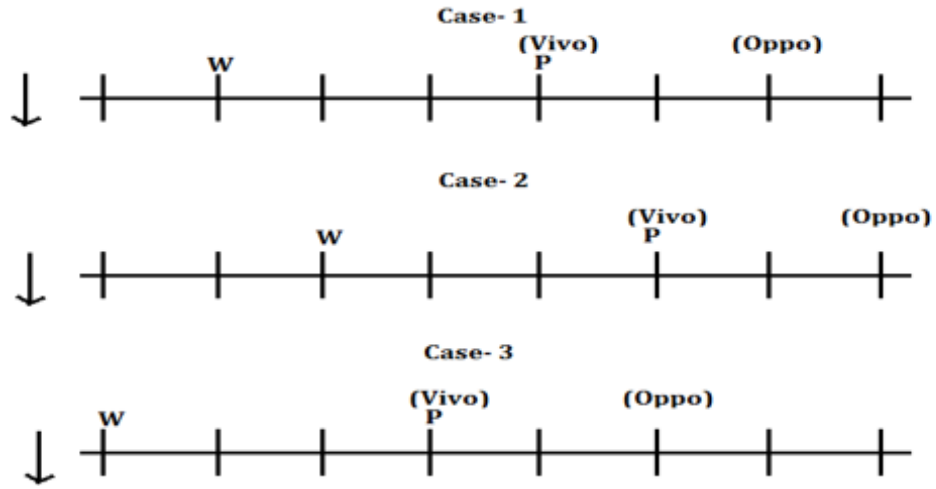


The one who likes Mi mobile sits immediate right of the one who likes Nokia mobile. Q likes neither Nokia nor Lenovo mobile. T does not like Nokia mobile. So Final arrangement will be-

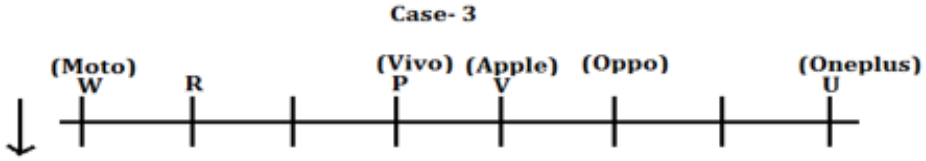


S3. Ans.(c)

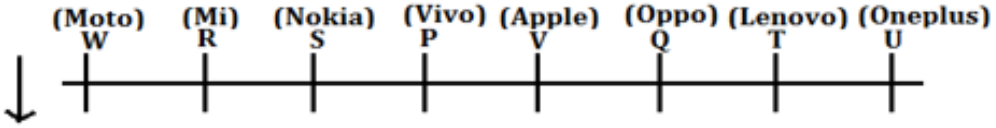
Sol. W sits third to the right of P, who likes Vivo mobile. The one who likes Oppo mobile sits second to the left of P. From these conditions we have three possible cases-



Only one person sits between P and R. R does not like Oppo mobile. R sits third to the right of V, who likes Apple mobile. There are two persons sit between V and U, who likes Oneplus mobile. By these conditions case- 1 and case- 2 are cancelled. There are more than three persons sit between the ones who like Oppo and Moto mobile. So new arrangement will be-

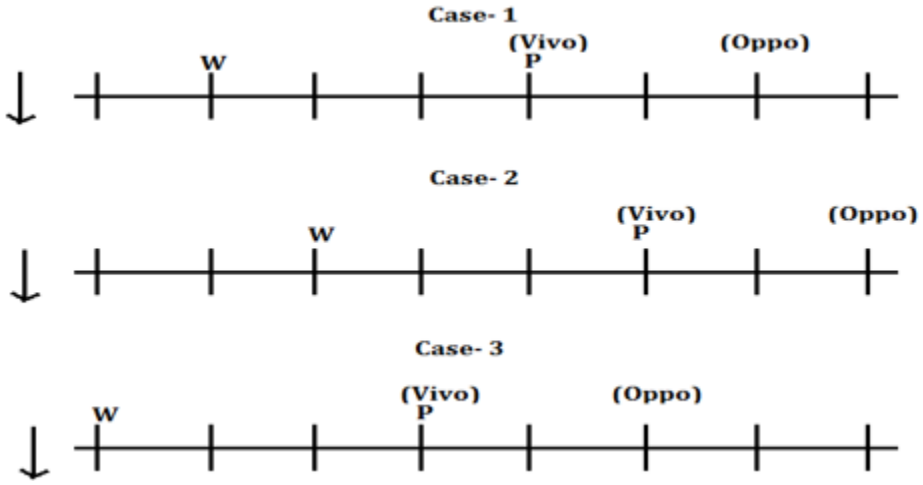


The one who likes Mi mobile sits immediate right of the one who likes Nokia mobile. Q likes neither Nokia nor Lenovo mobile. T does not like Nokia mobile. So Final arrangement will be-

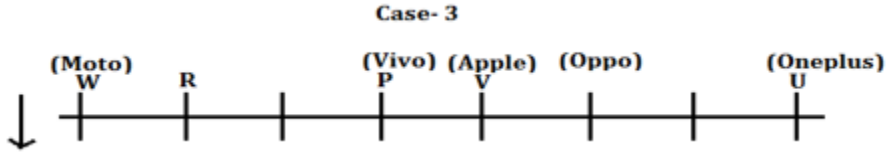


S4. Ans.(d)

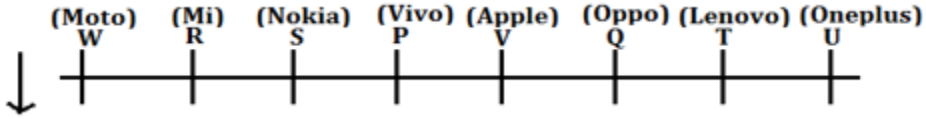
Sol. W sits third to the right of P, who likes Vivo mobile. The one who likes Oppo mobile sits second to the left of P. From these conditions we have three possible cases-



Only one person sits between P and R. R does not like Oppo mobile. R sits third to the right of V, who likes Apple mobile. There are two persons sit between V and U, who likes Oneplus mobile. By these conditions case- 1 and case- 2 are cancelled. There are more than three persons sit between the ones who like Oppo and Moto mobile. So new arrangement will be-

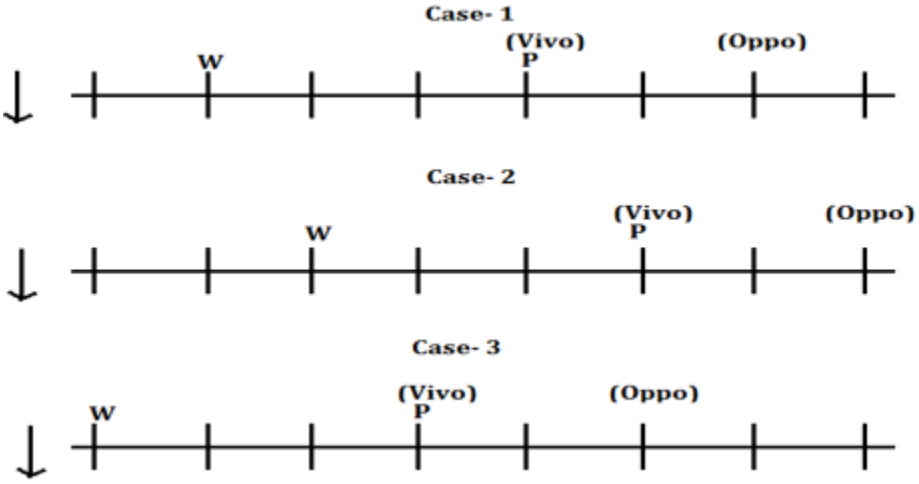


The one who likes Mi mobile sits immediate right of the one who likes Nokia mobile. Q likes neither Nokia nor Lenovo mobile. T does not like Nokia mobile. So Final arrangement will be-

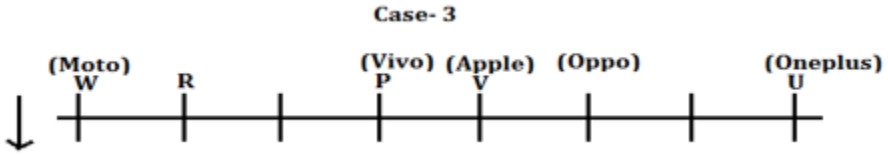


S5. Ans.(c)

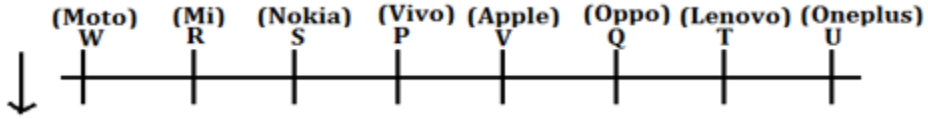
Sol. W sits third to the right of P, who likes Vivo mobile. The one who likes Oppo mobile sits second to the left of P. From these conditions we have three possible cases-



Only one person sits between P and R. R does not like Oppo mobile. R sits third to the right of V, who likes Apple mobile. There are two persons sit between V and U, who likes Oneplus mobile. By these conditions case- 1 and case- 2 are cancelled. There are more than three persons sit between the ones who like Oppo and Moto mobile. So new arrangement will be-



The one who likes Mi mobile sits immediate right of the one who likes Nokia mobile. Q likes neither Nokia nor Lenovo mobile. T does not like Nokia mobile. So Final arrangement will be-



S6. Ans.(a)

Sol. P lives on one of the floor below 4th floor. There are three persons live between P and W. There are two persons live between W and S. From these conditions we have four possible cases-

	Case- 1	Case- 2	Case- 3	Case- 4
Floor	Person	Person	Person	Person
8				S
7	W			
6		W		
5			W	W
4	S			
3	P	S		
2		P	S	
1			P	P

There are three persons live between Q and S. Only one person lives between Q and R. There are three persons live between R and U. U does not live just above or just below the floor of W. So new arrangement will be-

	Case- 1	Case- 2	Case- 3	Case- 4
Floor	Person	Person	Person	Person
8	Q		U	S
7	W	Q		
6	R	W	Q	R
5		R	W	W
4	S		R	Q
3	P	S		
2	U	P	S	U
1		U	P	P

There are two persons live between U and V. By this condition case- 3 and case- 4 are cancelled. T lives on one of the floor below 5th floor. By this condition case- 2 is cancelled. So final arrangement will be-

Floor	Person
8	Q
7	W
6	R
5	V
4	S
3	P
2	U
1	T

S7. Ans.(c)

Sol. P lives on one of the floor below 4th floor. There are three persons live between P and W. There are two persons live between W and S. From these conditions we have four possible cases-

	Case- 1	Case- 2	Case- 3	Case- 4
Floor	Person	Person	Person	Person
8				S
7	W			
6		W		
5			W	W
4	S			
3	P	S		
2		P	S	
1			P	P

There are three persons live between Q and S. Only one person lives between Q and R. There are three persons live between R and U. U does not live just above or just below the floor of W. So new arrangement will be-

	Case- 1	Case- 2	Case- 3	Case- 4
Floor	Person	Person	Person	Person
8	Q		U	S
7	W	Q		
6	R	W	Q	R
5		R	W	W
4	S		R	Q
3	P	S		
2	U	P	S	U
1		U	P	P

There are two persons live between U and V. By this condition case- 3 and case- 4 are cancelled. T lives on one of the floor below 5th floor. By this condition case- 2 is cancelled. So final arrangement will be-

Floor	Person
8	Q
7	W
6	R
5	V
4	S
3	P
2	U
1	T

S8. Ans.(e)

Sol. P lives on one of the floor below 4th floor. There are three persons live between P and W. There are two persons live between W and S. From these conditions we have four possible cases-

	Case- 1	Case- 2	Case- 3	Case- 4
Floor	Person	Person	Person	Person
8				S
7	W			
6		W		
5			W	W
4	S			
3	P	S		
2		P	S	
1			P	P

There are three persons live between Q and S. Only one person lives between Q and R. There are three persons live between R and U. U does not live just above or just below the floor of W. So new arrangement will be-

	Case- 1	Case- 2	Case- 3	Case- 4
Floor	Person	Person	Person	Person
8	Q		U	S
7	W	Q		
6	R	W	Q	R
5		R	W	W
4	S		R	Q
3	P	S		
2	U	P	S	U
1		U	P	P

There are two persons live between U and V. By this condition case- 3 and case- 4 are cancelled. T lives on one of the floor below 5th floor. By this condition case- 2 is cancelled. So final arrangement will be-

Floor	Person
8	Q
7	W
6	R
5	V
4	S
3	P
2	U
1	T

S9. Ans.(b)

Sol. P lives on one of the floor below 4th floor. There are three persons live between P and W. There are two persons live between W and S. From these conditions we have four possible cases-

	Case- 1	Case- 2	Case- 3	Case- 4
Floor	Person	Person	Person	Person
8				S
7	W			
6		W		
5			W	W
4	S			
3	P	S		
2		P	S	
1			P	P

There are three persons live between Q and S. Only one person lives between Q and R. There are three persons live between R and U. U does not live just above or just below the floor of W. So new arrangement will be-

	Case- 1	Case- 2	Case- 3	Case- 4
Floor	Person	Person	Person	Person
8	Q		U	S
7	W	Q		
6	R	W	Q	R
5		R	W	W
4	S		R	Q
3	P	S		
2	U	P	S	U
1		U	P	P

There are two persons live between U and V. By this condition case- 3 and case- 4 are cancelled. T lives on one of the floor below 5th floor. By this condition case- 2 is cancelled. So final arrangement will be-

Floor	Person
8	Q
7	W
6	R
5	V
4	S
3	P
2	U
1	T

S10. Ans.(e)

Sol. P lives on one of the floor below 4th floor. There are three persons live between P and W. There are two persons live between W and S. From these conditions we have four possible cases-

	Case- 1	Case- 2	Case- 3	Case- 4
Floor	Person	Person	Person	Person
8				S
7	W			
6		W		
5			W	W
4	S			
3	P	S		
2		P	S	
1			P	P

There are three persons live between Q and S. Only one person lives between Q and R. There are three persons live between R and U. U does not live just above or just below the floor of W. So new arrangement will be-

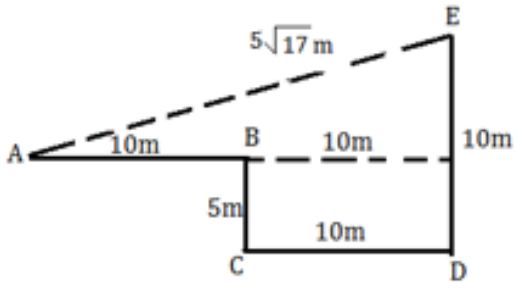
	Case- 1	Case- 2	Case- 3	Case- 4
Floor	Person	Person	Person	Person
8	Q		U	S
7	W	Q		
6	R	W	Q	R
5		R	W	W
4	S		R	Q
3	P	S		
2	U	P	S	U
1		U	P	P

There are two persons live between U and V. By this condition case-3 and case- 4 are cancelled. T lives on one of the floor below 5th floor. By this condition case- 2 is cancelled. So final arrangement will be-

Floor	Person
8	Q
7	W
6	R
5	V
4	S
3	P
2	U
1	T

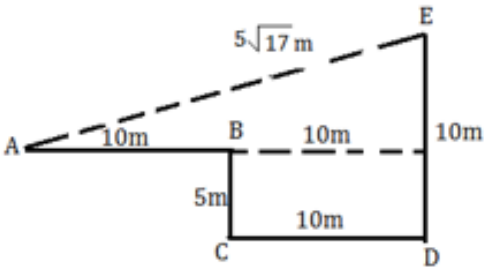
S11. Ans.(b)

Sol.



S12. Ans.(c)

Sol.



S13. Ans.(d)

Sol. G purchases on Flipkart and purchases neither Watch nor Cap. L purchases Book. Neither H nor K purchases Jeans. N purchases Mobile. K purchases neither Watch nor Shirt. K does not purchase on Snapdeal. From these conditions we have the following arrangement –

Friend	Items	App
G	~~Watch/Cap~~	Flipkart
H	~~Jeans~~	
J		
K	~~Jeans/Watch/Shirt~~	~~Snapdeal~~
L	Book	
M		
N	Mobile	

J purchases on Amazon with only one friend, who purchases Jeans. So M purchases Jeans on Amazon. The one who purchases on Flipkart purchases Shirt but he is not G. So H purchases Shirt on Flipkart. There is only one possibility left that K purchases on Flipkart. J purchases watch and K purchase Cap. So final arrangement will be-

Friend	Items	App
G	Bag	Flipkart
H	Shirt	Flipkart
J	Watch	Amazon
K	Cap	Flipkart
L	Book	Snapdeal
M	Jeans	Amazon
N	Mobile	Snapdeal

S14. Ans.(a)

Sol. G purchases on Flipkart and purchases neither Watch nor Cap. L purchases Book. Neither H nor K purchases Jeans. N purchases Mobile. K purchases neither Watch nor Shirt. K does not purchase on Snapdeal. From these conditions we have the following arrangement –

Friend	Items	App
G	~~Watch/Cap~~	Flipkart
H	~~Jeans~~	
J		
K	~~Jeans/Watch/Shirt~~	~~Snapdeal~~
L	Book	
M		
N	Mobile	

J purchases on Amazon with only one friend, who purchases Jeans. So M purchases Jeans on Amazon. The one who purchases on Flipkart purchases Shirt but he is not G. So H purchases Shirt on Flipkart. There is only one possibility left that K purchases on Flipkart. J purchases watch and K purchase Cap. So final arrangement will be-

Friend	Items	App
G	Bag	Flipkart
H	Shirt	Flipkart
J	Watch	Amazon
K	Cap	Flipkart
L	Book	Snapdeal
M	Jeans	Amazon
N	Mobile	Snapdeal

S15. Ans.(b)

Sol. G purchases on Flipkart and purchases neither Watch nor Cap. L purchases Book. Neither H nor K purchases Jeans. N purchases Mobile. K purchases neither Watch nor Shirt. K does not purchase on Snapdeal. From these conditions we have the following arrangement –

Friend	Items	App
G	~~Watch/Cap~~	Flipkart
H	~~Jeans~~	
J		
K	~~Jeans/Watch/Shirt~~	~~Snapdeal~~
L	Book	
M		
N	Mobile	

J purchases on Amazon with only one friend, who purchases Jeans. So M purchases Jeans on Amazon. The one who purchases on Flipkart purchases Shirt but he is not G. So H purchases Shirt on Flipkart. There is only one possibility left that K purchases on Flipkart. J purchases watch and K purchase Cap. So final arrangement will be-

Friend	Items	App
G	Bag	Flipkart
H	Shirt	Flipkart
J	Watch	Amazon
K	Cap	Flipkart
L	Book	Snapdeal
M	Jeans	Amazon
N	Mobile	Snapdeal

S16. Ans.(c)

Sol. G purchases on Flipkart and purchases neither Watch nor Cap. L purchases Book. Neither H nor K purchases Jeans. N purchases Mobile. K purchases neither Watch nor Shirt. K does not purchase on Snapdeal. From these conditions we have the following arrangement –

Friend	Items	App
G	~~Watch/Cap~~	Flipkart
H	~~Jeans~~	
J		
K	~~Jeans/Watch/Shirt~~	~~Snapdeal~~
L	Book	
M		
N	Mobile	

J purchases on Amazon with only one friend, who purchases Jeans. So M purchases Jeans on Amazon. The one who purchases on Flipkart purchases Shirt but he is not G. So H purchases Shirt on Flipkart. There is only one possibility left that K purchases on Flipkart. J purchases watch and K purchase Cap. So final arrangement will be-

Friend	Items	App
G	Bag	Flipkart
H	Shirt	Flipkart
J	Watch	Amazon
K	Cap	Flipkart
L	Book	Snapdeal
M	Jeans	Amazon
N	Mobile	Snapdeal

S17. Ans.(d)

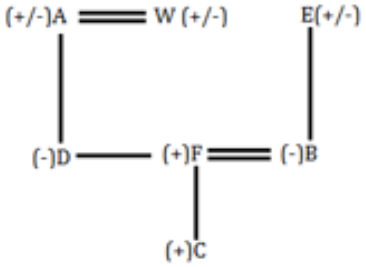
Sol. G purchases on Flipkart and purchases neither Watch nor Cap. L purchases Book. Neither H nor K purchases Jeans. N purchases Mobile. K purchases neither Watch nor Shirt. K does not purchase on Snapdeal. From these conditions we have the following arrangement –

Friend	Items	App
G	~~Watch/Cap~~	Flipkart
H	~~Jeans~~	
J		
K	~~Jeans/Watch/Shirt~~	~~Snapdeal~~
L	Book	
M		
N	Mobile	

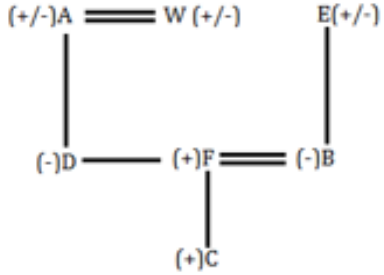
J purchases on Amazon with only one friend, who purchases Jeans. So M purchases Jeans on Amazon. The one who purchases on Flipkart purchases Shirt but he is not G. So H purchases Shirt on Flipkart. There is only one possibility left that K purchases on Flipkart. J purchases watch and K purchase Cap. So final arrangement will be-

Friend	Items	App
G	Bag	Flipkart
H	Shirt	Flipkart
J	Watch	Amazon
K	Cap	Flipkart
L	Book	Snapdeal
M	Jeans	Amazon
N	Mobile	Snapdeal

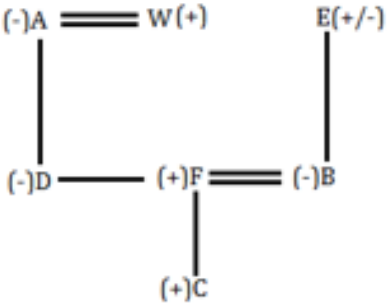
S18. Ans.(d)
Sol.



S19. Ans.(e)
Sol.

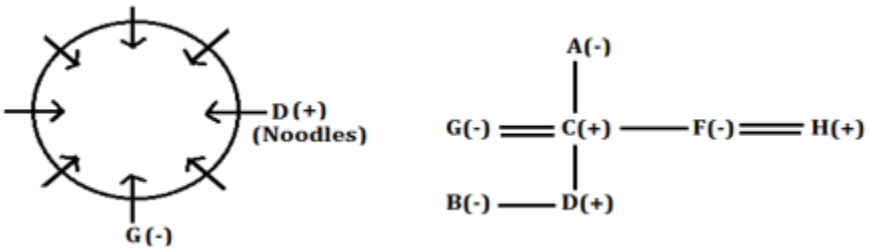


S20. Ans.(b)
Sol.

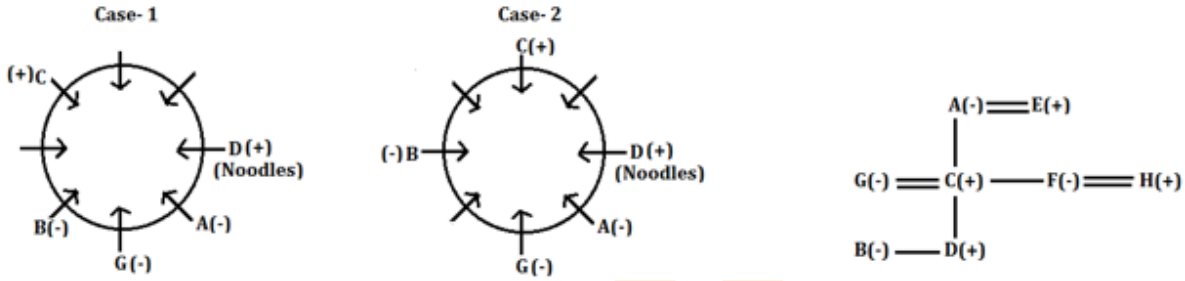


S21. Ans.(b)

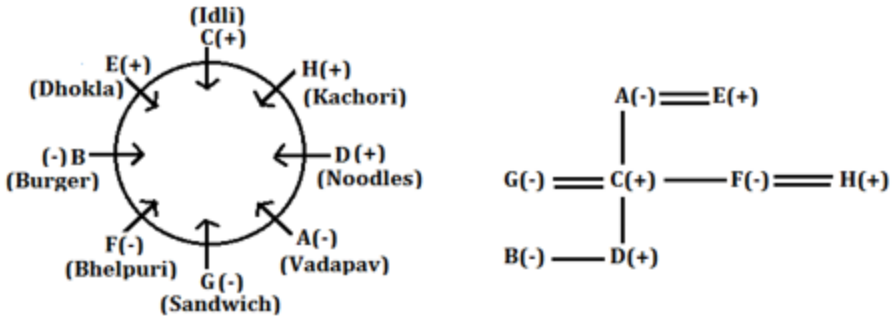
Sol. H orders Kachori and married to the one who orders Bhelpuri. A is mother of C and F, who is a female and orders Bhelpuri. So H is a male and married to F. D orders Noodles and sits second to the right of his mother. D is son of C. G is mother of B. So only one possibility left that G is wife of C. From these conditions we have the following arrangement-



No female orders Dhokla. E orders Dhokla so E is a male and married to A. All males sit adjacent to each other. C sits second to the left of his daughter. A and B does sit adjacent to each other. By these conditions we have two cases. So new arrangement will be-

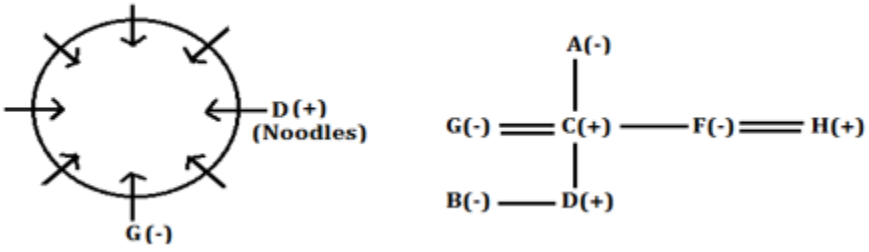


The one who orders Idli is married to the one who orders Sandwich. Neither A nor B orders Sandwich. E sits between the ones who order Burger and Idli. So C orders Idli and G orders Sandwich. By these conditions case- 1 is cancelled. E sits between C and B, who orders Burger. So final arrangement will be-

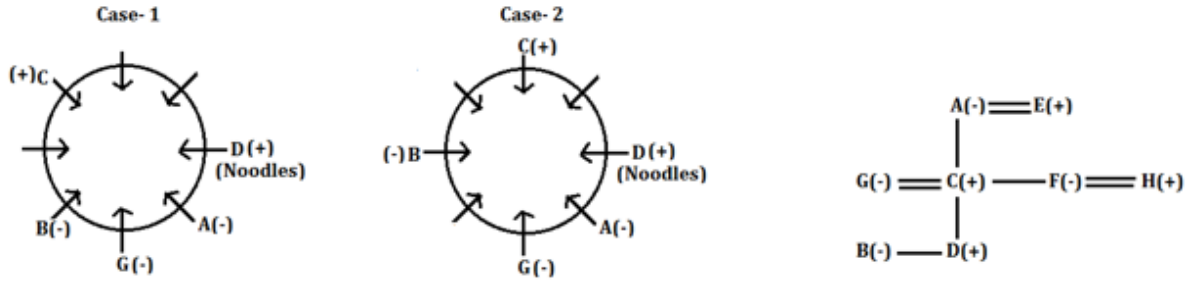


S22. Ans.(c)

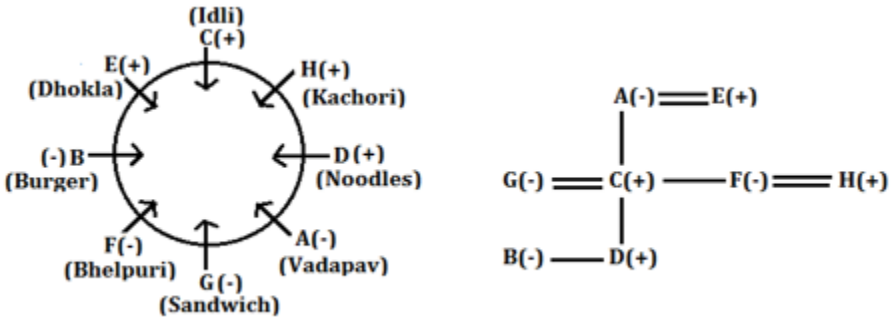
Sol. H orders Kachori and married to the one who orders Bhelpuri. A is mother of C and F, who is a female and orders Bhelpuri. So H is a male and married to F. D orders Noodles and sits second to the right of his mother. D is son of C. G is mother of B. So only one possibility left that G is wife of C. From these conditions we have the following arrangement-



No female orders Dhokla. E orders Dhokla so E is a male and married to A. All males sit adjacent to each other. C sits second to the left of his daughter. A and B does sit adjacent to each other. By these conditions we have two cases. So new arrangement will be-

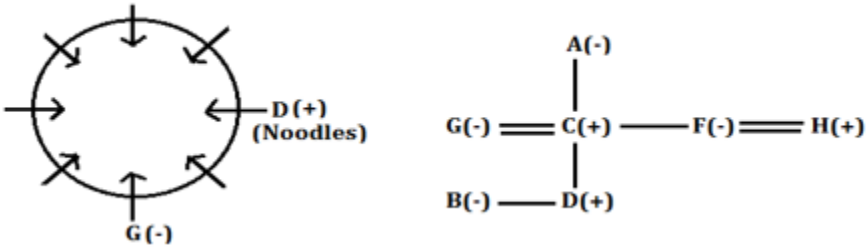


The one who orders Idli is married to the one who orders Sandwich. Neither A nor B orders Sandwich. E sits between the ones who order Burger and Idli. So C orders Idli and G orders Sandwich. By these conditions case- 1 is cancelled. E sits between C and B, who orders Burger. So final arrangement will be-

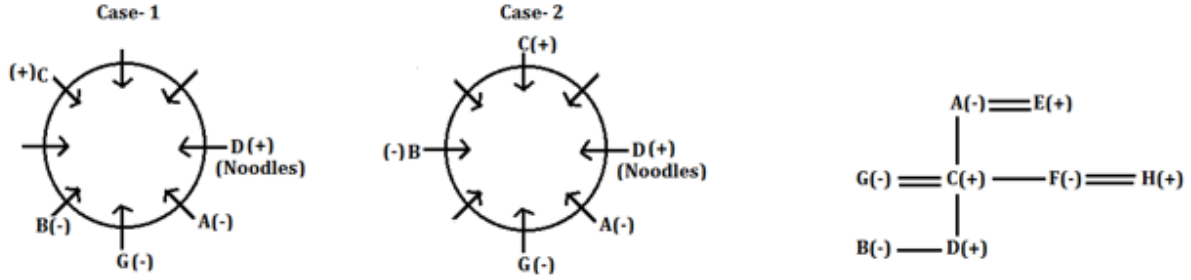


S23. Ans.(a)

Sol. H orders Kachori and married to the one who orders Bhelpuri. A is mother of C and F, who is a female and orders Bhelpuri. So H is a male and married to F. D orders Noodles and sits second to the right of his mother. D is son of C. G is mother of B. So only one possibility left that G is wife of C. From these conditions we have the following arrangement-



No female orders Dhokla. E orders Dhokla so E is a male and married to A. All males sit adjacent to each other. C sits second to the left of his daughter. A and B does sit adjacent to each other. By these conditions we have two cases. So new arrangement will be-



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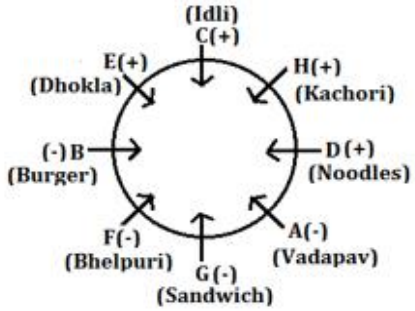
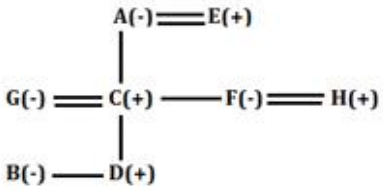
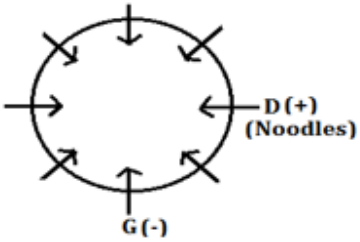
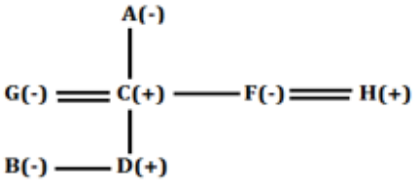




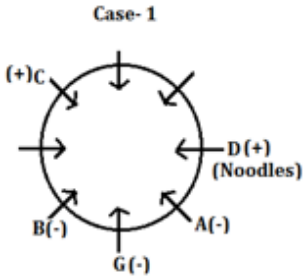
S24. Ans.(e)

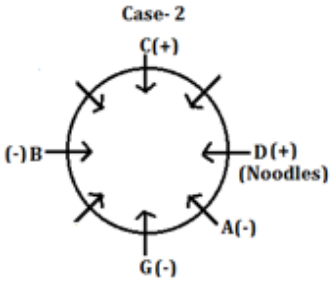
Sol. H orders Kachori and married to the one who orders Bhelpuri. A is mother of C and F, who is a female and orders Bhelpuri. So H is a male and married to F. D orders Noodles and sits second to the right of his mother. D is son of C. G is mother of B. So only one possibility left that G is wife of C. From these conditions we have the following arrangement-

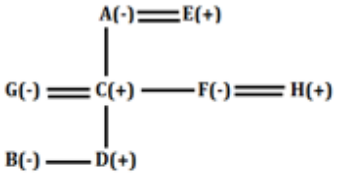




No female orders Dhokla. E orders Dhokla so E is a male and married to A. All males sit adjacent to each other. C sits second to the left of his daughter. A and B does sit adjacent to each other. By these conditions we have two cases. So new arrangement will be-







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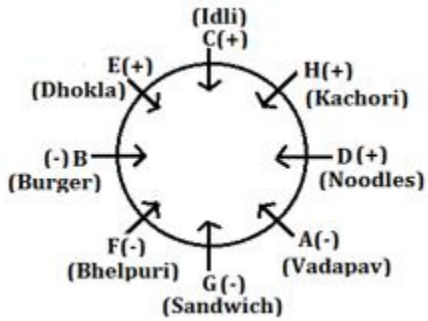
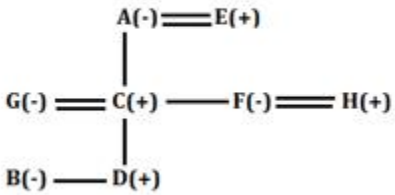
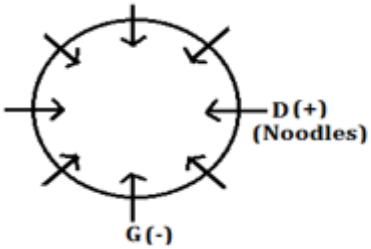
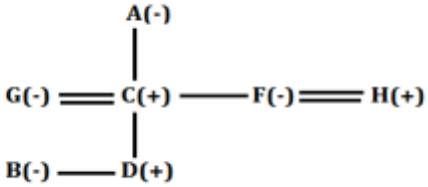




S25. Ans.(d)

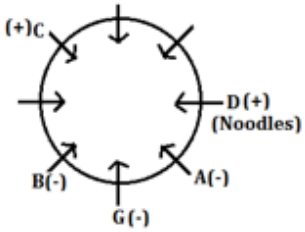
Sol. H orders Kachori and married to the one who orders Bhelpuri. A is mother of C and F, who is a female and orders Bhelpuri. So H is a male and married to F. D orders Noodles and sits second to the right of his mother. D is son of C. G is mother of B. So only one possibility left that G is wife of C. From these conditions we have the following arrangement-



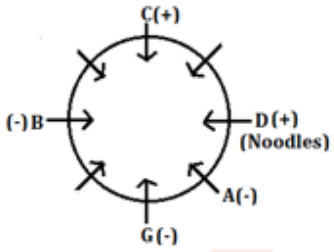


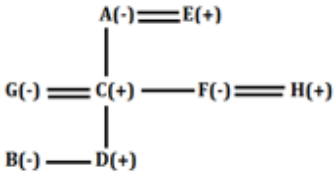
No female orders Dhokla. E orders Dhokla so E is a male and married to A. All males sit adjacent to each other. C sits second to the left of his daughter. A and B does sit adjacent to each other. By these conditions we have two cases. So new arrangement will be-

Case- 1



Case- 2





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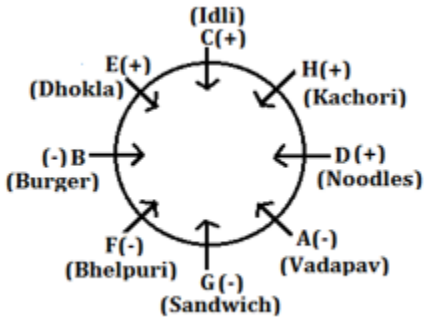

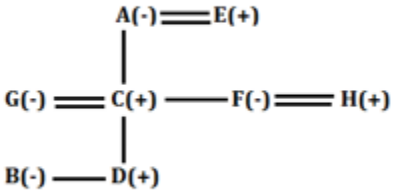

S26. Ans.(a)

S27. Ans.(c)

S28. Ans.(c)

S29. Ans.(c)

S30. Ans.(b)

Sol. Backup is the copy of the original data.

S31. Ans.(b)

Sol. Distance travel by car P = 1500 + 3000 = 4500 km

Total Time taken = $\frac{4500}{40}$ = 112.5 hour

Time taken by car R from Delhi to City A = $\frac{1000}{60} = \frac{50}{3}$ hours

Time taken from city A to city B = $112.5 - \frac{50}{3}$

$= \frac{287.5}{3}$

Distance from between City A to city B

$= \frac{287.5}{3} \times 60 = 5750$ km

S32. Ans.(a)

Sol.

City A

1000 ↑

Delhi $\xrightarrow[1500]{}$ City E

Distance between city A and city E

$= \sqrt{1000^2 + 1500^2} = \sqrt{1000000 + 2250000}$

$= \sqrt{3250000} = 500\sqrt{13}km$

Approximate time taken by car 'T'

$= \frac{500\sqrt{13}}{75} \approx 24$ hours

S33. Ans.(c)

Sol. Let speeds of car Q and car S be x and y respectively.

ATQ—

$\Rightarrow \frac{3000}{x} = \frac{2000}{y}$

$\Rightarrow \frac{x}{y} = \frac{3}{2}$

Let speed of car Q and car S be 3a and 2a respectively

Distance between city B and city D = 1500 km

Time taken to cross each other = $\frac{1500}{5a} = \frac{300}{a}$

Time taken by car Q to reach city B from Delhi = $\frac{3000}{3a} = \frac{1000}{a}$

Required% = $\frac{300 \times 100}{1000}$ = 30%

S34. Ans.(d)

Sol.

$\frac{1500 \times 3}{5} = 900$ km

Time taken by car R to cover this distance = $\frac{900}{60}$ = 15 hour

Let initial speed of car S = x km/hr

So, ATQ

$6x + 15(2x) = 900$

$6x + 30x = 900$

$36x = 900$

x = 25 km/hr

S35. Ans.(e)

Sol.

Distance between Delhi and city A = 1000 km

Distance covered by Car Q before first meeting = 1200 km

Distance covered by Car P before first meeting = 800 km

Speed of car P = 40 km/hr

$\Rightarrow Time\ for\ first\ meeting = \frac{800}{40} = 20hr$

Speed of car Q = $\frac{1200}{20} = 60km/hr$

When car P reaches city 'A' distance covered by car 'Q' = $\frac{200}{40} \times 60 = 300km$

Time taken by car 'Q' to reach Delhi = $\frac{500}{60} = \frac{25}{3}hr$

Distance covered by car 'P' in $\frac{25}{3}hour = \frac{25}{3} \times 40 = \frac{1000}{3}km$

Distance between car 'Q' and car 'P' = $1000 - \frac{1000}{3} = \frac{2000}{3}$

Time to meet = $\frac{\frac{2000}{3}}{60+40} = \frac{20}{3}hour$

$Total\ time = \frac{200}{40} + \frac{25}{3} + \frac{20}{3} = 20\ hours$

S36. Ans.(a)

Sol.

Let sum invested in B with C.I. = x

Acc. to question $= 1.44x = x\left(1 + \frac{r}{100}\right)^2$

r = rate of interest of C.I. in B = 20%

Rate of interest of S.I. in A = 10%

$$\text{Interest} = \frac{8000 \times 2 \times 10}{100} + 8000\left[\left(1 + \frac{20}{100}\right)^2 - 1\right] = 5120$$

S37. Ans.(b)

Sol.

$$\text{Interest accrued} = \frac{10000 \times 6 \times 15}{100} = 9000$$

First half 4500 on scheme B for 4 years with S.I.

$$\text{Interest} = \frac{4500 \times 12 \times 4}{100} = 2160$$

Now ratio of interest received = 3 : 2

Interest received in scheme C

$= \frac{2160}{3} \times 2 = 1440$

$$\text{Rate of interest in Scheme C} = \frac{1440 \times 100}{4500 \times 4} = 8\%$$

S38. Ans.(a)

Sol. Let sum invested in each scheme = 100x

In scheme E

$$\text{Amount after 2 year at S. I} = 100x + \frac{100x \times 2 \times 10}{100} = 120x$$

$$\text{Then in C. I.} = 120x\left(1 + \frac{20}{100}\right)^2 = \frac{864}{5}x$$

In scheme D

$$\text{Amount after 4 years at S. I.} = \frac{100x \times 4 \times 15}{100} + 100x = 160x$$

$$\text{Required ratio} = \frac{864x}{5} : 160x = 27 : 25$$

S39. Ans.(c)

Sol. Let amount he invested in scheme A with x

Now

$$778688 = x\left(1 - \frac{8}{100}\right)^3$$

$x = 10{,}00{,}000$

Now this amount is the interest received from scheme D and E with S.I.

Let amount invested in both scheme = y

Total interest earn in 4 years from both scheme

$$10{,}00{,}000 = \frac{y \times 15 \times 4}{100} + \frac{y \times 10 \times 4}{100}$$

y = 10,00,000

sum he invested = 20,00,000

S40. Ans.(a)

Sol. Let Initial sum = 100x

$$\text{After 7 year Amount} = 100x + \frac{194}{100} \times 100x = 294x$$

In scheme C with C.I.

Rate of interest = 40%

Time = 2 year

Now,

$$294x = y\left(1 + \frac{40}{100}\right)^2$$

y = sum invested in scheme C with C.I.

y = 150x

amount get from scheme (with S.I.)

Interest = 180x – 100x = 50x

$$50x = \frac{100x \times R \times 15}{100}$$

R = 10%

R = rate of interest for scheme C in S.I.

S41. Ans.(a)
Sol.

Total number of boys in Cricket, Football and Hockey in 2018

$= \left(20000 \times \frac{20}{100} \times \frac{3}{10}\right) + \left(20000 \times \frac{30}{100} \times \frac{7}{10}\right) + \left(20000 \times \frac{10}{100} \times \frac{3}{5}\right)$

$= 1200 + 4200 + 1200$

$= 6600$

$\therefore$ Required percentage $= \frac{6600}{20000} \times 100$

$= 33\%$

S42. Ans.(d)
Sol.

Number of girls in all the games together in 2018

$= \left(20000 \times \frac{20}{100} \times \frac{7}{10}\right) + \left(20000 \times \frac{30}{100} \times \frac{3}{10}\right) + \left(20000 \times \frac{15}{100} \times \frac{4}{5}\right)$

$= 2800 + 1800 + 2400$

$= 7000$

Number of boys in Volleyball and Badminton together in 2018

$= \left(20000 \times \frac{25}{100} \times \frac{2}{5}\right) + \left(20000 \times \frac{15}{100} \times \frac{1}{5}\right)$

$= 2000 + 600$

$= 2600$

Required ratio $= \frac{7000}{2600}$

$= 35 : 13$

S43. Ans.(a)
Sol.

Number of boys in Football in 2018 $= \left(20000 \times \frac{30}{100} \times \frac{7}{10}\right)$

$= 4200$

Number of boys in Football in 2019 $= 4200 \times \frac{150}{100}$

$= 6300$

No. of boys in Cricket in 2018 $= \left(20000 \times \frac{20}{100} \times \frac{3}{10}\right)$

$= 1200$

No. of boys in Cricket in 2019 $= 1200 \times \frac{120}{100}$

$= 1440$

$\therefore$ No. of girls in Football in 2019 $= 6300 \times \frac{1}{2}$

$= 3150$

No. of girls in Cricket in 2019 $= 1440 \times \frac{7}{5}$

$= 2016$

Required sum = 2016 + 3150

$= 5166$

S44. Ans.(a)

Sol.

No. of boys in 2018 in Hockey = $\left(20000 \times \frac{10}{100} \times \frac{3}{5}\right)$

= 1200

No. of boys in 2019 in Hockey = $1200 \times \frac{120}{100}$

= 1440

Therefore, No. of girls in 2019 in Hockey = 5000 − 1440

= 3560

Now, $\frac{x}{89} = \frac{1440}{3560}$

$x = \frac{1440 \times 89}{3560}$

So, x = 36

S45. Ans.(b)

Sol.

No. of girls in Hockey in 2018 = $\left(20000 \times \frac{10}{100} \times \frac{2}{5}\right)$

= 800

No. of girls in Hockey in 2019 = $800 \times \frac{1335}{400}$

= 2670

No. of boys in Hockey in 2019 = 4000 – 2670

= 1330

S46. Ans.(a)

Sol.

Let units of LUX sold in 2017 be 2x

So, units of Dove sold in 2017 = $\frac{250}{100} \times 2x$

= 5x

Let units of Pears sold in 2017 & units of LUX sold in 2018 be 3y & 4y respectively.

Total units of Pears sold in all the given 3 years = 550 × 3 = 1650

Now, total units sold of all 3 types of soaps in 2017 = $(2x + 5x + 3y)$

= 7x + 3y

So, total units sold of all 3 types of soaps in 2019 = $(7x + 3y) \times \frac{100}{57.5}$

= $(7x + 3y) \times \frac{40}{23}$

Now, units of Pears sold in 2018 = 1100 – 4y

Now, units of Pears sold in 2019 = $\frac{1400}{900} \times 3y$

= $\frac{14}{3}$y

ATQ,

$\left(3y + 1100 - 4y + \frac{14y}{3}\right) = 1650$

y = 150

Now, $\left(\frac{14y}{3} - 2x\right) = 500$

700 – 2x = 500

x = 100

Now, units of Dove sold in 2018 = $\frac{150}{100} \times 500$

= 750

And, units of LUX sold in 2019 = $\left((7x + 3y) \times \frac{40}{23}\right) - (700 + 500)$

= 800

Years	LUX	Pears	Dove
2017	200	450	500
2018	600	500	750
2019	800	700	500

Total articles sold in 2017 = 1150

Total articles sold in 2018 = 1850

Total articles sold in 2019 = 2000

Required sum = 600 + 750

= 1350

S47. Ans.(e)

Sol.

Let units of LUX sold in 2017 be 2x

So, units of Dove sold in 2017 = $\frac{250}{100} \times 2x$

= 5x

Let units of Pears sold in 2017 & units of LUX sold in 2018 be 3y & 4y respectively.

Total units of Pears sold in all the given 3 years = 550 × 3 = 1650

Now, total units sold of all 3 types of soaps in 2017 = $(2x + 5x + 3y)$

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So, total units sold of all 3 types of soaps in 2019 = $(7x + 3y) \times \frac{100}{57.5}$

= $(7x + 3y) \times \frac{40}{23}$

Now, units of Pears sold in 2018 = 1100 – 4y

Now, units of Pears sold in 2019 = $\frac{1400}{900} \times 3y$

= $\frac{14}{3}$y

ATQ,

$\left(3y + 1100 - 4y + \frac{14y}{3}\right) = 1650$

y = 150

Now, $\left(\frac{14y}{3} - 2x\right) = 500$

700 – 2x = 500

x = 100

Now, units of Dove sold in 2018 = $\frac{150}{100} \times 500$

= 750

And, units of LUX sold in 2019 = $\left((7x + 3y) \times \frac{40}{23}\right) - (700 + 500)$

= 800

Years	LUX	Pears	Dove
2017	200	450	500
2018	600	500	750
2019	800	700	500

Total articles sold in 2017 = 1150

Total articles sold in 2018 = 1850

Total articles sold in 2019 = 2000

Total units of Pears & Dove sold in 2019 together = 700 + 500

= 1200

Units of LUX sold in 2017 & 2018 together = 200 + 600

= 800

Required % = $\frac{1200-800}{800} \times 100$

= 50%

S48. Ans.(a)

Sol.

Let units of LUX sold in 2017 be 2x

So, units of Dove sold in 2017 = $\frac{250}{100} \times 2x$

= 5x

Let units of Pears sold in 2017 & units of LUX sold in 2018 be 3y & 4y respectively.

Total units of Pears sold in all the given 3 years = 550 × 3 = 1650

Now, total units sold of all 3 types of soaps in 2017 = $(2x + 5x + 3y)$

= 7x + 3y

So, total units sold of all 3 types of soaps in 2019 = $(7x + 3y) \times \frac{100}{57.5}$

= $(7x + 3y) \times \frac{40}{23}$

Now, units of Pears sold in 2018 = 1100 – 4y

Now, units of Pears sold in 2019 = $\frac{1400}{900} \times 3y$

= $\frac{14}{3}$y

ATQ,

$\left(3y + 1100 - 4y + \frac{14y}{3}\right) = 1650$

y = 150

Now, $\left(\frac{14y}{3} - 2x\right) = 500$

700 – 2x = 500

x = 100

Now, units of Dove sold in 2018 = $\frac{150}{100} \times 500$

= 750

And, units of LUX sold in 2019 = $\left((7x + 3y) \times \frac{40}{23}\right) - (700 + 500)$

= 800

Years	LUX	Pears	Dove
2017	200	450	500
2018	600	500	750
2019	800	700	500

Total articles sold in 2017 = 1150

Total articles sold in 2018 = 1850

Total articles sold in 2019 = 2000

Required ratio = $\frac{800}{750}$

= 16 : 15

S49. Ans.(c)

Sol.

Let units of LUX sold in 2017 be 2x

So, units of Dove sold in 2017 = $\frac{250}{100} \times 2x$

= 5x

Let units of Pears sold in 2017 & units of LUX sold in 2018 be 3y & 4y respectively.

Total units of Pears sold in all the given 3 years = 550 × 3 = 1650

Now, total units sold of all 3 types of soaps in 2017 = $(2x + 5x + 3y)$

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So, total units sold of all 3 types of soaps in 2019 = $(7x + 3y) \times \frac{100}{57.5}$

= $(7x + 3y) \times \frac{40}{23}$

Now, units of Pears sold in 2018 = 1100 – 4y

Now, units of Pears sold in 2019 = $\frac{1400}{900} \times 3y$

= $\frac{14}{3}$y

ATQ,

$\left(3y + 1100 - 4y + \frac{14y}{3}\right) = 1650$

y = 150

Now, $\left(\frac{14y}{3} - 2x\right) = 500$

700 – 2x = 500

x = 100

Now, units of Dove sold in 2018 = $\frac{150}{100} \times 500$

= 750

And, units of LUX sold in 2019 = $\left((7x + 3y) \times \frac{40}{23}\right) - (700 + 500)$

= 800

Years	LUX	Pears	Dove
2017	200	450	500
2018	600	500	750
2019	800	700	500

Total articles sold in 2017 = 1150

Total articles sold in 2018 = 1850

Total articles sold in 2019 = 2000

Units sold of LUX, Pears and Dove together in 2018 = 600+500+750
= 1850

Units sold of LUX and Pears together in 2019 = 800+700
= 1500

Required difference = 1850-1500 = 350

S50. Ans.(a)

Sol.

Let units of LUX sold in 2017 be 2x

So, units of Dove sold in 2017 = $\frac{250}{100} \times 2x$

= 5x

Let units of Pears sold in 2017 & units of LUX sold in 2018 be 3y & 4y respectively.

Total units of Pears sold in all the given 3 years = 550 × 3 = 1650

Now, total units sold of all 3 types of soaps in 2017 = $(2x + 5x + 3y)$

= 7x + 3y

So, total units sold of all 3 types of soaps in 2019 = $(7x + 3y) \times \frac{100}{57.5}$

= $(7x + 3y) \times \frac{40}{23}$

Now, units of Pears sold in 2018 = 1100 – 4y

Now, units of Pears sold in 2019 = $\frac{1400}{900} \times 3y$

= $\frac{14}{3}$y

ATQ,

$\left(3y + 1100 - 4y + \frac{14y}{3}\right) = 1650$

y = 150

Now, $\left(\frac{14y}{3} - 2x\right) = 500$

700 – 2x = 500

x = 100

Now, units of Dove sold in 2018 = $\frac{150}{100} \times 500$

= 750

And, units of LUX sold in 2019 = $\left((7x + 3y) \times \frac{40}{23}\right) - (700 + 500)$

= 800

Years	LUX	Pears	Dove
2017	200	450	500
2018	600	500	750
2019	800	700	500

Total articles sold in 2017 = 1150

Total articles sold in 2018 = 1850

Total articles sold in 2019 = 2000

Units of Dove sold in 2017 & 2019 together = 500 + 500

= 1000

Units of Pears and Dove sold in 2018 together = 500 + 750

= 1250

Required percentage = $\frac{1000}{1250} \times 100$

= 80%

S51. Ans.(d)

Sol. Since the passage talks about 'objective way', strengthening a hypothesis through facts would mean weakening its counterhypothesis. Hence (d) is the correct option.

S52. Ans.(b)

Sol. Subjective belief makes a scientist forward his arguments in favour of his hypothesis. Refer the first sentence of the paragraph, "Attempting to understand science and scientific reasoning in terms of the subjective beliefs of scientists would seem to be a disappointing departure for those who seek an objective account of science."

S53. Ans.(c)

Sol. Refer these words in the passage, "subjective beliefs", "prior probabilities" and "posterior probabilities". Also look for different theories and hypotheses mentioned in the paragraph. Hence it can be inferred from there that (c) is the correct option.

S54. Ans.(a)

Sol. The validity or objectivity of a hypothesis is to be decided by the outcome. Hence in context of the passage, option (a) is the correct choice.

S55. Ans.(e)

Sol. Posterior means further back in position; of or nearer the rear or hind end. **Dorsal** means on or relating to the upper side or back of an animal, plant, or organ. Hence both are similar in meanings.

S56. Ans.(c)

Sol. Conformity means compliance with standards, rules, or laws. **Acquiescence** means the reluctant acceptance of something without protest. Hence both are almost similar in meanings.

S57. Ans.(e)

Sol. Proposition means a statement or assertion that expresses a judgement or opinion; hypothesis. **Verisimilitude** means the appearance of being true or real. Hence both are opposite in meanings.

S58. Ans.(a)

Sol. Converge means come together from different directions so as eventually to meet. **Disseminate** means spread (something, especially information) widely. Hence both are opposite in meanings.

S59. Ans.(c)

Sol. Statement (A) mentions the word 'slave' and the statement (E) mentions the word 'self-respect'. Moreover, combining statement A and E yields a grammatically correct and contextually meaningful sentence. So, A-E is a correct sequence.

Similarly, combining statements B and F also yields a grammatically correct and contextually meaningful sentence. So, B-F is also a correct sentence.

Hence, option (c) is the correct answer.

S60. Ans.(d)

Sol. The tone of the sentence (A) suggests that the latter part of the sentence would present ***contrast*** to the first part of the sentence. Only sentence (F) complements the sentence (A). So, A-F would be the correct sentence combination. Similarly, B-D and C-E are correct sentence combinations.

Hence, option (d) is the correct answer.

S61. Ans.(b)

Sol. The correct sentence combinations would be A-D, C-E and B-F.

Among the options, only option (b) is the correct answer.

S62. Ans.(d)
Sol. The correct combinations of given sentences which are grammatically correct and contextually meaningful are B-D and C-F. Hence, the correct answer is ***option (d).***

S63. Ans.(c)
Sol. The correct combination of sentences which are grammatically correct and contextually meaningful are A-D and C-E. Hence, the correct answer is option (c).

S64. Ans.(b)
Sol. Leak means (of secret information) become known s
Disclose means make (secret or new information) known
Confess means a formal statement admitting that one is guilty of a crime
Withhold means refuse to give (something that is due to or is desired by another)
Disavow means deny any responsibility or support for
Hence disclose will be the correct choice

S65. Ans.(c)
Sol. Forthrightness means being direct, clear, or even straight-up.
Dioecy is a characteristic of a species meaning that it has distinct male and female individual organisms
Secrecy means the action of keeping something secret or the state of being kept secret.
Prophecy means a prediction of what will happen in the future
Monoecy means having both male and female organs in the same individual
Hence secrecy is the correct choice among all.

S66. Ans.(d)
Sol. Attest means provide or serve as clear evidence of.
Refute means prove (a statement or theory) to be wrong or false; disprove
Hence indicate best fits the purpose

S67. Ans.(a)
Sol. Derision means contemptuous ridicule or mockery.
Spurn means contemptuous ridicule or mockery.
Hence elevation will be the correct choice among all the options.

S68. Ans.(c)
Sol. Domain means an area of territory owned or controlled by a particular ruler or government
Province means a principal administrative division of a country or empire
Hence domain will best explain the meaning here.

S69. Ans.(b)
Sol. Heedlessness means careless; thoughtless; unmindful
Discreetness means modestly unobtrusive; unostentatious:
Imprudence means lacking self-restraint
Hence discreetness will be the most suitable option among all.

S70. Ans.(a)
Sol. Pertain means be appropriate, related, or applicable to
Here, pertain best fits the purpose.

S71. Ans.(b)
S72. Ans.(d)
S73. Ans.(d)
S74. Ans.(d)
S75. Ans.(c)
S76. Ans.(d)
S77. Ans.(b)
S78. Ans.(d)
S79. Ans.(d)
S80. Ans.(b)

S81. Ans.(e)
Sol.
Amortization is an accounting term that refers to the process of allocating the cost of an intangible asset over a period of time. It also refers to the repayment of loan principal over time.

S82. Ans.(d)
Sol. The Reserve Bank has the right to print currency up to 10,000 rupee notes.

S83. Ans.(b)
Sol. Deutsche Bank AG is a German global banking and financial services company, with its headquarters in the Deutsche Bank Twin Towers in Frankfurt. Deutsche Bank was founded in Berlin in 1870 as a specialist bank for foreign trade.

S84. Ans.(e)
Sol. Mukurthi National Park (MNP) is a protected area located in the western corner of the Nilgiris Plateau west of Ootacamund hill station in the northwest corner of Tamil Nadu state in the Western Ghats mountain range of South India

S85. Ans.(c)
Sol. Jharsuguda Thermal Power Plant, in the Jharsuguda district of Odisha, is currently the tenth largest thermal power plant operating in India. It is a 2400MW coal-fired power plant owned and operated by Sterlite Energy, a 100% subsidiary of Vedanta Resources.

S86. Ans.(c)
Sol. CRISIL pioneered the first corporate sector rating in 1988. one out of every two companies in India is rated by CRISIL. We have an unmatched coverage of about 70 sectors belonging to 22 industry groups. CRISIL is a analytical company providing ratings, research, and risk and policy advisory services.

S87. Ans.(c)

Sol. Reserve Bank of India's (RBI) Governor for 21 days, Amitabha Ghosh, passed away on 15th September at the age of 90.

Ghosh had the shortest stint as RBI governor, from January 15, 1985 to February 4, 1985.

S88. Ans.(d)

Sol. Tropical Storm Cristobal has reached the southeastern United States, bringing heavy rains and sustained winds of up to 50 mph.

Storm surge warnings have been issued for the southeast coast of Louisiana as well as the Mississippi coast for 7th June.

Cristobal is the third named storm of the Atlantic hurricane season. If the storm maintains its current track, Mississippi could be the state hardest hit, according to Gavin Phillips, a forecaster with the National Weather Service New Orleans.

S89. Ans.(d)

Sol. No tax would be deducted at source for PF withdrawals of up to Rs. 50,000. The government has notified raising the threshold limit of PF withdrawal for deduction of tax (TDS) from existing Rs. 30,000 to Rs. 50,000.

S90. Ans.(d)

Sol. SBI Card announced the launch of its new brand campaign, Contactless Connections that spreads the message that love and care can be shared even during this difficult period where social distancing is the norm.

Contactless payments, enabled by SBI Card, allow consumers to simply wave their card or phone or scan a QR code to make safe, secure payments, without handing over their card or punching in the PIN.

S91. Ans.(b)

Sol. The Multilateral Investment Guarantee Agency is an international financial institution which offers political risk insurance and credit enhancement guarantees. The Head Office of MIGA is in Washington DC, USA.

S92. Ans.(b)

Sol. Airtel Payments Bank is a subsidiary of Bharti Airtel. It is the first company in India to receive a payments bank license from the Reserve Bank of India and it became the first live payments bank in the country.

S93. Ans.(c)

Sol. Payment banks can accept deposits restricted to Rs. 1 lakh per customer.

S94. Ans.(e)

Sol. Bank deposit insurance hiked to Rs 5 lakh per depositor by Budget 2020.

S95. Ans.(e)

Sol. 30th September is observed by the United Nations as International Translation Day, every year. The primary aim of the day is to celebrate and appreciate the work of language translation professionals. These language translator professionals facilitates dialogue, understanding and cooperation.

S96. Ans.(d)

Sol. The leverage ratio is the proportion of debts that a bank has compared to its equity/capital. There are different leverage ratios such as. Debt to Equity = Total debt / Shareholders Equity.

S97. Ans.(c)

Sol. The State Bank of India (SBI), India's largest public sector lender, and Titan Company have partnered to launch contactless payment services through watches, called Titan Pay.

Benefit: SBI account holders can tap their Titan Pay watch on contactless payment POS machines without the need of swiping or inserting their SBI bank card. The payment feature on these watches will be accessible on over 2 million contactless MasterCard-enabled POS machines in the country, stated the release.

S98. Ans.(c)

Sol. The Reserve Bank of India (RBI) has deferred implementation of provisions made under Basel III capital due to uncertainty related to COVID crisis.

In this regard, RBI will repel the final tranche of the capital conservation buffer (CCB) and the implementation of net stable funding ratio (NSFR) by six months i.e. April 1, 2021.

The capital conservation buffer is an additional pool that banks build in normal times for its use during periods of stress. The RBI had asked banks to build up the capital conservation buffer to the required 2.5% in stages. The last stage of 0.625% was to start on Sept. 30, 2020. This has now been deferred to April 1, 2021. The RBI had earlier deferred the implementation by six months from March 31, 2020.

S99. Ans.(d)

Sol. Government of India, NABARD and RBI. Financial Inclusion Fund (FIF), and Financial Inclusion Technology Fund (FITF) is made for upgrade and support for developing and promotional activities and enhancing investment in Information Communication Technology, respectively.

S100. Ans.(c)

Sol. Mutual funds in India are regulated and monitored by the Securities and Exchange Board of India (SEBI), which strives to protect the interests of investors.

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