

Answer Key for IBPS SO (IT) Model Question Paper 2017

1.	C	2.	B	3.	B	4.	D	5.	D
6.	D	7.	A	8.	A	9.	B	10.	A
11.	D	12.	E	13.	C	14.	D	15.	B
16.	C	17.	E	18.	D	19.	A	20.	B
21.	A	22.	B	23.	D	24.	B	25.	E
26.	A	27.	C	28.	B	29.	B	30.	A
31.	D	32.	C	33.	A	34.	D	35.	B
36.	C	37.	D	38.	C	39.	E	40.	A
41.	D	42.	B	43.	B	44.	E	45.	C
46.	C	47.	A	48.	B	49.	D	50.	C
51.	D	52.	B	53.	E	54.	D	55.	A
56.	D	57.	B	58.	C	59.	A	60.	A
61.	B	62.	A	63.	C	64.	D	65.	D
66.	B	67.	B	68.	C	69.	A	70.	D
71.	E	72.	B	73.	D	74.	A	75.	C
76.	B	77.	A	78.	A	79.	D	80.	C
81.	E	82.	A	83.	D	84.	B	85.	D
86.	A	87.	B	88.	D	89.	A	90.	E
91.	E	92.	D	93.	D	94.	B	95.	D
96.	E	97.	A	98.	B	99.	E	100.	B
101.	C	102.	C	103.	D	104.	C	105.	C
106.	E	107.	C	108.	D	109.	C	110.	A
111.	A	112.	D	113.	C	114.	E	115.	C
116.	C	117.	B	118.	A	119.	D	120.	B
121.	A	122.	B	123.	C	124.	C	125.	E
126.	E	127.	A	128.	D	129.	C	130.	A
131.	B	132.	C	133.	B	134.	B	135.	D
136.	E	137.	C	138.	E	139.	D	140.	C
141.	C	142.	A	143.	A	144.	C	145.	C

146.	C	147.	D	148.	B	149.	C	150.	C
151.	A	152.	B	153.	E	154.	D	155.	C
156.	A	157.	E	158.	D	159.	C	160.	B
161.	D	162.	C	163.	B	164.	B	165.	A
166.	A	167.	A	168.	D	169.	A	170.	B
171.	A	172.	C	173.	B	174.	D	175.	A
176.	A	177.	A	178.	C	179.	C	180.	E
181.	A	182.	A	183.	C	184.	B	185.	B
186.	A	187.	A	188.	C	189.	A	190.	D
191.	A	192.	A	193.	A	194.	A	195.	A
196.	B	197.	B	198.	B	199.	B	200.	B

Solutions:

1. Mobina was brought by the couple who promised to provide her with proper living expenses and education and in return she would help them in their domestic affairs. The practical scenario was different and she was not given any of the promised amenities, not even sufficient food. Option 3 is the most appropriate answer while the rest of the options are either insufficient or incorrect.
2. **According to the passage, “Dr. Lenin came across subjugation, exploitation and injustice in many forms in 1993, when he started working with Kailash Satyarthi and his Bachpan Bachao Andolan. He and his team undertook several missions to release bonded child labourers. The plight of these children left Dr. Lenin disturbed to the core.”** The plight of the captured children was the main reason that inspired him to establish an organization of his own. Thus option 2 is the correct answer.
3. The paragraph tells us about the work done by PVCHR. It works for a number of things to make the society better but its main objective is to make everyone self reliant through jobs and education. Thus option 1 is the correct answer **and the rest are less appropriate. According to the passage, “Creating awareness through community-based discussions, campaigns, informal**

education, etc and working with the survivors to make them economically self-reliant through jobs, education, etc are the main objectives of the organization. PVCHR also helps the survivors in their legal cases if there are any.”

4. The work done by PVCHR is mentioned in the paragraph. Except option 4 all other statements have been mentioned. Thus option 4 is the correct answer as nothing is mentioned about PVCHR offering scholarships to underprivileged children for higher studies people.
5. All the options mentioned here are correct with respect to the passage, but not all of them convey the main idea of the passage. The message that has been conveyed in the last part of the passage is the necessity of a good desire and determination in every individual to bring a change in the society. Showing bravery or spreading education are only some instances. Thus option 5 is the correct answer.
6. According to Dr. Lenin Raghuvanshi the problems prevailing in the society mostly hamper the women and children. They have been dominated for a long time and it is due to the existing norms prevailing in our society. All problems have a common root---- the domination of the male group on others. Thus option 4 is the most appropriate answer.
7. The passage with reference to Mobina states that ***‘she was on the ball and took the necessary steps’***. **To be on the ball means ‘to be alert and quick to respond’**. **So it can be said that the** most significant trait in Mobina was her desire to improve her life and her bravery and smartness in taking help from PVCHR and improving her life. She even continued to be an inspiration for other girls among whom she spread the message of education. Thus option 1 is the correct answer.
8. The word **‘hegemony’** means **‘leadership or dominance’**, especially by one state or social group over others. Thus **‘dominance’** is the word which has the same

meaning. Thus option 1 is the correct answer. 'Descent' means 'downfall'.

E.G. *The conspiracy of the ministers caused the descent of the king.*

9. The word 'veritable' means 'genuine'. Thus the words which have opposite meaning is deceptive which means 'misleading'. Options 1 and 4 are synonyms of the given word. Thus option 2 is the correct answer. Duplicate is not an apt antonym. 'Apostle' refers to a disciple.

10. The word 'miscreant' means 'a person who has done something wrong'. Thus option 1 is the correct answer as 'malefactor' has the same meaning. The meanings of the other words are as follows:

Altruist: a person who has unselfish regard and devotion to the welfare of others.

E.G. *His altruist nature is appreciated by all.*

Benevolent: Kind

Impudent: not showing due respect for another person.

E.G. *Mohan is an impudent young boy who does not respect his teachers.*

Benefactor: a person who gives money or forward helps to others.

E.G. *Miss Polly adopted Roma and has been her benefactress since then.*

11. The word 'subjugation' means 'to dominate' or 'oppress'. Thus option 4 is the correct answer. 'Liberate' and 'loosen' express opposite meanings. 'Deceive' means to 'cheat' and is not synonymous to 'subjugation'. 'Destroy' is also irrelevant here.

12. The word 'marginalized' means 'forcefully made powerless'. Thus the word opposite in meaning is 'elevated' which means 'to raise or lift to a higher position'. Thus option 5 is the correct answer. 'Affluent' means 'wealthy or rich'.

13. The word 'patriarchy' means 'characteristic of a form of social organization in which the male is the family head and title is traced through the male line.' Thus the word having opposite meaning is 'matriarchy' which means the female taking the lead role in social spaces. Thus option 3 is the correct

answer. The meanings of the other words are as follows:

Antiquated: old fashioned and outdated.

E.G. The Delhi Science Museum reserves some antiquated machines from the nineteenth century.

Senile: having or showing the weakness or disease of old age.

E.G. My grandfather is a senile old man.

14. **The idiom ‘on the ball’ means to know a situation well or understand all the pros and cons of a thing.** Mobina could understand that her life would not improve staying in that house thus she sought help from the organization. Thus option 4 is the correct answer.
15. **The idiom ‘take with a grain of salt’ means ‘not to take too seriously what someone says’.** This means Lenin’s words and actions were not taken very seriously and he had to face a lot of hardship in his work. Thus option 2 is the correct answer.
16. The paragraph begins with the introduction about how ‘black money’ is an integral part of various sectors in India. The sentence with the blank explains how black money is present at an individual level also. So, the blank needs an **adverb which would convey the meaning that ‘in addition’ to the given**, the details mentioned in the second sentence also exists. Since the blank is **succeeded by ‘from’, the best fit adverb from options 1, 2 and 3 is option 3 – ‘apart’.** ‘Apart from’ in the given context means ‘as well as’ or ‘in addition to’. Options 4 and 5 do not make appropriate sense if put in the blank space, thus, option 3 is the correct answer.
17. **‘Effect’ is a noun and refers to ‘a result or a consequence.** *E.G. The effect of global warming will be immensely harmful for all living organisms.*
‘Affect’ is a verb and means to ‘produce a change or influence something.’
It is a general notion that co- **curricular activities adversely affect children’s studies.** ‘Effected’ and ‘affected’ are past tense for the words respectively.
‘Result’ fails to make any sense in the given sentence. From the sentence, it is

evident that the blank needs a verb that would explain how people's lifestyles are influenced by others and hence 'affected' is the best fit answer.

18. As already told, 'affect' means 'to influence something.' Logically speaking, *corruption* is supposed to badly affect an economy. Thus, 'adversely' which means 'against one's desire or unfavourably' is the most appropriate answer. Though 2, 3, 4 and 5 are all words that are used to denote negative emotions, only option 4 fits the best. Option is completely irrelevant in the given context. Thus, option 4 is the correct answer.
19. The given blank needs a verb that would estimate or measure the similarities or dissimilarities between India and its neighbouring countries. Options 3 and 4 are not viable as they mean to point out only the differences. 'Judge' does not make proper sense in the given blank space. Option 2 would be grammatically incorrect. Given the context of the sentence, 'compared' makes appropriate sense and option 1 is the correct answer.
20. 'Disregard' and 'Negligence' are synonymous and means to ignore. 'Consideration' means 'a payment or reward'. 'Study' means 'to devote time and attention to gain knowledge'. 'Omission' means 'to exclude'.
Note that the sentence under concern talks about *paying* something in *adequate* amount. It also says that *bribe* has to be paid. Thus, with respect to this context, only 'consideration' fits blank (E).
21. The given sentence talks about extra money given by students apart from the admission fees. Thus, 'fees' cannot be used again. 'Salary' is paid for work done and is not applicable in this context. 'Alms' are given to beggars and is not applicable in this context. 'Bribe' refers to the illegal money given to a person or an institution and need not be used here as 'donation' makes more sense. And option 1 is the answer.
22. The given blank needs an adjective that would define the small percentage of total global wealth held in the country's banking system as described after it.

Options 3, 4 and 5 are not applicable as they all mean major or noteworthy. 'Few' is a term applied in case of concrete numbers and is inappropriate in the given context. 'Meagre' is better applied to percentages, thus option 2 is the correct answer.

23. The given blank needs a word that would express the uniting of the rest of the world in comparison to India. This is best expressed by the word 'combine' whose past tense 'combined' is to be used to keep the tense correct. Thus option 4 is the correct answer.
24. The sentence talks about how Swiss bankers have denied what a leading newspaper in India have reported. Since it is quite clear from the later sentences that the findings of the newspaper do not have any concrete proof, the best fit word for the blank is 'allegation' which means 'a claim or assertion that someone has done something illegal or wrong, typically one made without proof'. Since there are several such reports, the plural form 'allegations' is to be used, making option 2 the correct answer. 'Statements' is not as appropriate.
25. The sentence states that the Swiss banks have not revealed to the world any report. These reports are often called publications and are 'published' by the respective authorities. Thus, option 5 is the correct answer.
26. The error lies in part 1 of the sentence as the verb 'is' is incorrect and needs to be replaced with 'are'. Since the article 'a' is present after 'and' so the nouns are plural. Thus option 1 is the correct answer.
27. The correction is in the usage of the preposition 'for'. The preposition 'for' is used to indicate the use of something or usually means 'because of'. The correct preposition to be used is 'of' which means 'connected with'. Therefore, the correct phrase is 'on the face of all those'.
28. We need to use the article 'the' here before poor and the ill, then only will the sentence make sense. On using the article the meaning of the sentence gets

clear that only the ill and the poor people will receive monetary help as the definite article helps to specify who will receive the help.

29. The correct co-ordinating conjunction needed here is 'and' which joins two nouns 'apples+strawberries'. So the error is in option 2
30. **The correction is in the article 'a'. The article 'a' is an indefinite article. The correct usage is by replacing 'a' with a definite article such as 'the'. This is because the phrase 'one of' takes definite article and plural noun. Therefore, the correct phrase is 'One of the most'.**
31. 'Comparing ' is a present participle. Since the action done by it is in the past, it would be better to use 'compared' which is the past participle. Thus the correct sentence is - '*The University ended fiscal 2014 with an operating surplus of \$2.7 million (which includes a one-time benefits adjustment) compared to an operating deficit of \$33.7 million in fiscal 2013.*'
32. **The correction is in the usage pronoun 'them'. Since singular pronoun 'his' and singular word 'administrator' have been used in other parts of the sentence, the usage of the plural pronoun 'them' is wrong. The correct pronoun which should be used is 'him'. Therefore, the correct phrase would be 'and therefore made him'. Thus, the error is in part 3.**
33. **The error lies in part 1 of the sentence where the pronoun 'her' needs to be replaced with 'herself' to make the sentence grammatically correct.**
34. The preposition needed here is 'at' not 'with' because 'with' is requires an instrument to go with it--like 'with a hammer,'with a spoon' etc. You are good 'at ' something like learning,swimming etc. So the error is in option 4
35. When two nouns (jury and judge) are connected by the conjunction 'and', the following verb (has) should be in its plural form(have). Thus the correct sentence is - '*Both the jury and the judge have come to the same conclusion regarding this case.*'

36. The meaning of the sentence should be such that the Centre had to collect money through taxes for a justifiable action or reason. 'Reason' can be best expressed by the word 'cause' and 'resort' also fits the first blank effectively. The preposition after the first blank cannot take any of the other words except 'resort' and 'turn'. Thus option 3 is the correct answer as it a stronger set of words than 'turn, work'.
37. something has happened to the person's weight that has directly affected her clothing. One can either gain weight or lose weight. Thereby your clothing will become tight or loose respectively.

Now, note that the blank comes after 'weight'. The act of losing weight is called 'weight loss' and the act of putting on weight is called 'weight gain'. The only option that has a noun as the first word is option 4 'loss, loose' and this is the correct answer.

Note the difference between 'lose' and 'loose'. 'Lose' means to not have something anymore. 'Loose' either means 'not tight' or it means 'to set free'. Thus option 4 is the correct answer.

38. The first blank needs an adjective to describe the character of a person who believes in superstitions. Options 4 and 5 can be negated because such people will not be generally called 'clever' or 'wise'. The second blank needs a word to denote the widespread presence of 'superstition' in the town. The best word to describe this is 'prevalent'. 'Gullible' would be more appropriate than 'stupid' because it refers to a person who gets 'easily persuaded or influenced' and to believe in superstition, person must be credulous. Hence option 3 is the best fit answer.
39. It is known that the main food for a baby is its mother's milk. Thus the first blank needs a word that that takes into account the essential substances to while the second blank needs a word that describes the associated development. Options 1 and 2 do not provide a sensible answer when put in the blanks. 'Wholesome' and 'beneficial' cannot be used without some other

words like 'food' or 'nurture' etc. succeeding it. Option 5 provides a perfectly sensible answer. 'Nutrients' refer to 'substances which provide nourishment'.

40. The two closest options are 1 and 2 as we are talking about a crime. Here 'request' in 2 is informal and on the other hand 'complaint' perfectly fits the context. Thus option 1 is the correct answer.
41. F clearly starts the passage as it introduces the topic which is about *a Spanish carriers German unit*. D describes the banking service and tells the utility of it. **'Through this' is a significant hint that suggests that D follows F. B tells who will service the accounts of O2, thus giving more information about the banking service.**

E mentions that carriers have already offered banking services in 'developing countries' and C talks about Kenya, which is a developing country. Thus, E fits best as the fourth sentence. A concludes the sentence by telling about the **European context which logically follows C. Also, 'similar offerings' is used with reference to services like M. Pesa, which has been mentioned in C.**

Thus, the correct sequence is FDBECA.

The first sentence is F.

42. F clearly starts the passage as it introduces the topic which is about *a Spanish carriers German unit*. D describes the banking service and tells the utility of it. **'Through this' is a significant hint that suggests that D follows F. B tells who will service the accounts of O2, thus giving more information about the banking service.**

E mentions that carriers have already offered banking services in 'developing countries' and C talks about Kenya, which is a developing country. Thus, E fits best as the fourth sentence. A concludes the sentence by telling about the European context which logically follows C. Also, **'similar offerings' is used with reference to services like M. Pesa, which has been mentioned in C.**

Thus, the correct sequence is FDBECA.

The second sentence is D.

- 43 F clearly starts the passage as it introduces the topic which is about *a Spanish carriers German unit*. D describes the banking service and tells the utility of it. **‘Through this’ is a significant hint that suggests that D follows F. B tells who will service the accounts of O2, thus giving more information about the banking service.**

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Thus, the correct sequence is FDBECA.

The third sentence is B.

44. F clearly starts the passage as it introduces the topic which is about *a Spanish carriers German unit*. D describes the banking service and tells the utility of it. **‘Through this’ is a significant hint that suggests that D follows F. B tells who will service the accounts of O2, thus giving more information about the banking service.**

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Thus, the correct sequence is FDBECA.

The fourth sentence is E.

45. F clearly starts the passage as it introduces the topic which is about *a Spanish carriers German unit*. D describes the banking service and tells the utility of it. **‘Through this’ is a significant hint that suggests that D follows F. B tells who will service the accounts of O2, thus giving more information about the banking service.**

E mentions that carriers have already offered banking services in ‘developing countries’ and C talks about Kenya, which is a developing country. Thus, E fits best as the fourth sentence. A concludes the sentence by telling about the European context which logically follows C. Also, ‘similar offerings’ is used with reference to services like M. Pesa, which has been mentioned in C.

Thus, the correct sequence is FDBECA.

The fifth sentence is C.

46. The sentence is speaking about doom for the economy. Thus the trade must have been 'falling'. The correct word to express this meaning is 'deteriorating'.
47. The meaning of the above words is given below:

Codicil: an addition to the will that changes or clarifies the original document.

Codify: to classify things in a logical manner

Coddle: to treat gently or with great care

Coalition: a group formed to gain an advantage

The word ‘codicil’ fits here and the rest are incorrect. The given word ‘codicile’ is not correctly spelt. Thus option 1 is the correct answer.

48. Here, the meaning of the above words is as follows :

Boddy: slightly damp

shoddy: poor or not up to the mark

sagging: that hangs down

slushy: damp

The word 'shoddy' fits here and the rest are incorrect. Thus option 2 is the correct answer.

49. The correct word which would fit here is 'bale' which means 'bundle of hay'. The word 'bail' means 'bucket handle'. Thus it is incorrect. Option 4 is the correct answer. The other options are incorrect.

50. The word 'conduit' means 'a means of getting something to another place or person'.

The word 'condign' means 'fair, fitting, and deserved'.

The word 'corsage' means 'a small bouquet of flowers worn on a woman's dress or worn around her wrist to a formal occasion, traditionally purchased by the woman's date'.

The word 'cower' means 'crouch down in fear'.

Thus we see that the words are either verbs or adjective except option 3. It is a noun and fits in the sentence as well.

Reasoning Ability

51. Eight family members A, B, C, D, E, F, G and H are sitting in a row facing north.

Note: Four of them are males. There are three couples in the family.

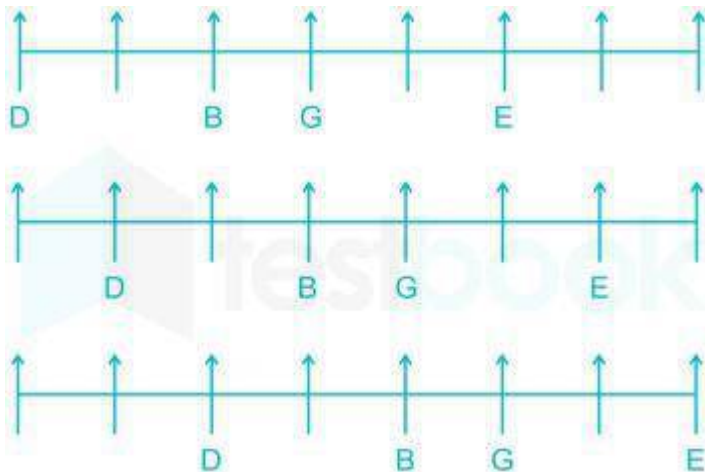
Symbol in Diagram	Meaning
	Female
	Male
	Married Couple
	Siblings
	Difference of A Generation

Let us draw a straight line and mark 8 persons who are facing north.



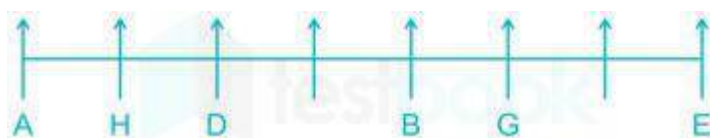
- 1) E sits second to the right of G.
- 2) B is on the immediate left of G.
- 3) D is second to left of B.

Thus we get 3 possibilities,

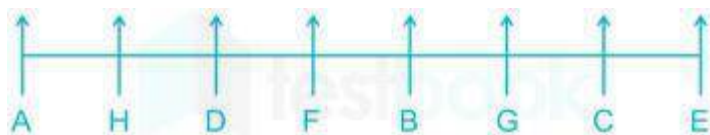


- 4) D is wife of H and sits adjacent to her husband.
- 5) A is brother of H, who is on the immediate right of A.

Here possibility 1 and 2 are not possible.



6) F is not a neighbour of G.

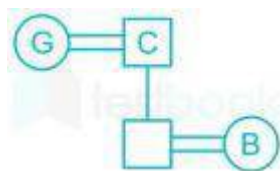


Now let us draw family tree.

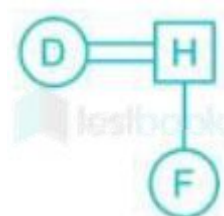
7) E is a male and sits second to the right of G, who is wife of C.



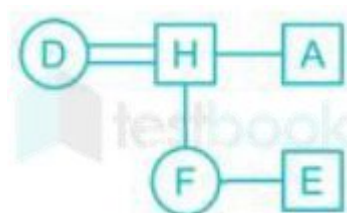
8) B is a female and sits second to the left of her father in law. It means C is father in law of B.



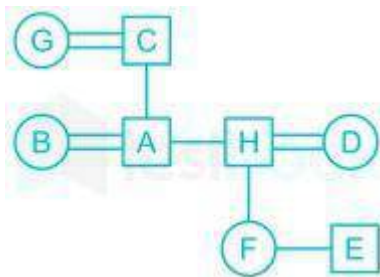
9) D is wife of H. F is daughter of H.



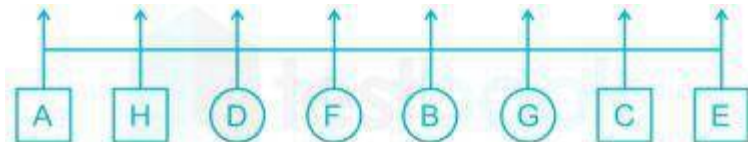
10) A is brother of H, E and F are siblings, E is a male.



Now combine both family trees,



Now we can mark the male and female members in the line as:



Clearly there are four females between C and H.

52. Eight family members A, B, C, D, E, F, G and H are sitting in a row facing north.

Note: Four of them are males. There are three couples in the family.

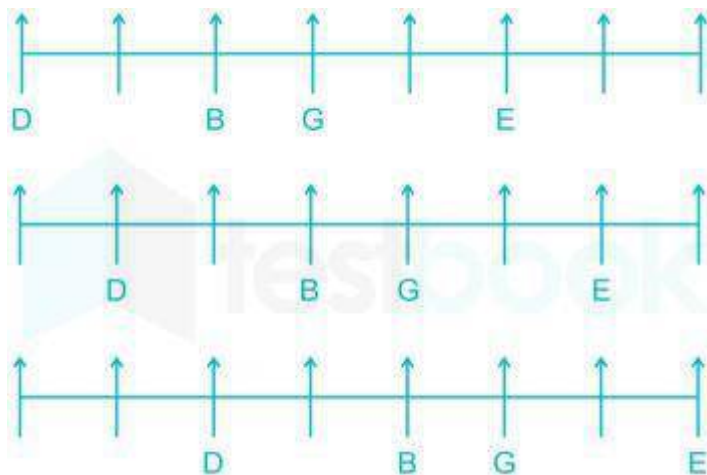
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	Difference of A Generation

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- 1) E sits second to the right of G.
- 2) B is on the immediate left of G.
- 3) D is second to left of B.

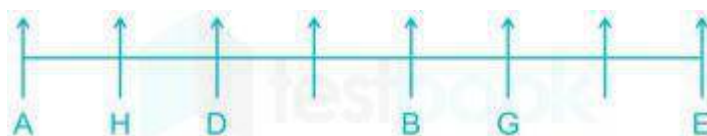
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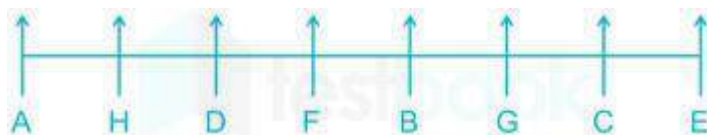
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Here possibility 1 and 2 are not possible.



6) F is not a neighbour of G.

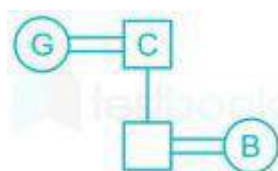


Now let us draw family tree.

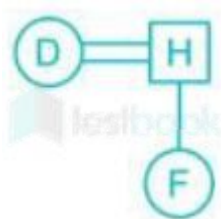
7) E is a male and sits second to the right of G, who is wife of C.



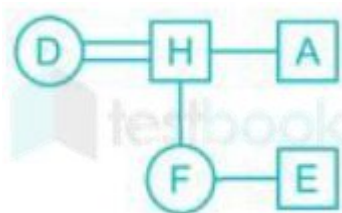
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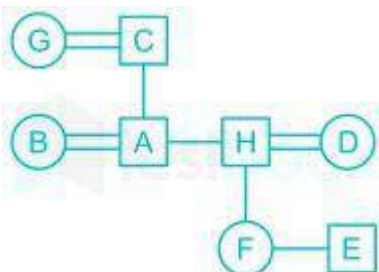
9) D is wife of H. F is daughter of H.



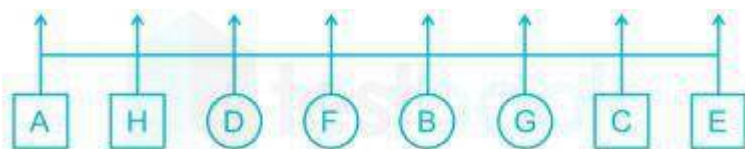
10) A is brother of H, E and F are siblings, E is a male.



Now combine both family trees,





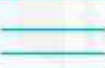


Now we can mark the male and female members in the line as:



Clearly, F sits second to left of G and F is the granddaughter of G.

53. Eight family members A, B, C, D, E, F, G and H are sitting in a row facing north.

Note: Four of them are males. There are three couples in the family.

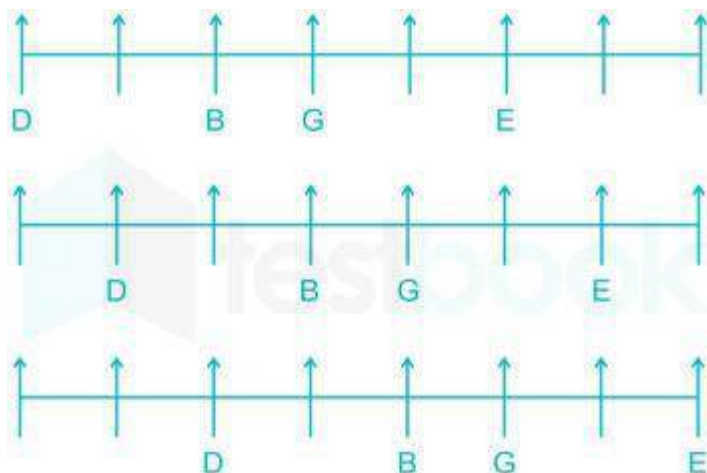
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	Difference of A Generation

Let us draw a straight line and mark 8 persons who are facing north.



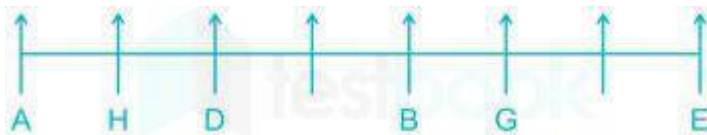
- 1) E sits second to the right of G.
- 2) B is on the immediate left of G.
- 3) D is second to left of B.

Thus we get 3 possibilities,

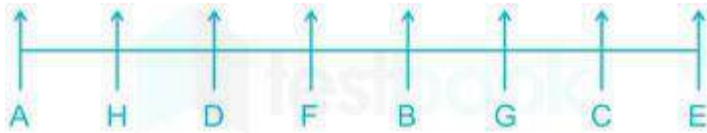


- 4) D is wife of H and sits adjacent to her husband.
- 5) A is brother of H, who is on the immediate right of A.

Here possibility 1 and 2 are not possible.



6) F is not a neighbour of G.

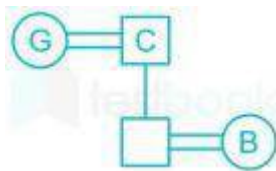


Now let us draw family tree.

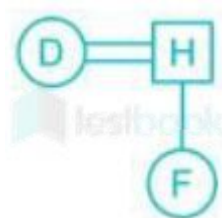
7) E is a male and sits second to the right of G, who is wife of C.



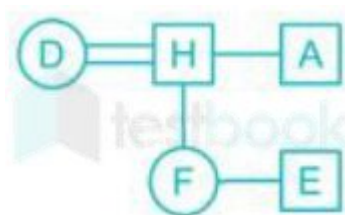
8) B is a female and sits second to the left of her father in law. It means C is father in law of B.



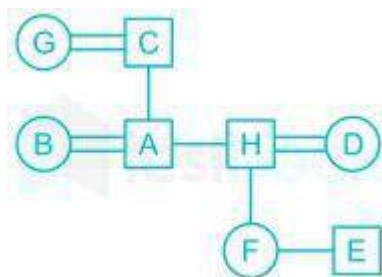
9) D is wife of H. F is daughter of H.



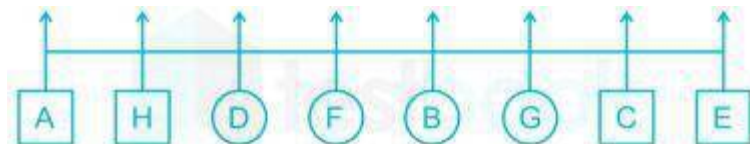
10) A is brother of H, E and F are siblings, E is a male.



Now combine both family trees,



Now we can mark the male and female members in the line as:



Clearly C is third to the right of D's daughter F.

54. Eight family members A, B, C, D, E, F, G and H are sitting in a row facing north.

Note: Four of them are males. There are three couples in the family.

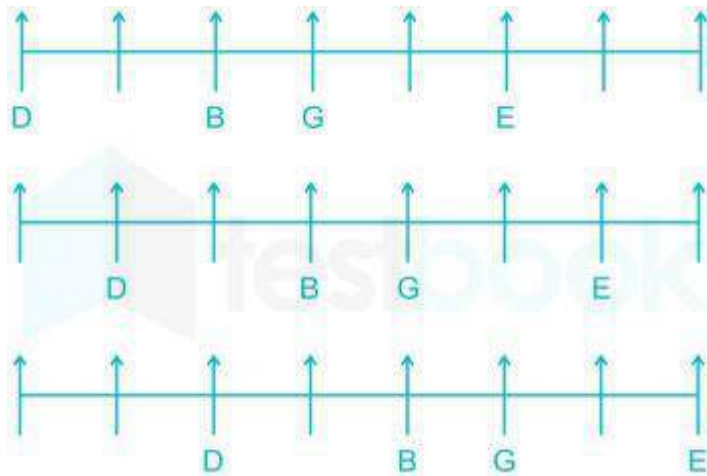
Symbol in Diagram	Meaning
	Female
	Male
	Married Couple
	Siblings
	Difference of A Generation

Let us draw a straight line and mark 8 persons who are facing north.



- 1) E sits second to the right of G.
- 2) B is on the immediate left of G.
- 3) D is second to left of B.

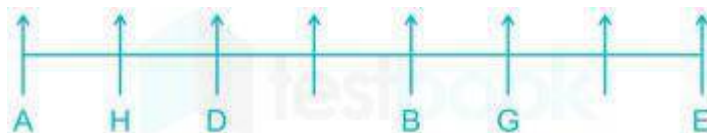
Thus we get 3 possibilities,



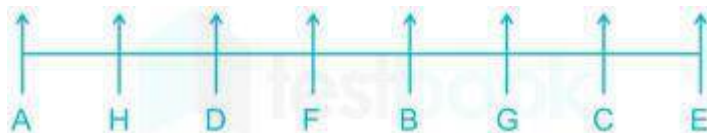
4) D is wife of H and sits adjacent to her husband.

5) A is brother of H, who is on the immediate right of A.

Here possibility 1 and 2 are not possible.



6) F is not a neighbour of G.

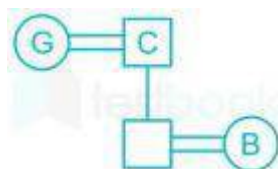


Now let us draw family tree.

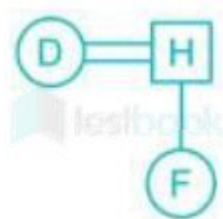
7) E is a male and sits second to the right of G, who is wife of C.



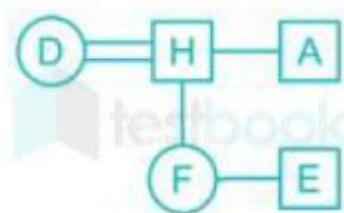
8) B is a female and sits second to the left of her father in law. It means C is father in law of B.



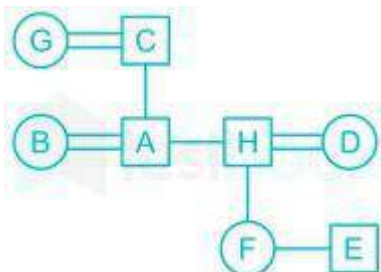
9) D is wife of H. F is daughter of H.



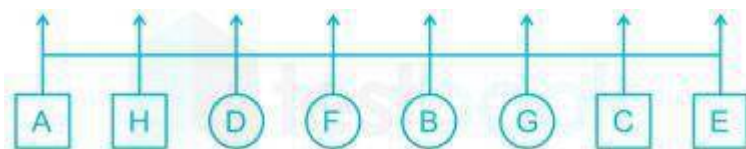
10) A is brother of H, E and F are siblings, E is a male.



Now combine both family trees,



Now we can mark the male and female members in the line as:



Clearly, GB is different from others as second person is sitting to the immediate left of first person whereas in other options second person is sitting to the immediate right of first person.

55. Eight family members A, B, C, D, E, F, G and H are sitting in a row facing north.

Note: Four of them are males. There are three couples in the family.

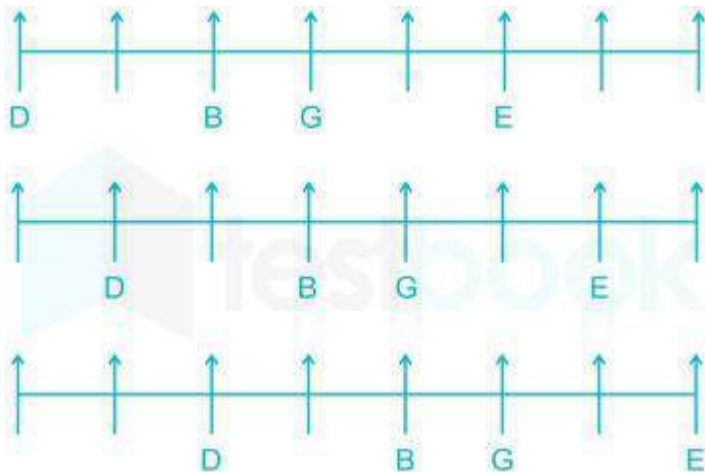
Symbol in Diagram	Meaning
	Female
	Male
	Married Couple
	Siblings
	Difference of A Generation

Let us draw a straight line and mark 8 persons who are facing north.



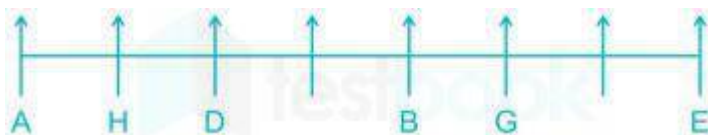
- 1) E sits second to the right of G.
- 2) B is on the immediate left of G.
- 3) D is second to left of B.

Thus we get 3 possibilities,

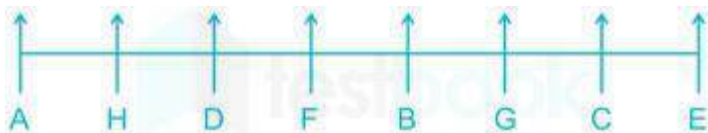


- 4) D is wife of H and sits adjacent to her husband.
- 5) A is brother of H, who is on the immediate right of A.

Here possibility 1 and 2 are not possible.



6) F is not a neighbour of G.

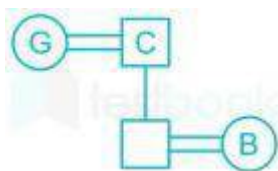


Now let us draw family tree.

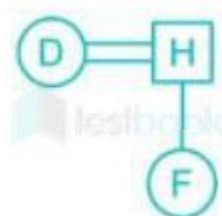
7) E is a male and sits second to the right of G, who is wife of C.



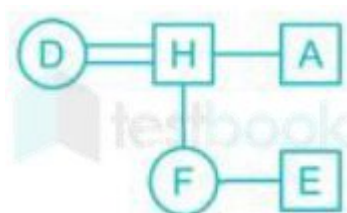
8) B is a female and sits second to the left of her father in law. It means C is father in law of B.



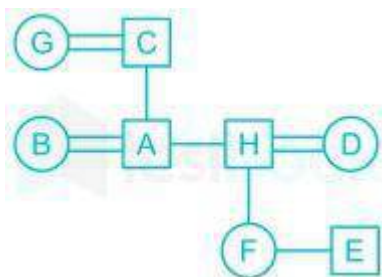
9) D is wife of H. F is daughter of H.



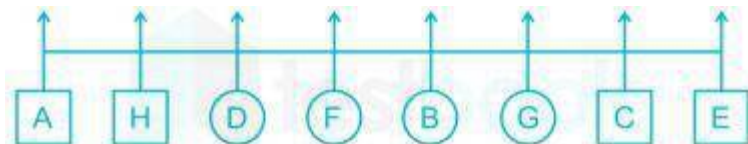
10) A is brother of H, E and F are siblings, E is a male.



Now combine both family trees,



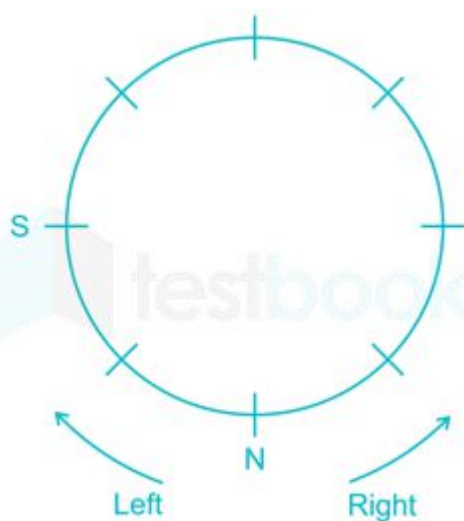
Now we can mark the male and female members in the line as:



Clearly D is third to the left of G (Mother-in-law of D).

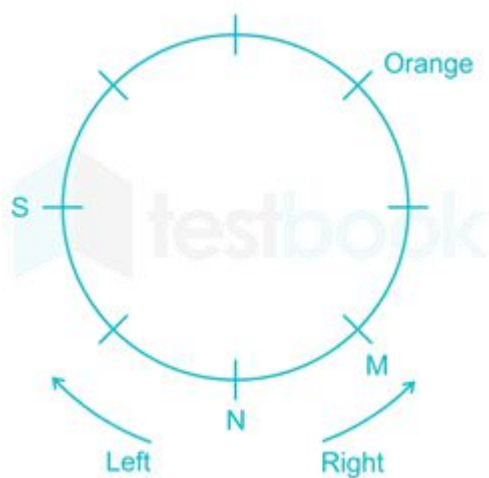
56. According to the given conditions, solving step-wise:-

1) S is sitting second to the left of N.

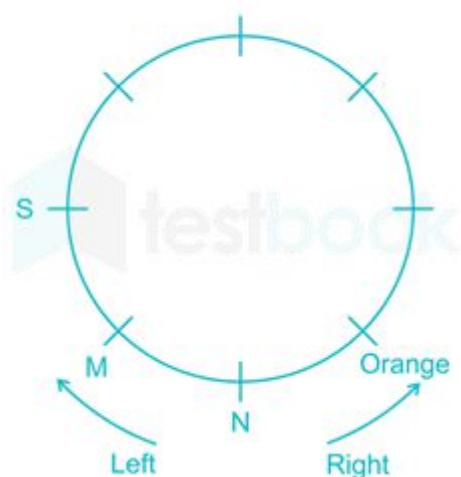


2) There are two persons between S and the person who likes Orange colour and M is the second to the left of the person who likes Orange colour.

1.

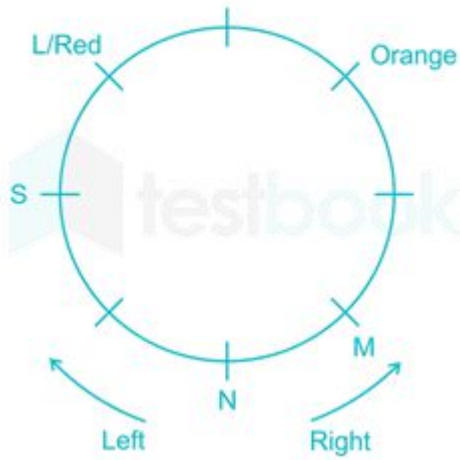


2.

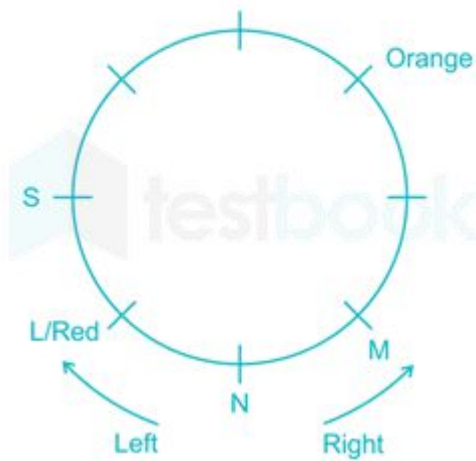


3) L is the immediate neighbour of S. L likes Red colour. So we have following possibilities.

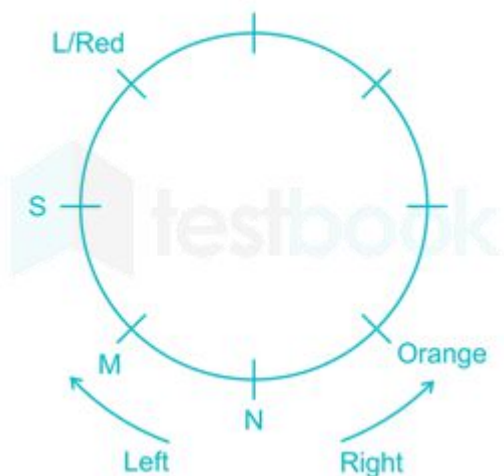
1.a



1.b

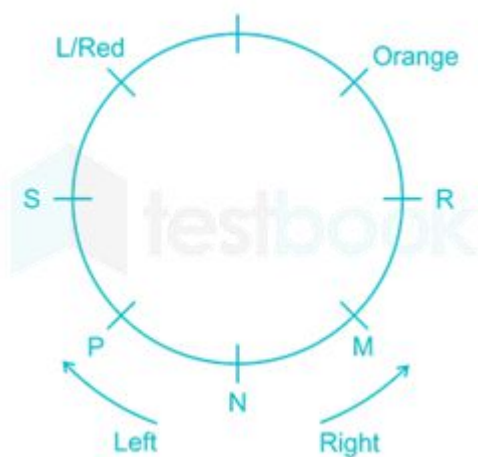


2.a

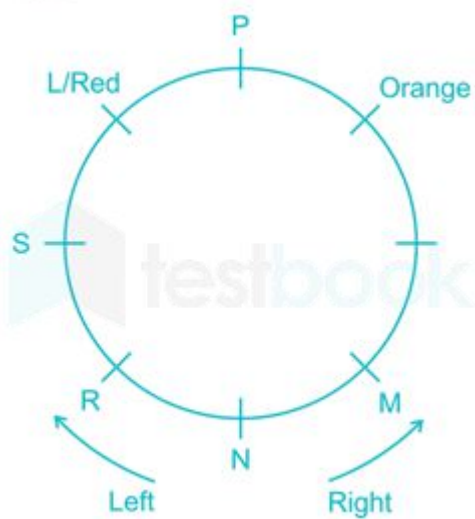


4) R is the third to the right of P.

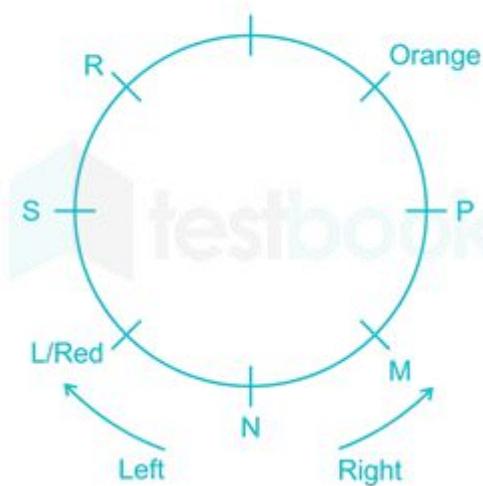
1.a.1



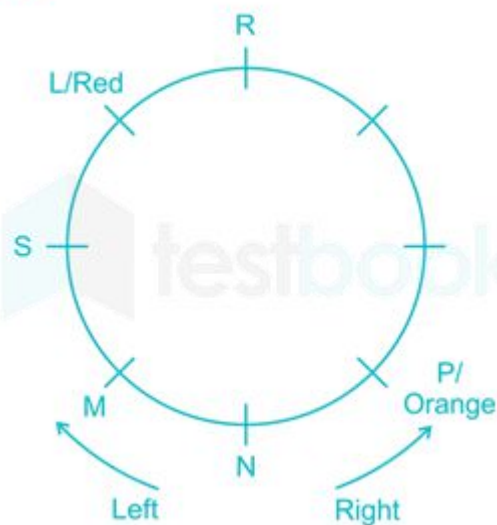
1.a.2



1.b

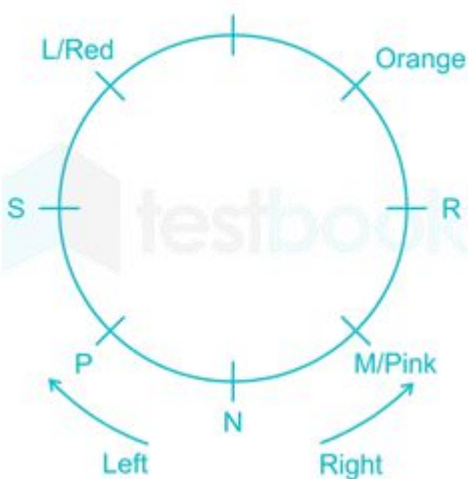


2.a

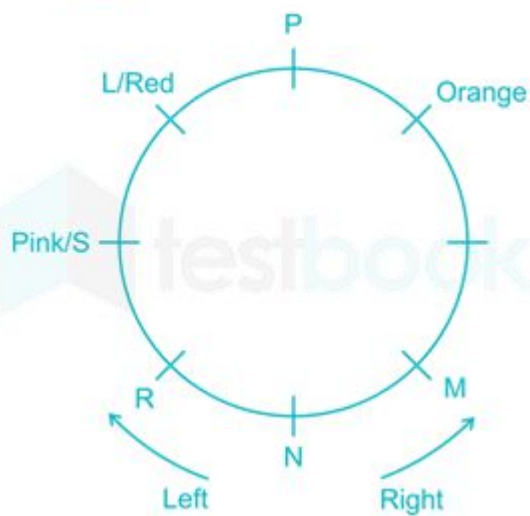


5) The person who likes Pink colour is second to the right of P.

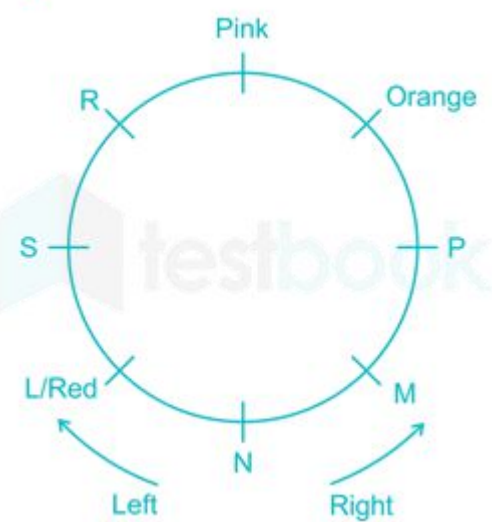
1.a.1



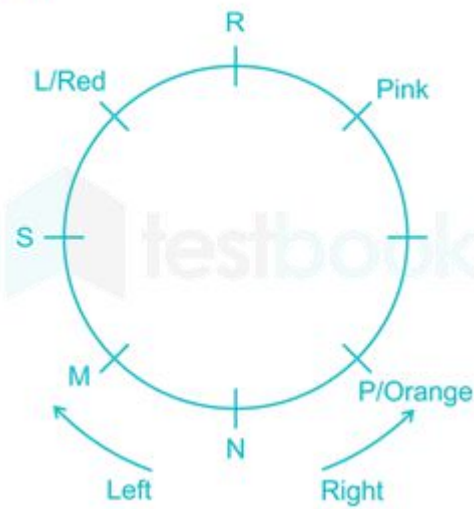
1.a.2



1.b

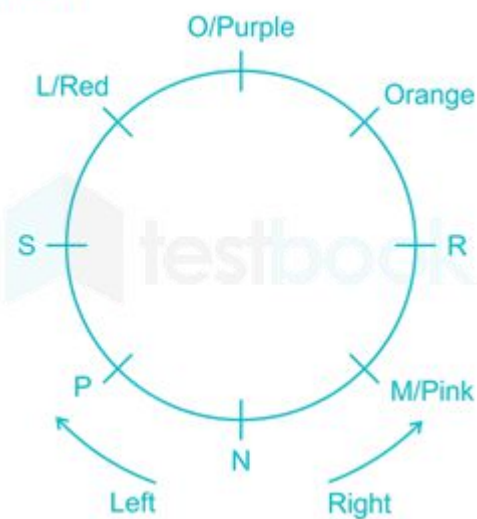


2.a

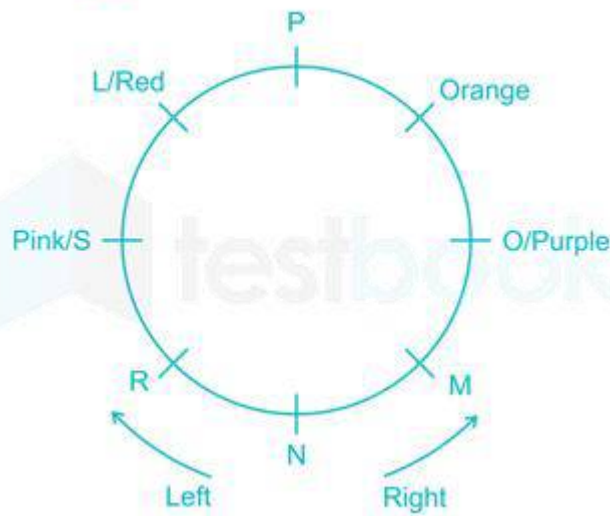


6) O likes Purple colour

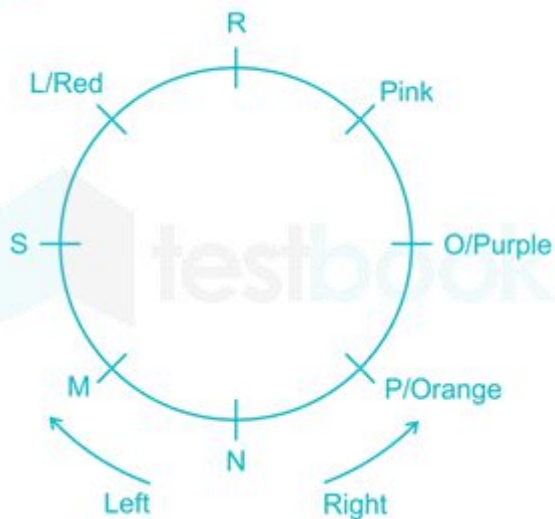
1.a.1



1.a.2

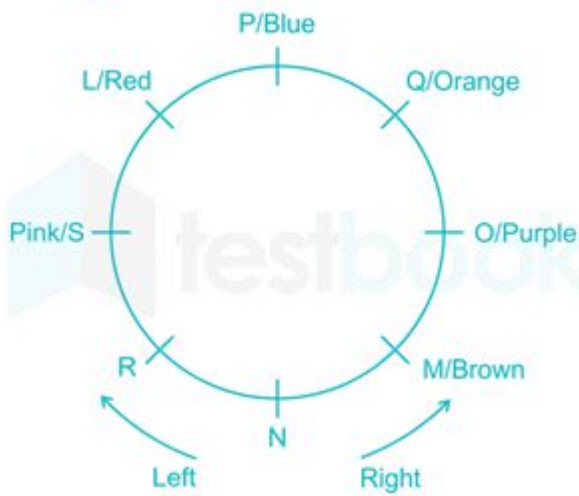


2.a

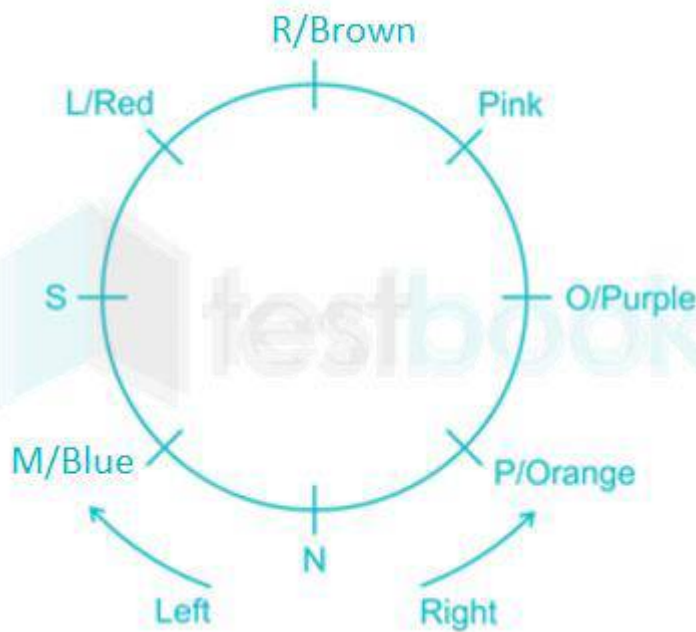


7) The person who likes Brown colour is the third to the left of the person who likes Blue colour. Neither S nor P likes Brown colour. N likes neither Green nor Blue colour.

1.a.2

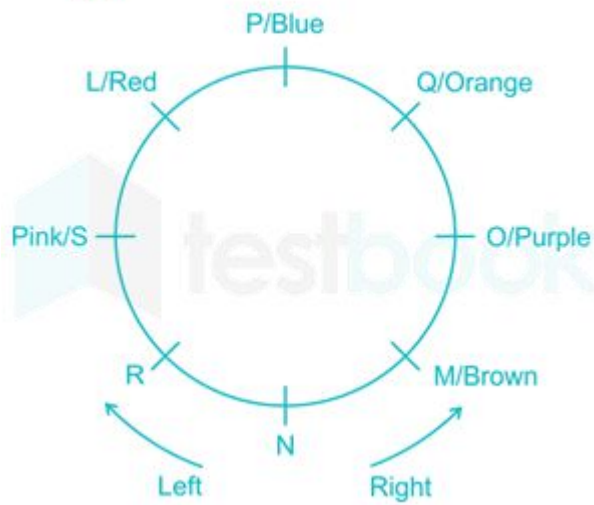


2.a

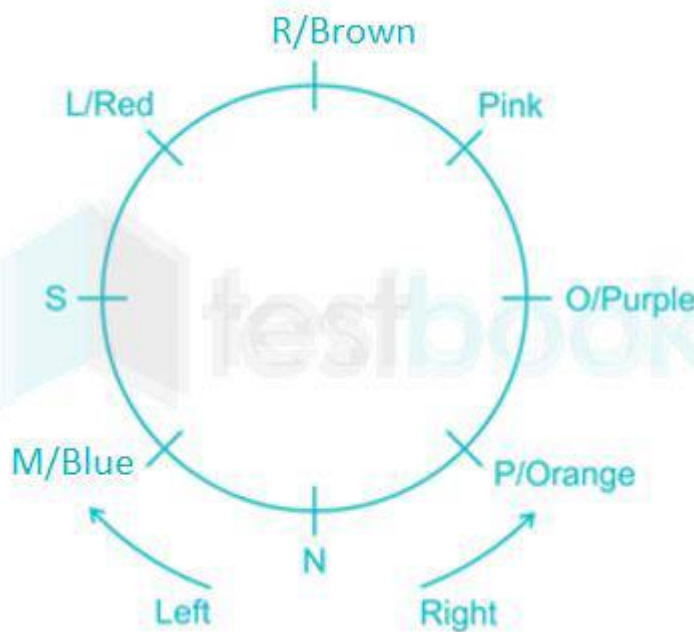


8) So, either orange will be Q or pink will be Q as only Q is remaining.

1.a.2

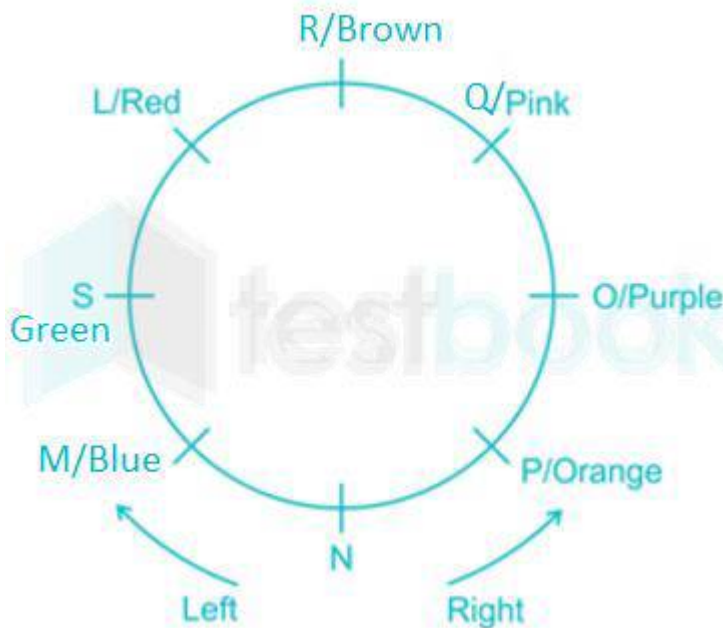


2.a



9) R does not like Black. Thus we get our final arrangement.

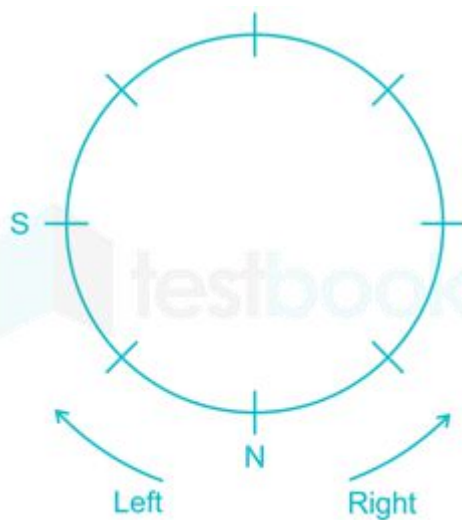
2.a



Hence, Q likes Pink colour.

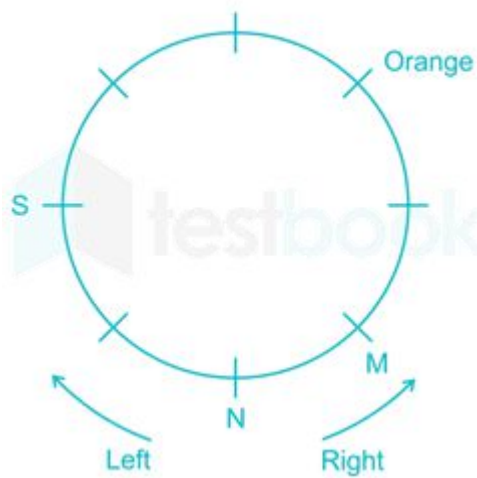
57. According to the given conditions, solving step-wise:-

1) S is sitting second to the left of N.

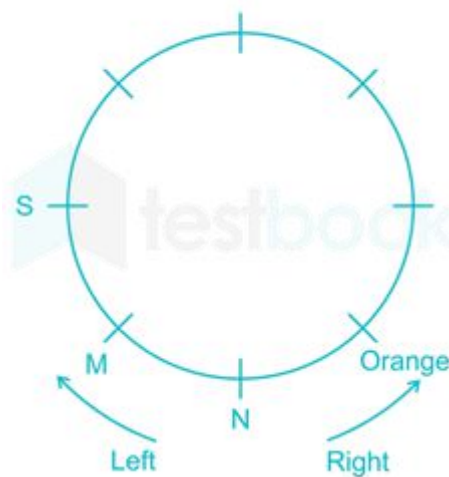


2) There are two persons between S and the person who likes Orange colour and M is the second to the left of the person who likes Orange colour.

1.

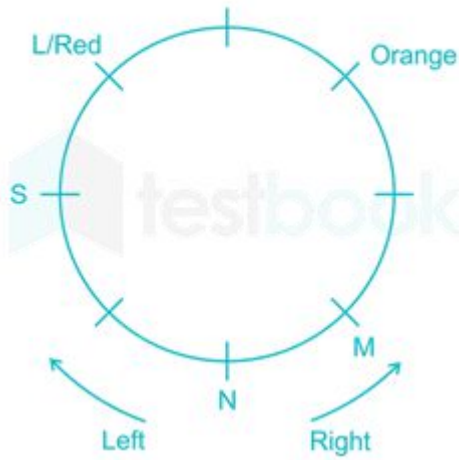


2.

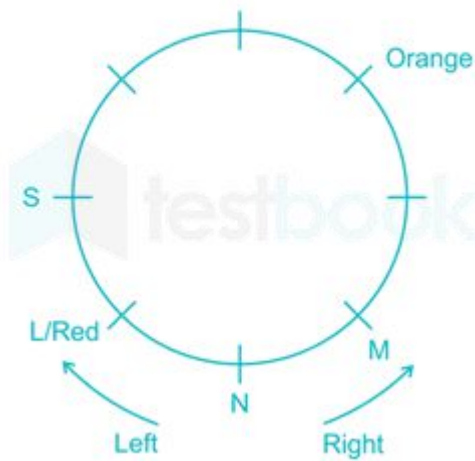


3) L is the immediate neighbour of S. L likes Red colour. So we have following possibilities.

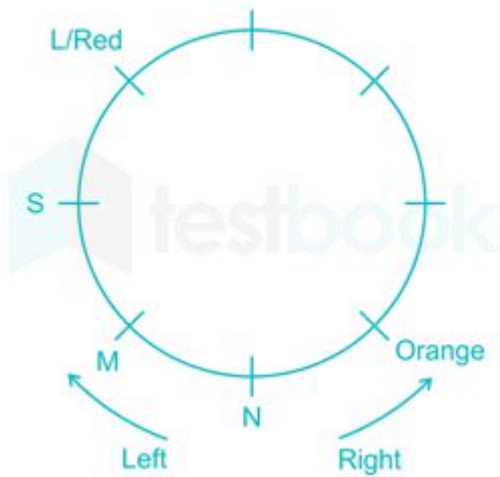
1.a



1.b

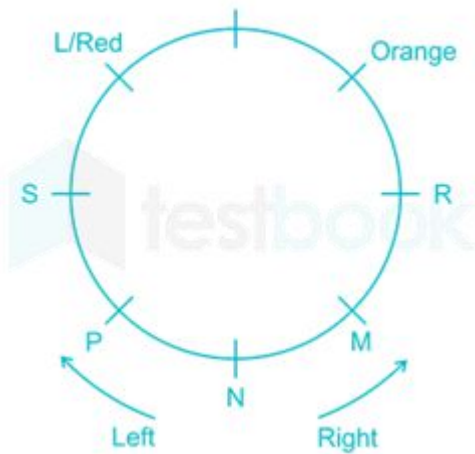


2.a

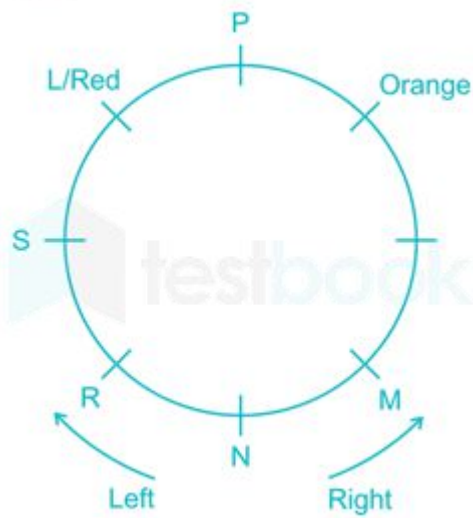


4) R is the third to the right of P.

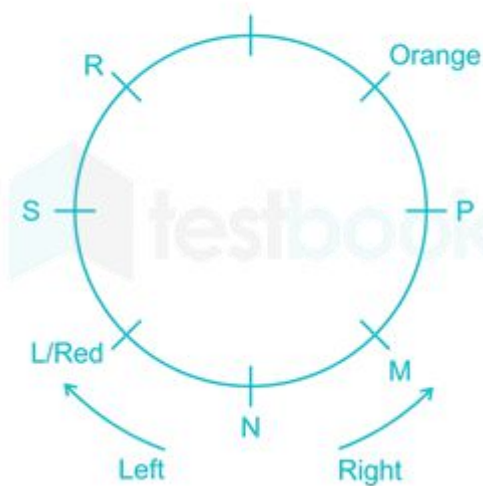
1.a.1



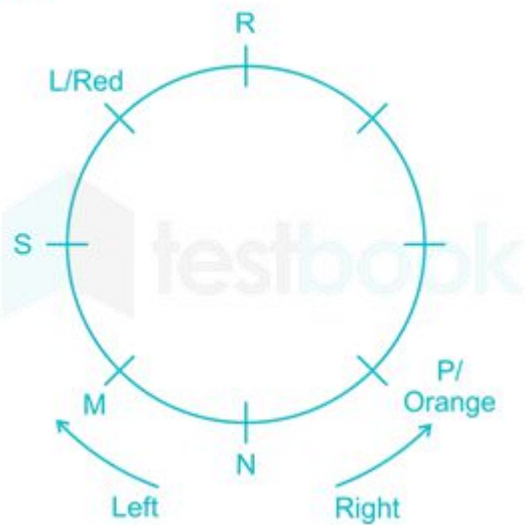
1.a.2



1.b



2.a

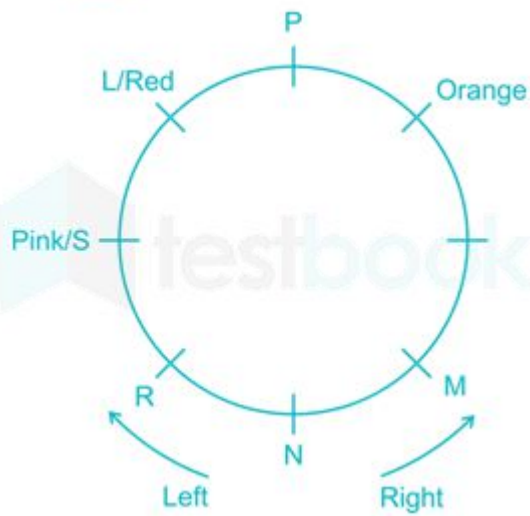


5) The person who likes Pink colour is second to the right of P.

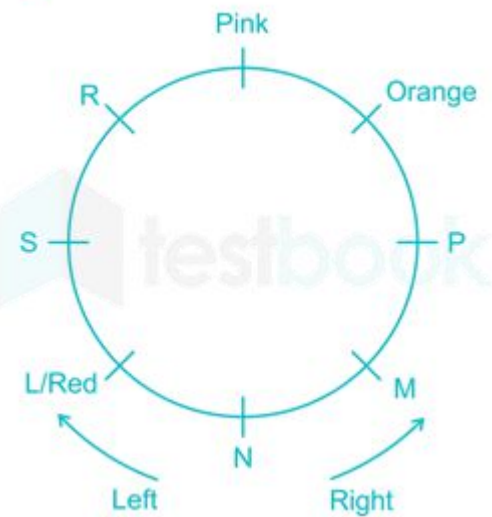
1.a.1



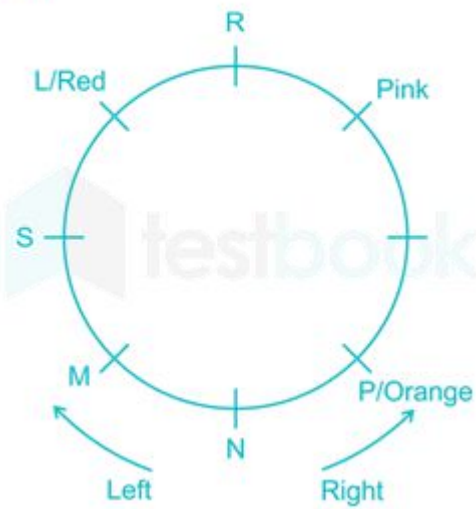
1.a.2



1.b

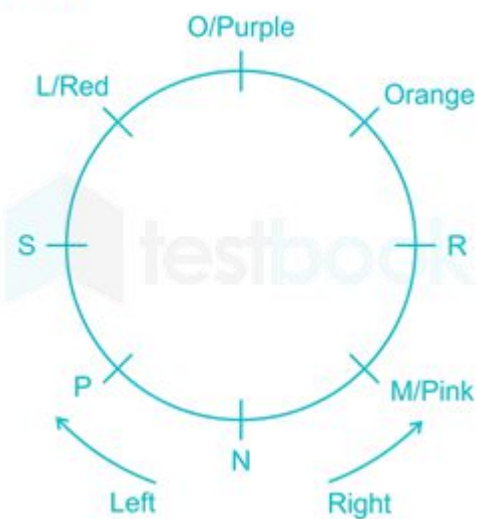


2.a

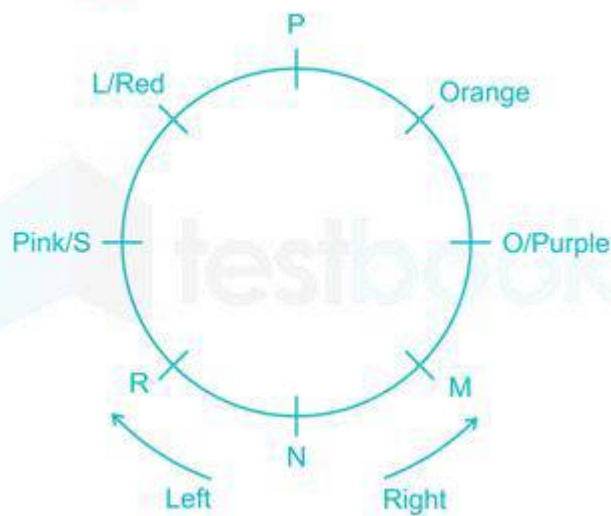


6) O likes Purple colour

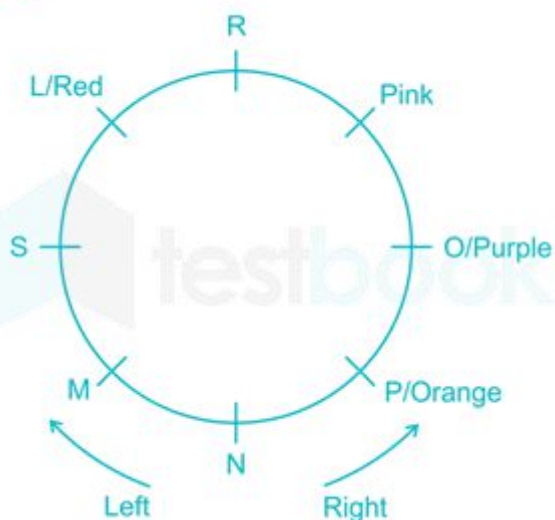
1.a.1



1.a.2

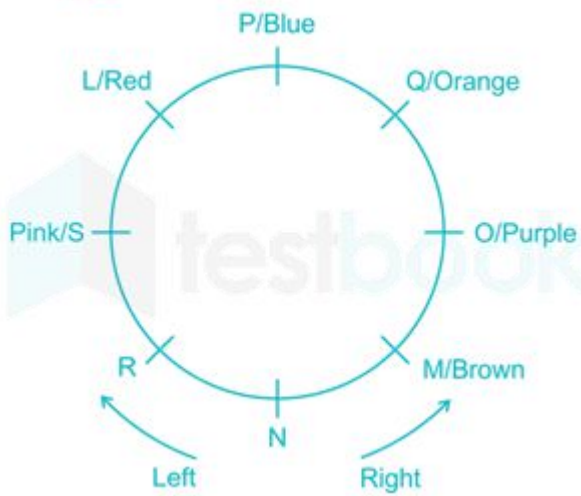


2.a

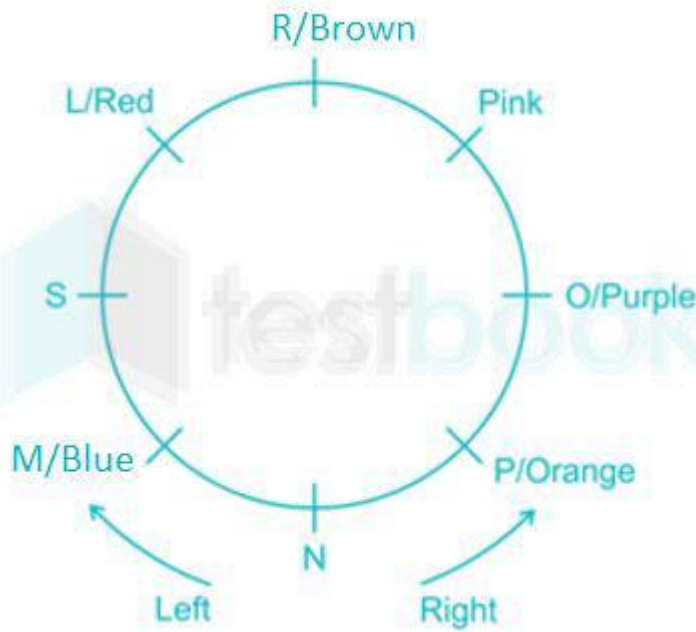


7) The person who likes Brown colour is the third to the left of the person who likes Blue colour. Neither S nor P likes Brown colour. N likes neither Green nor Blue colour.

1.a.2

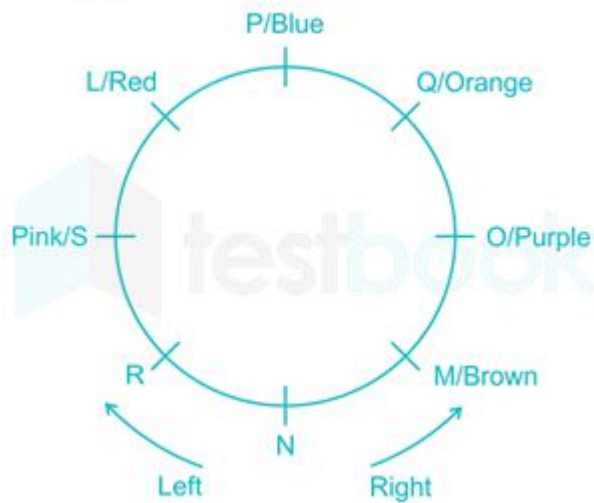


2.a

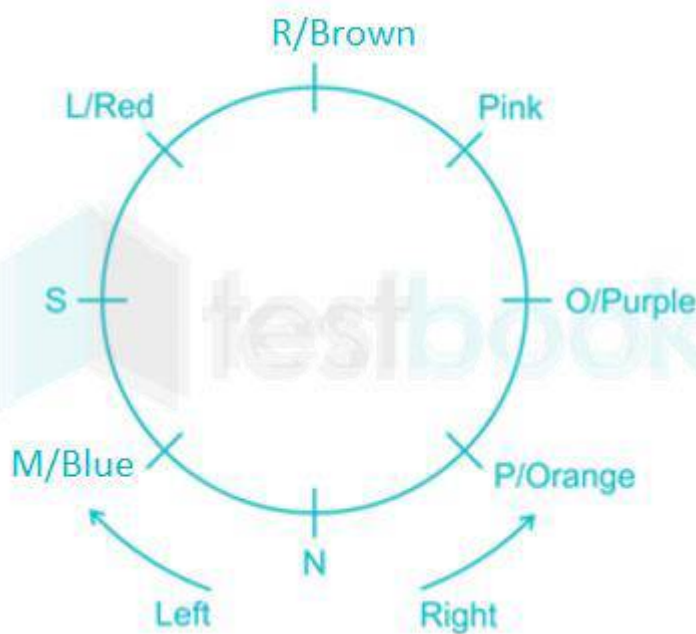


8) So, either orange will be Q or pink will be Q as only Q is remaining.

1.a.2

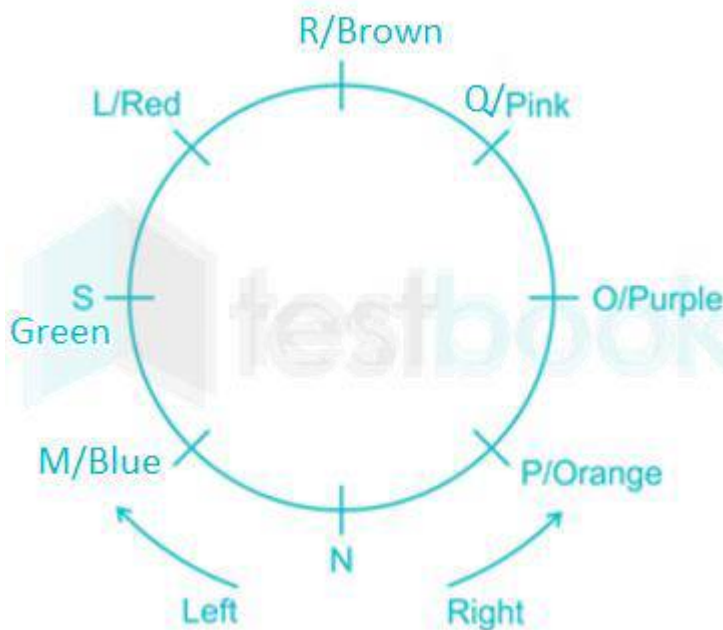


2.a



9) R does not like Black. Thus we get our final arrangement.

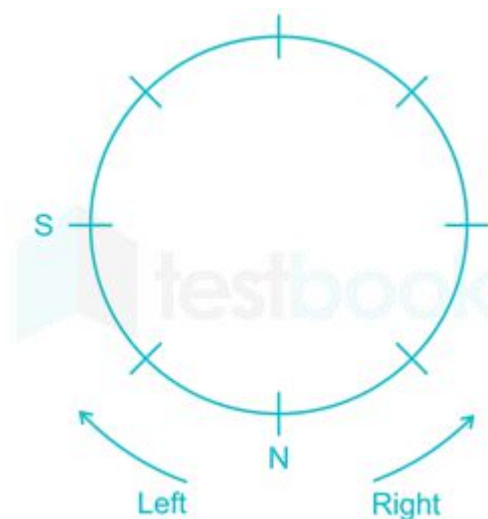
2.a



Q is second to the right of the person who likes Orange colour.

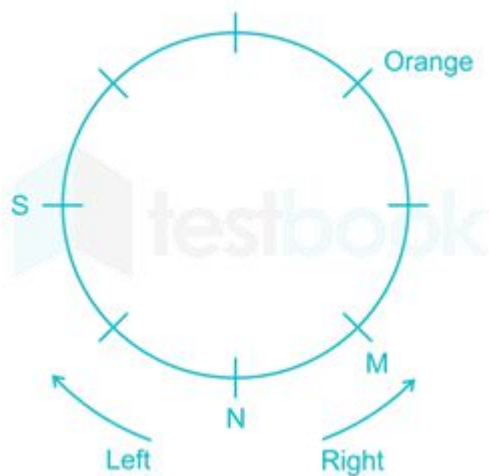
58. According to the given conditions, solving step-wise:-

1) S is sitting second to the left of N.

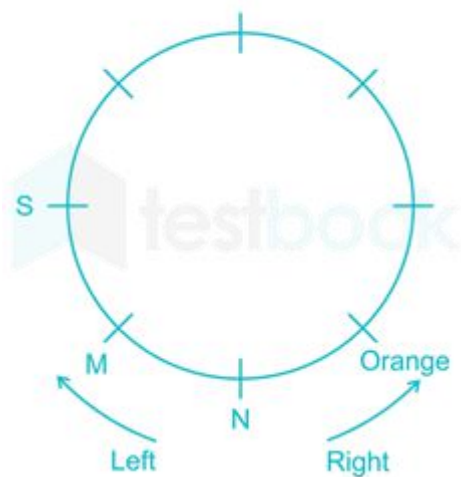


2) There are two persons between S and the person who likes Orange colour and M is the second to the left of the person who likes Orange colour.

1.

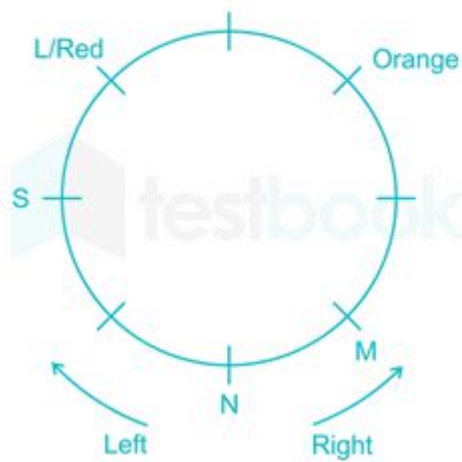


2.

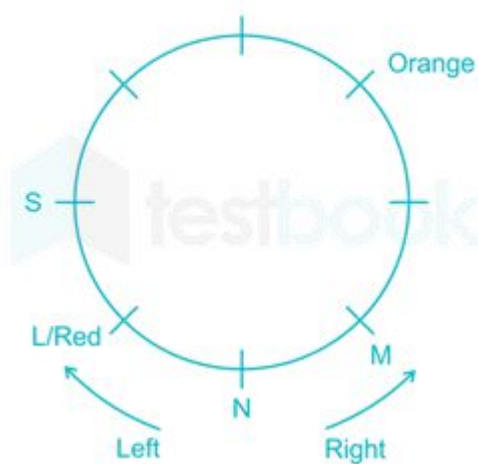


3) L is the immediate neighbour of S. L likes Red colour. So we have following possibilities.

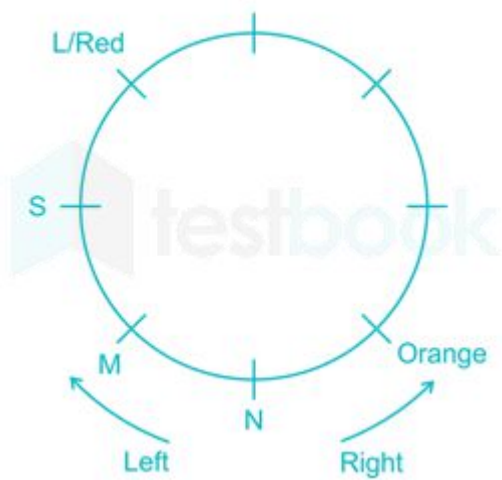
1.a



1.b

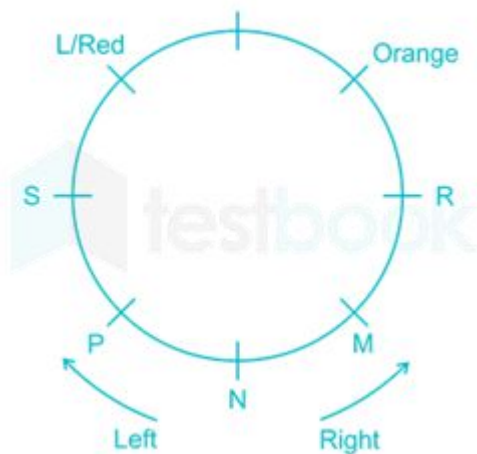


2.a

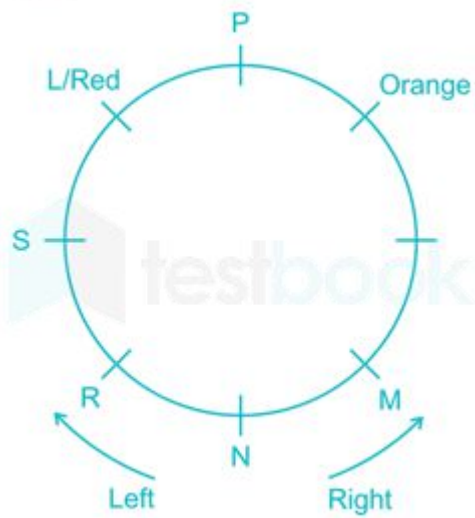


4) R is the third to the right of P.

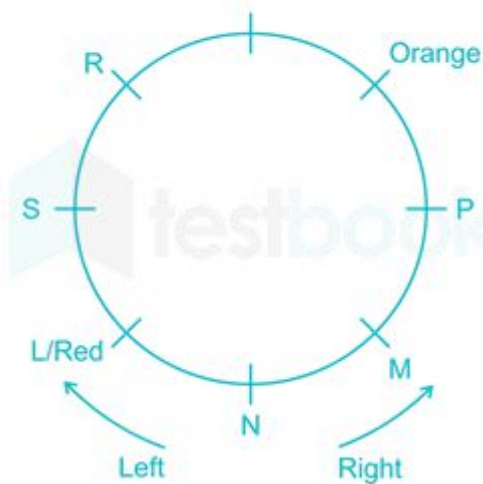
1.a.1



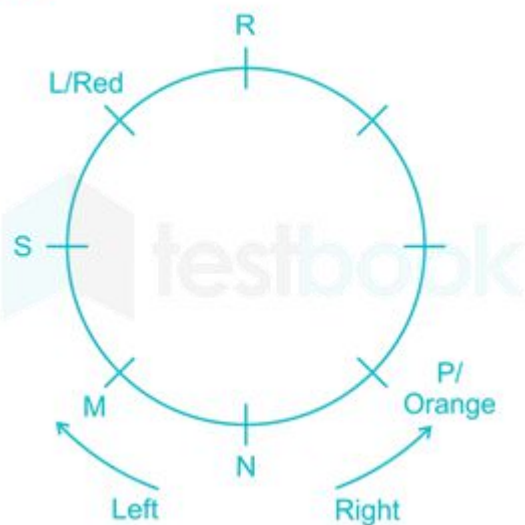
1.a.2



1.b

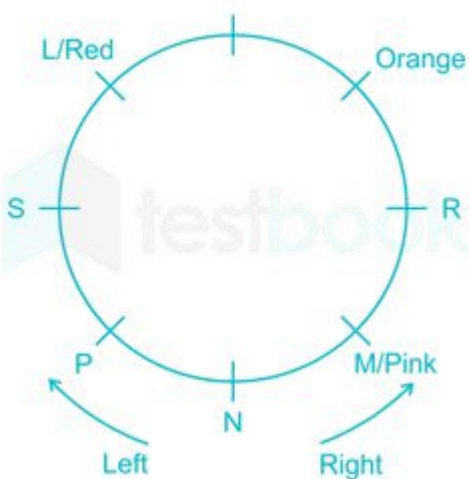


2.a

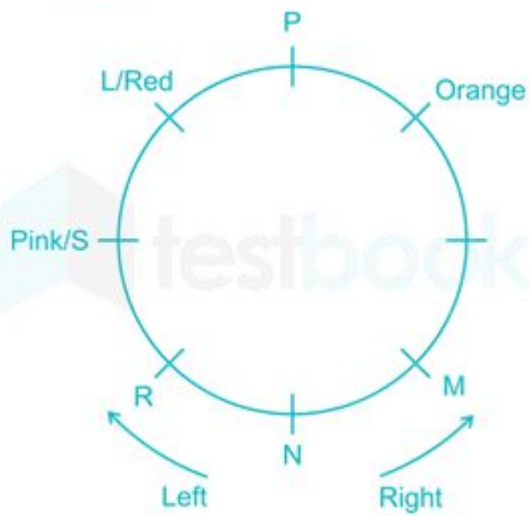


5) The person who likes Pink colour is second to the right of P.

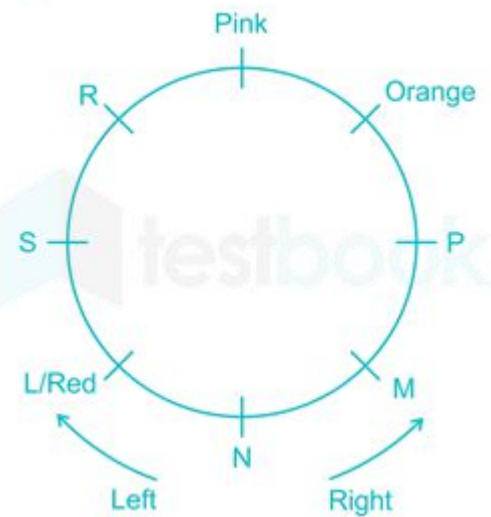
1.a.1



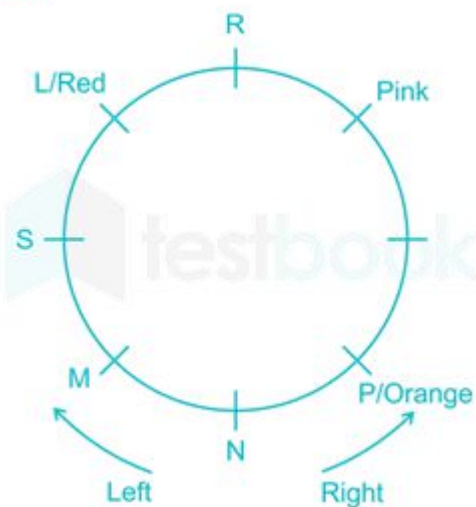
1.a.2



1.b

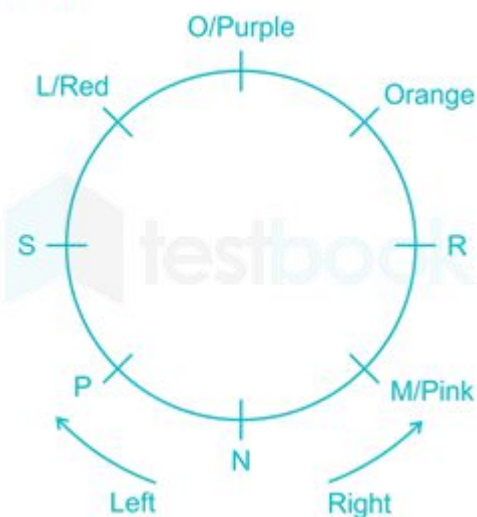


2.a

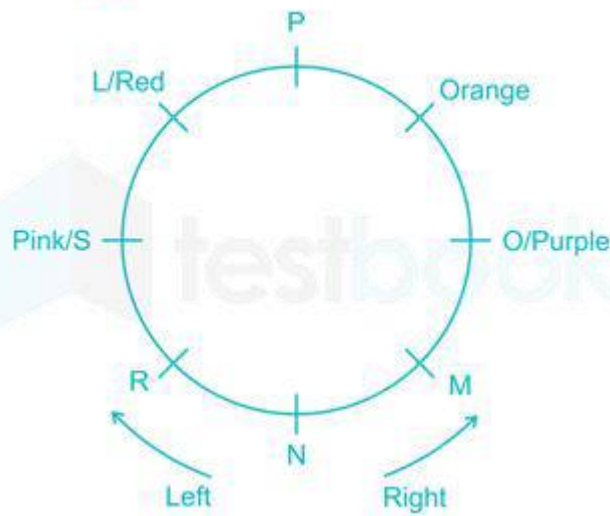


6) O likes Purple colour

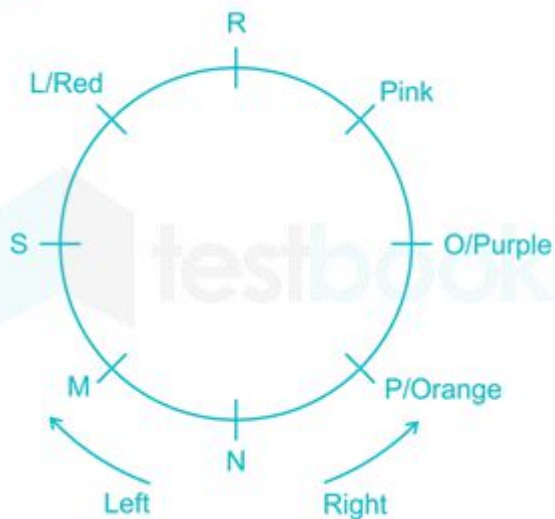
1.a.1



1.a.2

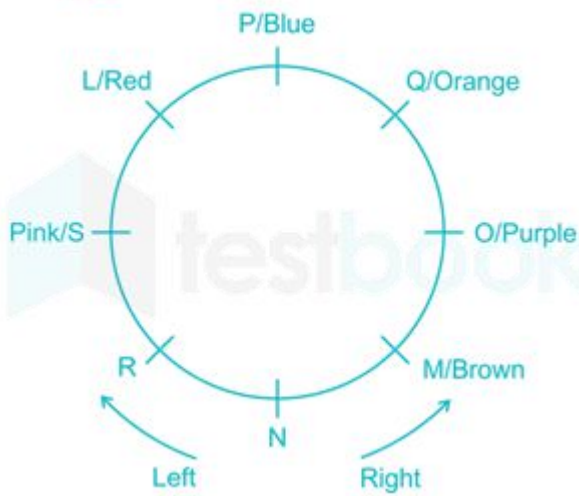


2.a

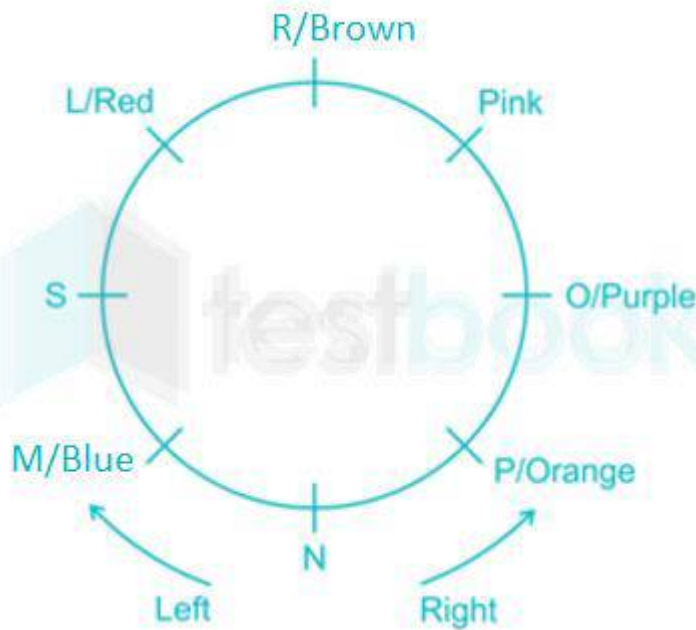


7) The person who likes Brown colour is the third to the left of the person who likes Blue colour. Neither S nor P likes Brown colour. N likes neither Green nor Blue colour.

1.a.2

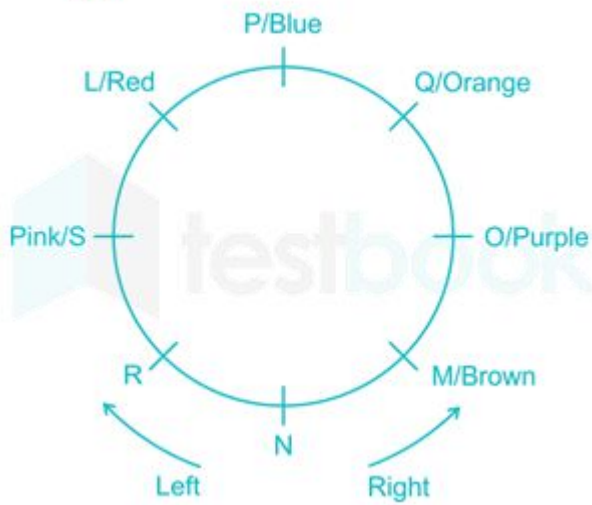


2.a

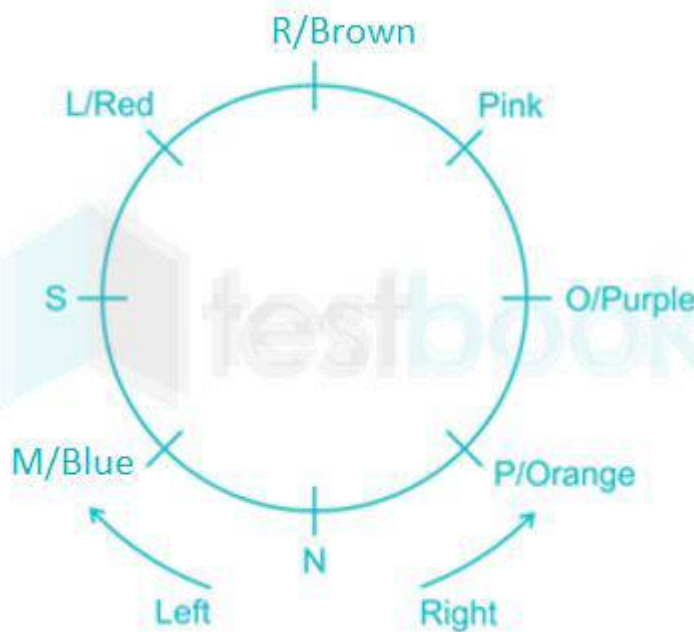


8) So, either orange will be Q or pink will be Q as only Q is remaining.

1.a.2

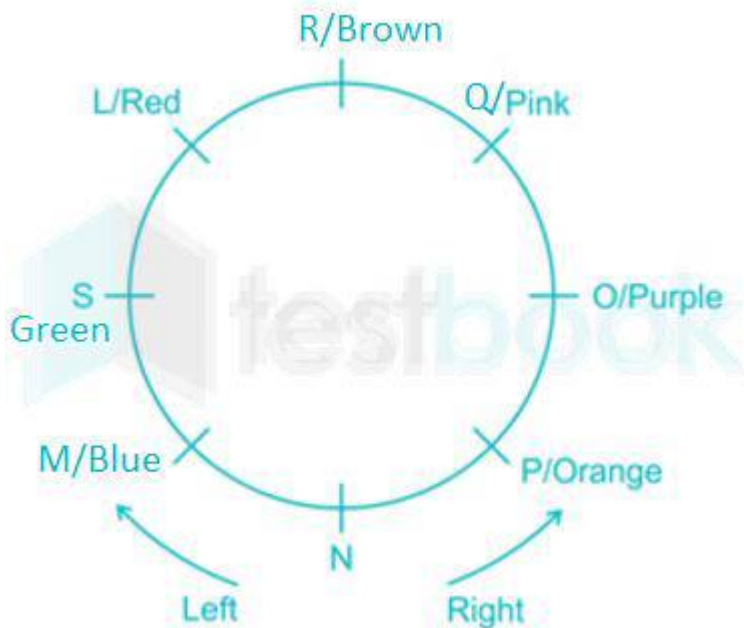


2.a



9) R does not like Black. Thus we get our final arrangement.

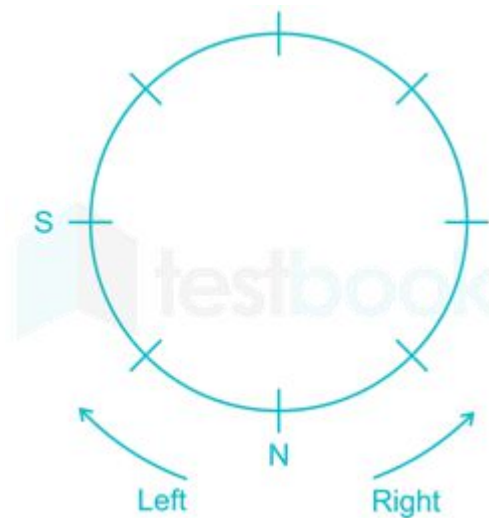
2.a



Hence, S likes Green colour.

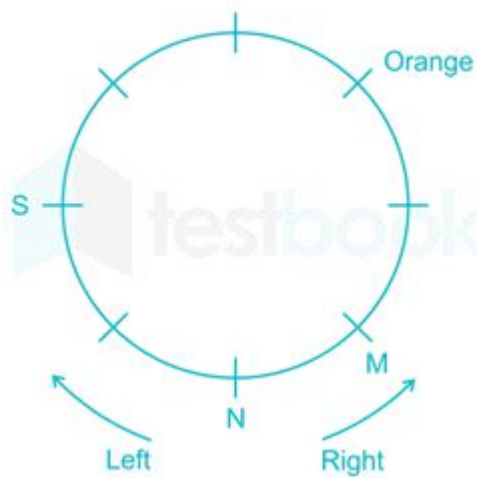
59. According to the given conditions, solving step-wise:-

1) S is sitting second to the left of N.

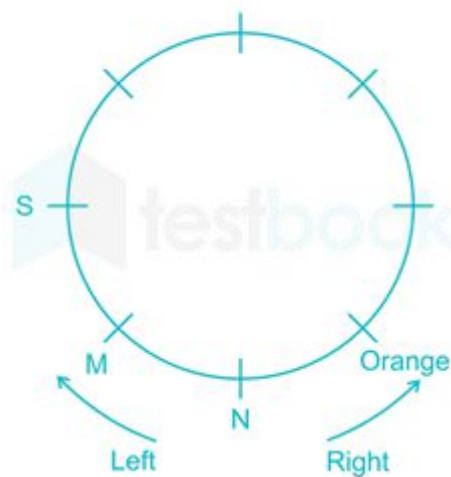


2) There are two persons between S and the person who likes Orange colour and M is the second to the left of the person who likes Orange colour.

1.

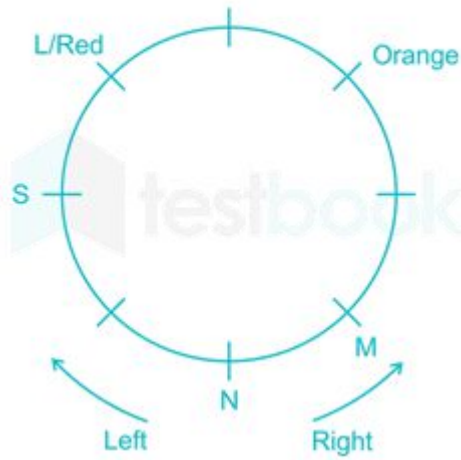


2.

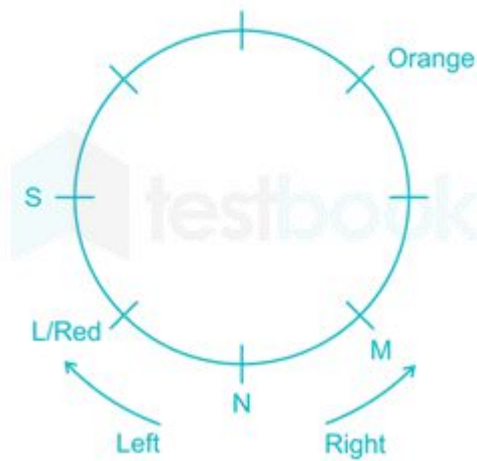


3) L is the immediate neighbour of S. L likes Red colour. So we have following possibilities.

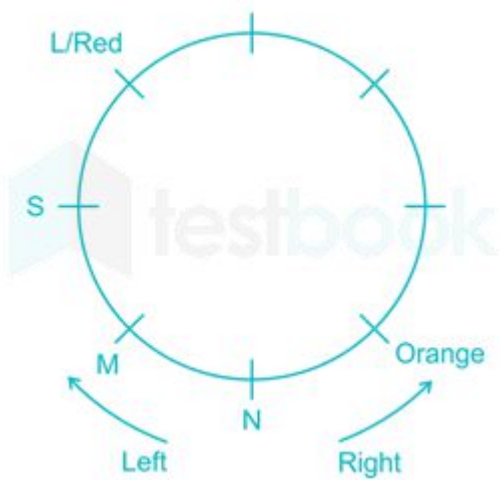
1.a



1.b

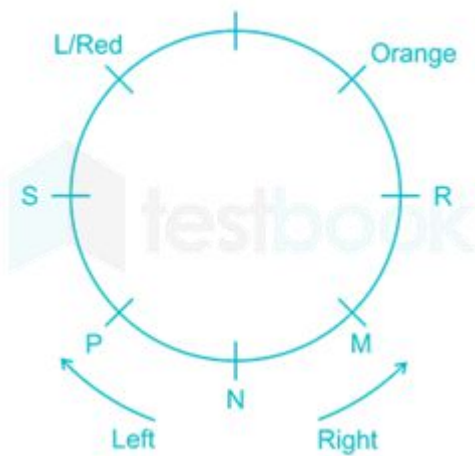


2.a

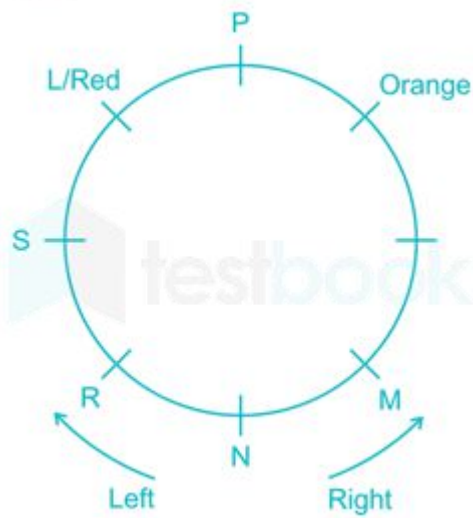


4) R is the third to the right of P.

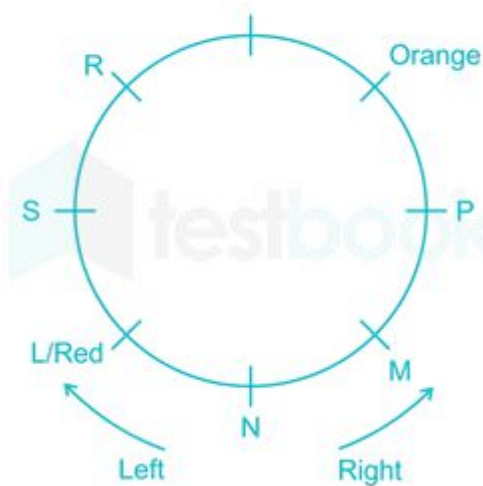
1.a.1



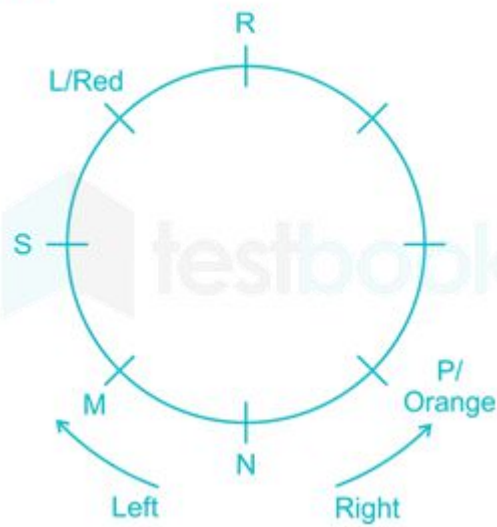
1.a.2



1.b

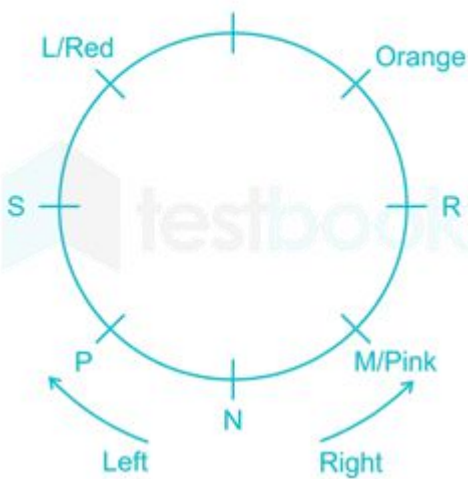


2.a

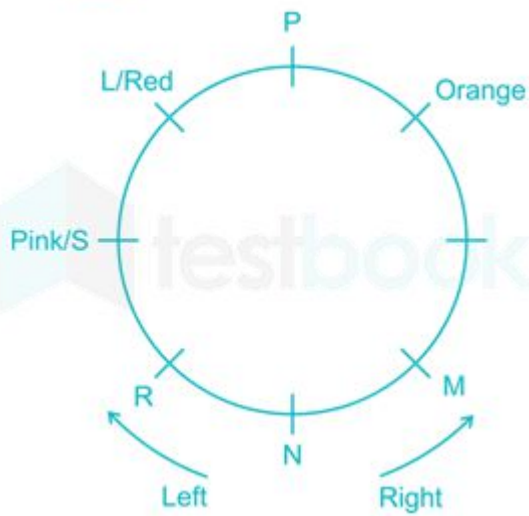


5) The person who likes Pink colour is second to the right of P.

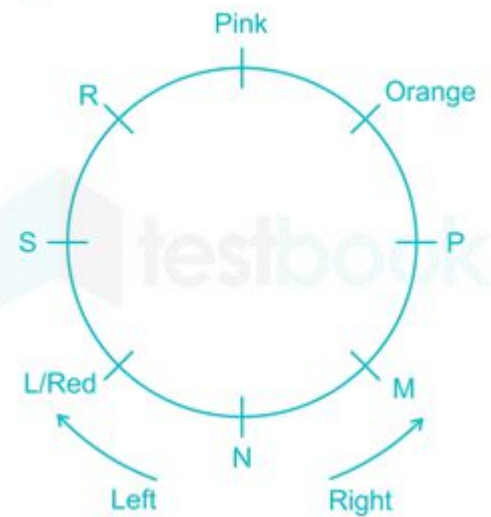
1.a.1



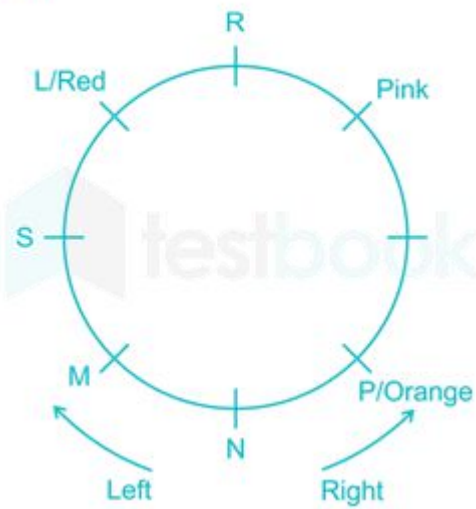
1.a.2



1.b

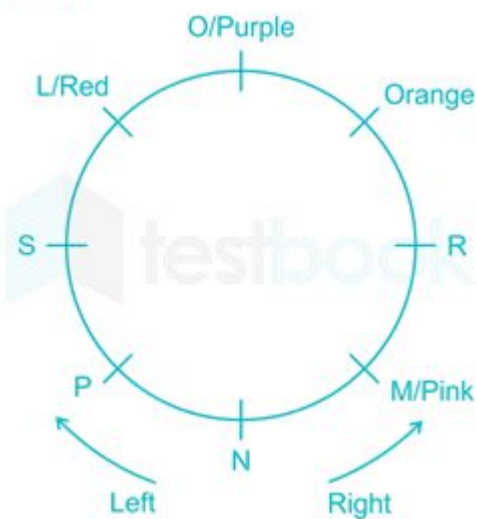


2.a

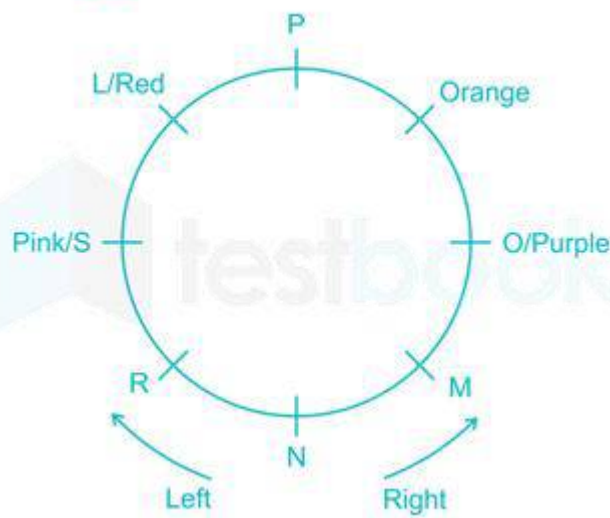


6) O likes Purple colour

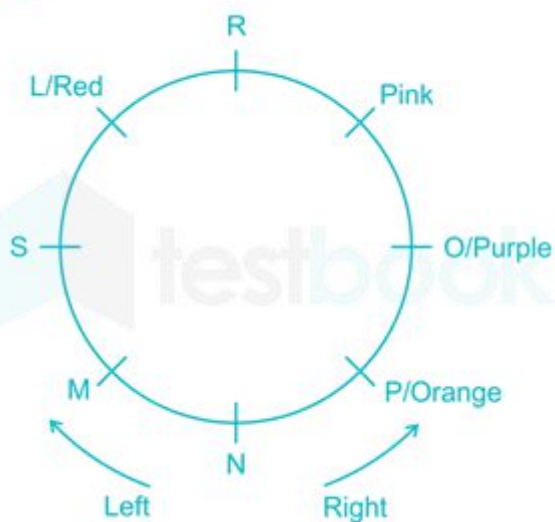
1.a.1



1.a.2

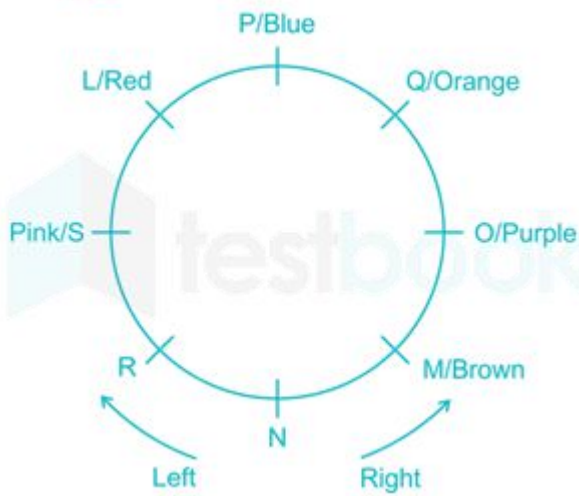


2.a

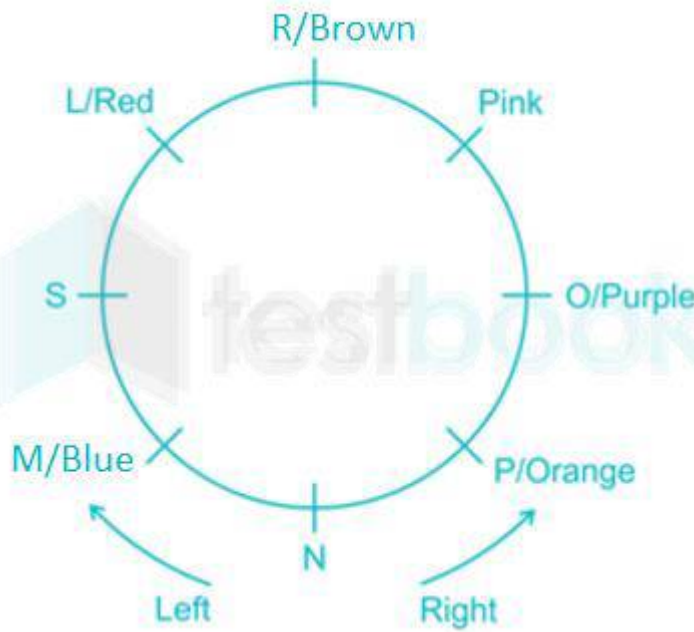


7) The person who likes Brown colour is the third to the left of the person who likes Blue colour. Neither S nor P likes Brown colour. N likes neither Green nor Blue colour.

1.a.2

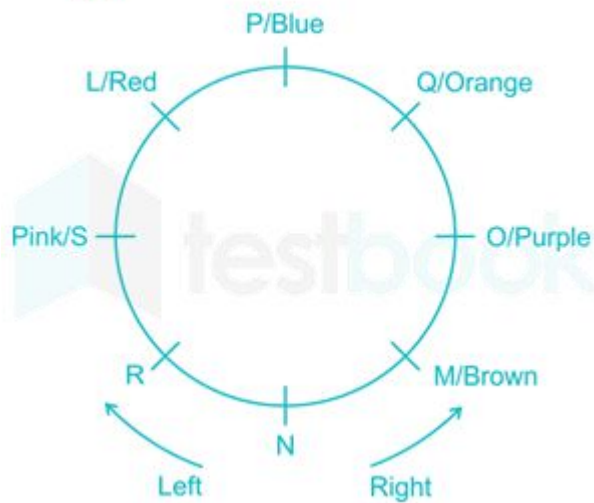


2.a

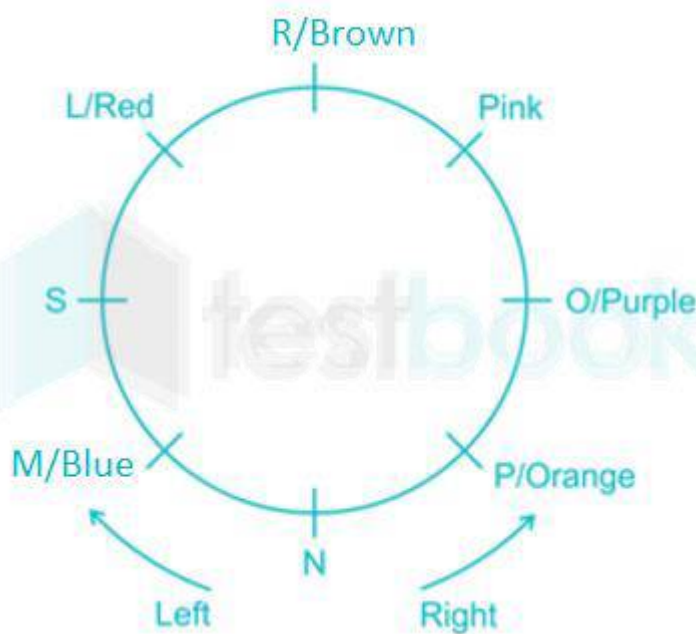


8) So, either orange will be Q or pink will be Q as only Q is remaining.

1.a.2

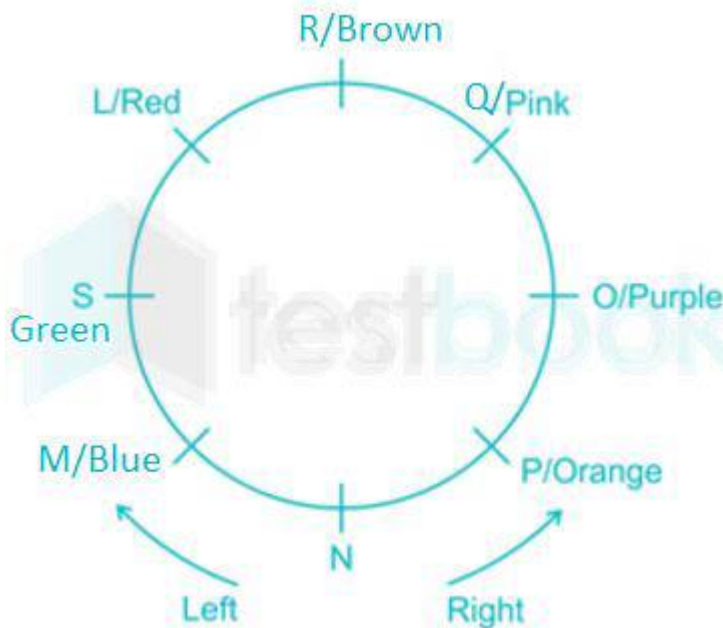


2.a



9) R does not like Black. Thus we get our final arrangement.

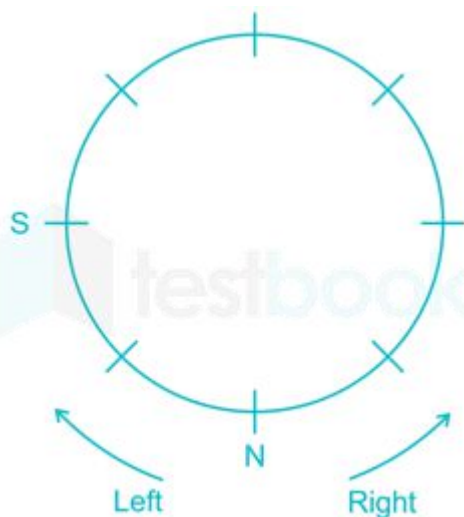
2.a



Hence, R is sitting exactly in the middle of the person who likes Red colour and Q.

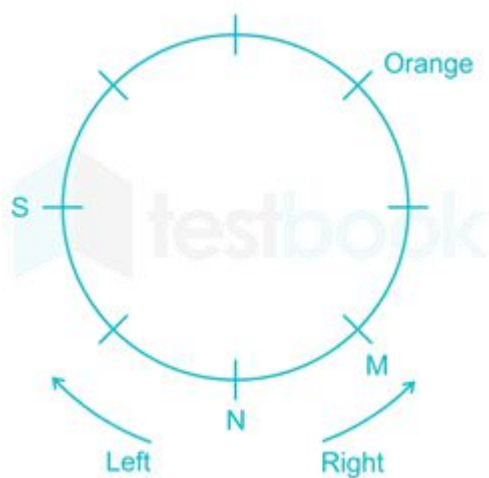
60. According to the given conditions, solving step-wise:-

1) S is sitting second to the left of N.

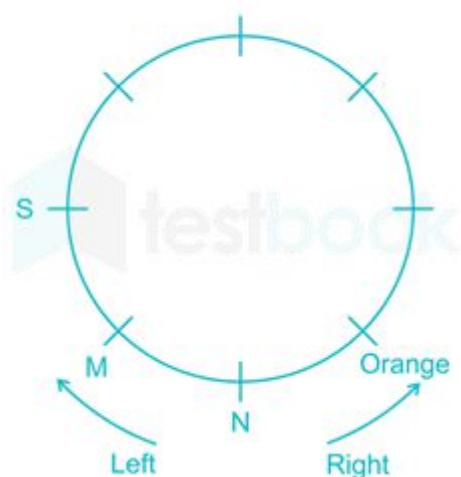


2) There are two persons between S and the person who likes Orange colour and M is the second to the left of the person who likes Orange colour.

1.

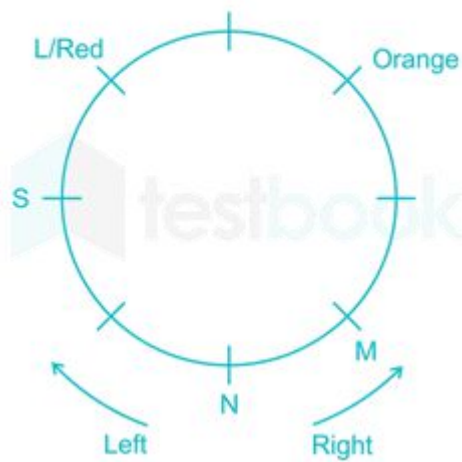


2.

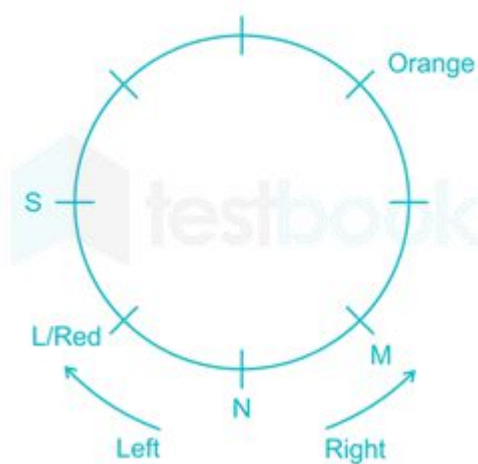


3) L is the immediate neighbour of S. L likes Red colour. So we have following possibilities.

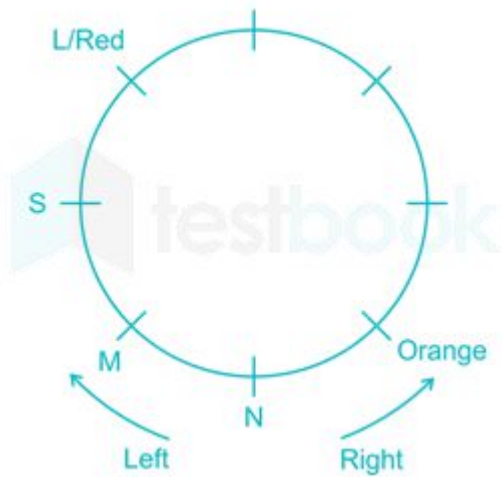
1.a



1.b

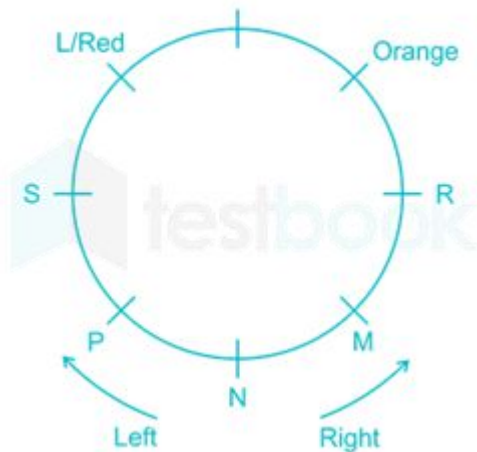


2.a

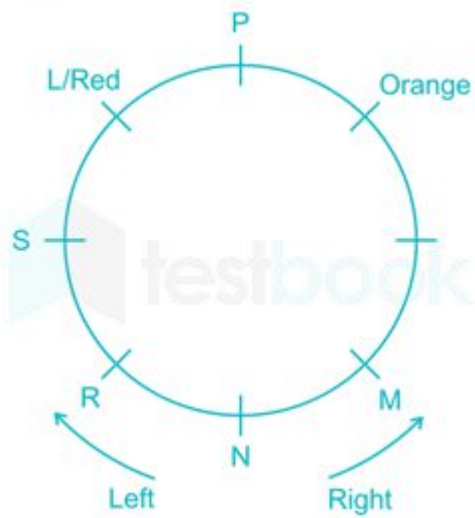


4) R is the third to the right of P.

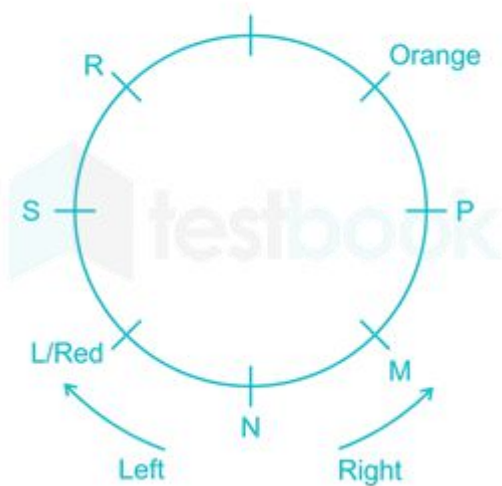
1.a.1



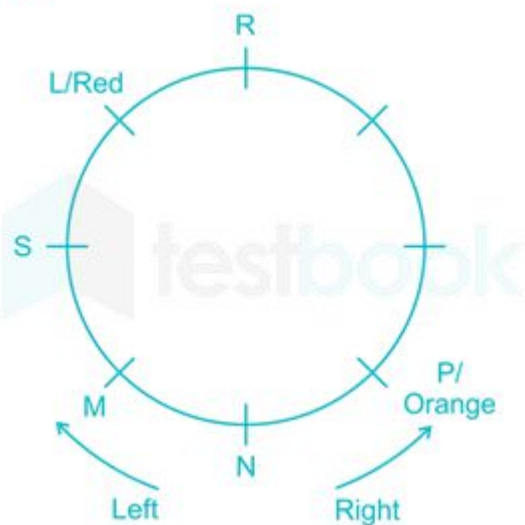
1.a.2



1.b

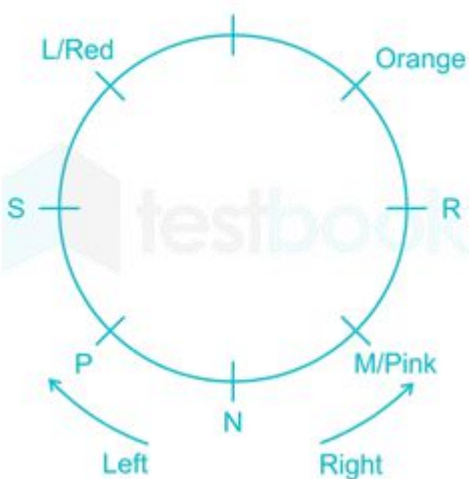


2.a

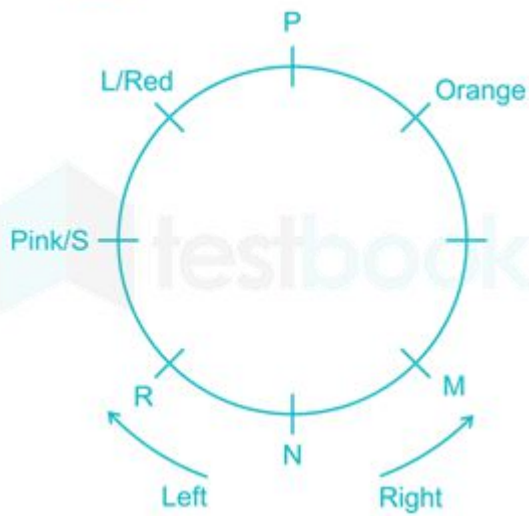


5) The person who likes Pink colour is second to the right of P.

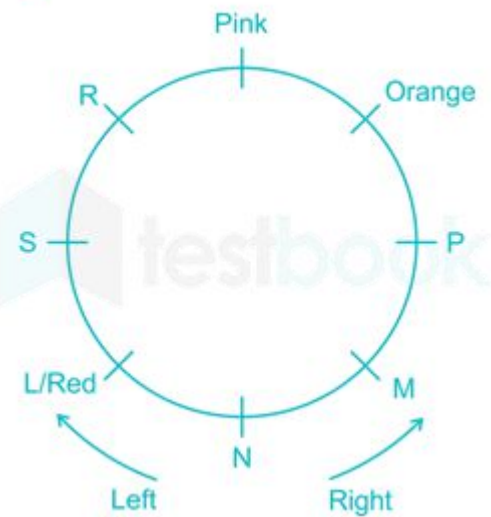
1.a.1



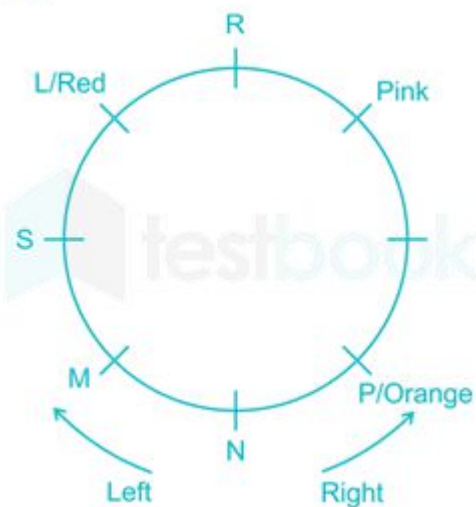
1.a.2



1.b

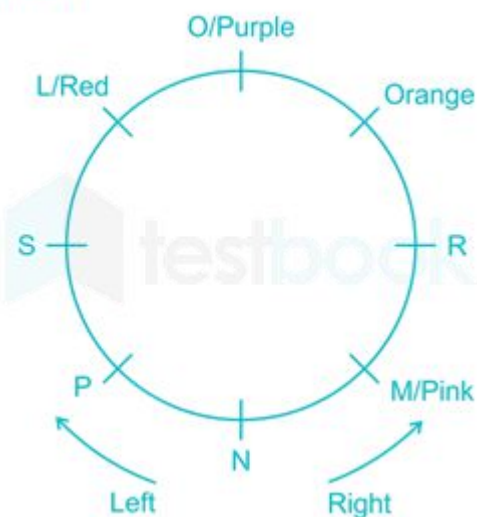


2.a

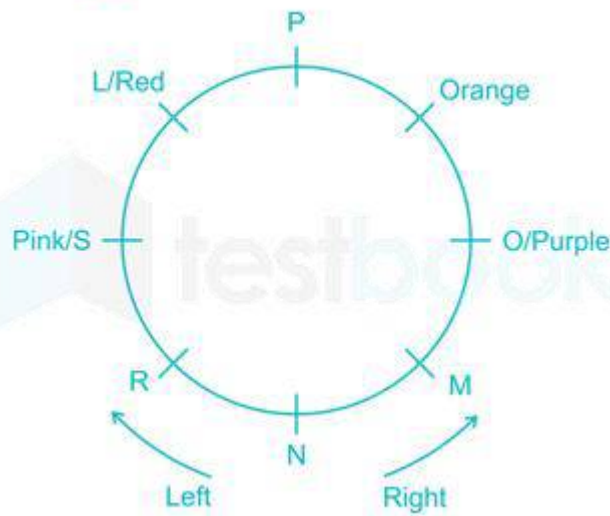


6) O likes Purple colour

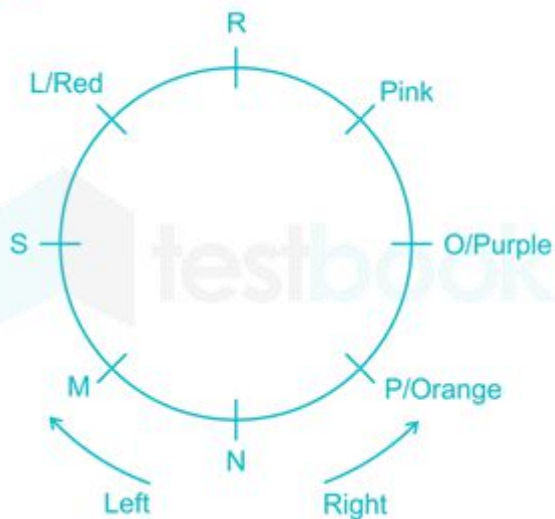
1.a.1



1.a.2

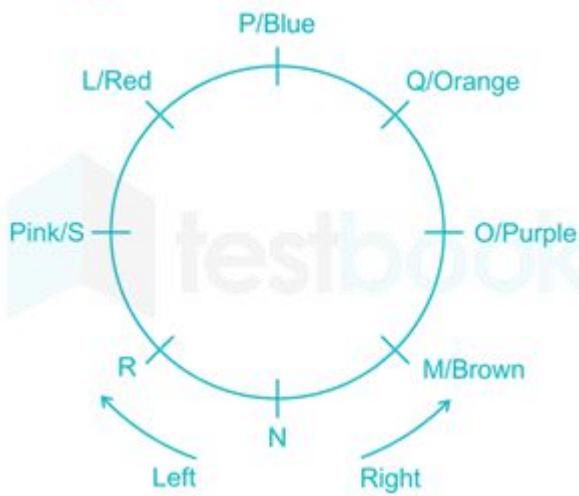


2.a

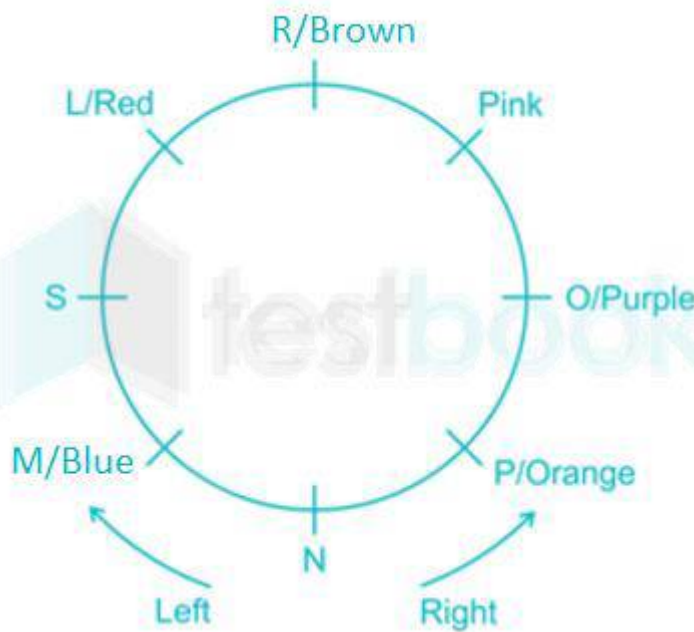


7) The person who likes Brown colour is the third to the left of the person who likes Blue colour. Neither S nor P likes Brown colour. N likes neither Green nor Blue colour.

1.a.2

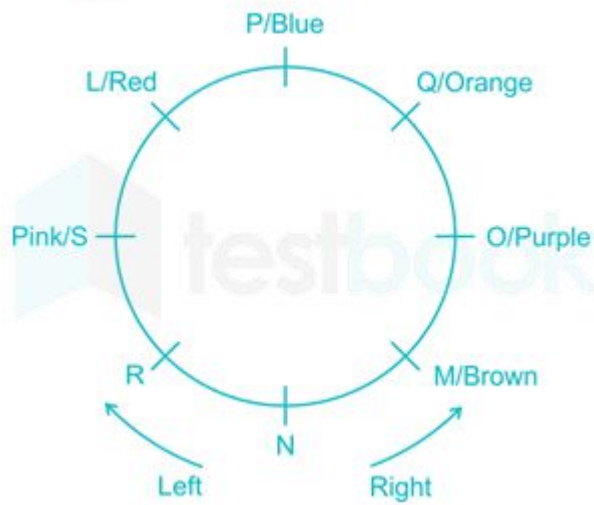


2.a

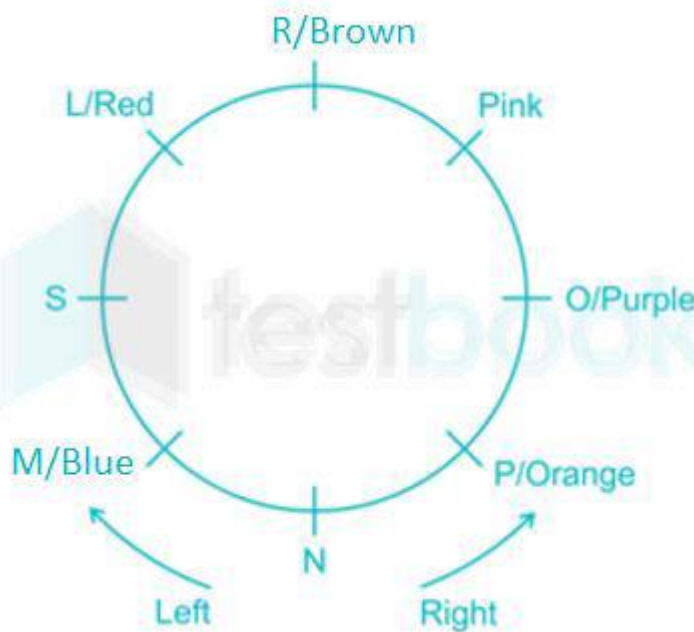


8) So, either orange will be Q or pink will be Q as only Q is remaining.

1.a.2

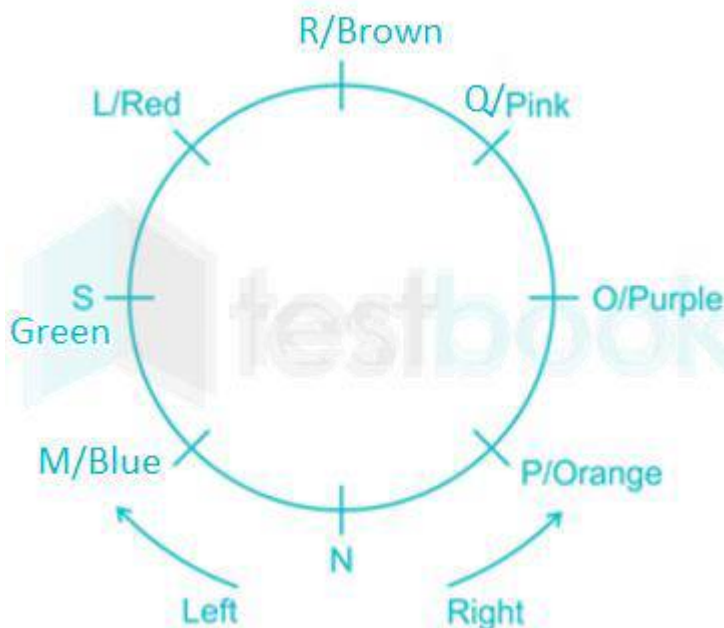


2.a



9) R does not like Black. Thus we get our final arrangement.

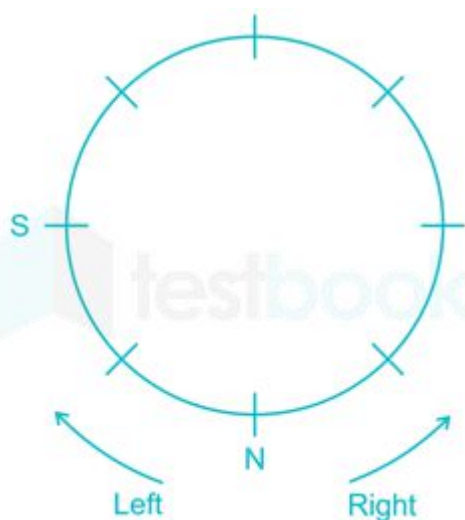
2.a



Hence, immediate neighbours of M are N and S.

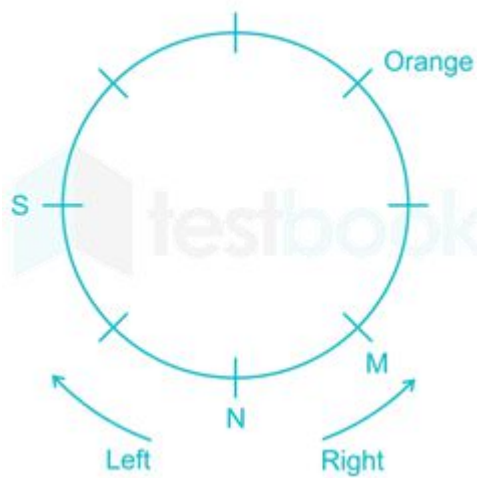
61. According to the given conditions, solving step-wise:-

1) S is sitting second to the left of N.

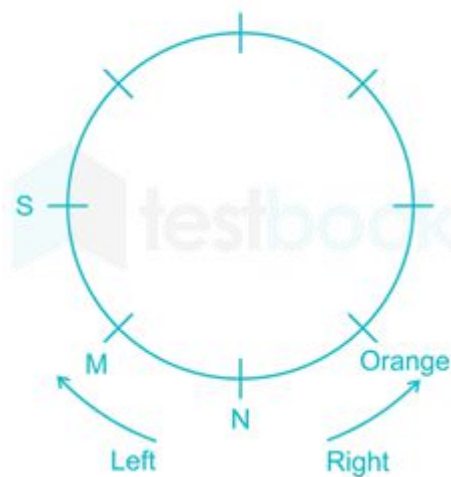


2) There are two persons between S and the person who likes Orange colour and M is the second to the left of the person who likes Orange colour.

1.

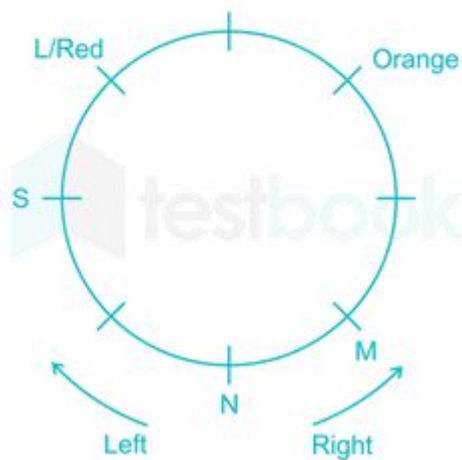


2.

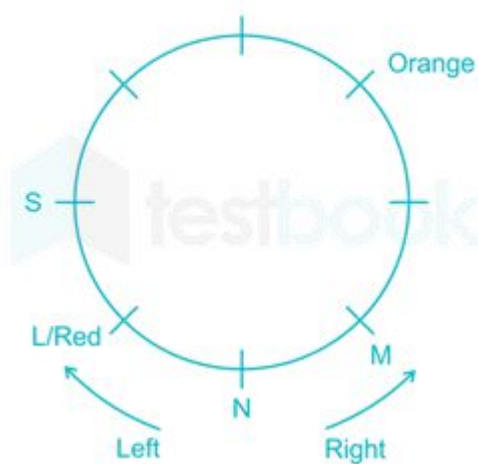


3) L is the immediate neighbour of S. L likes Red colour. So we have following possibilities.

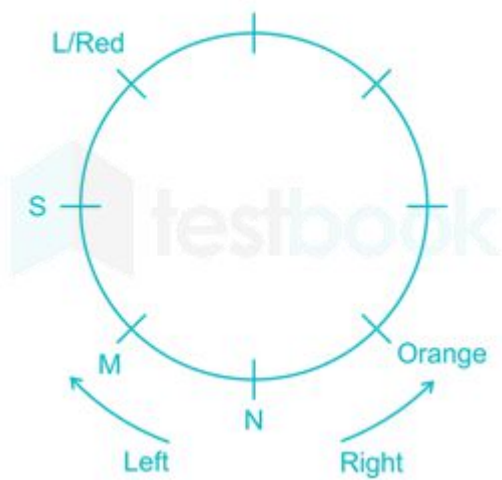
1.a



1.b

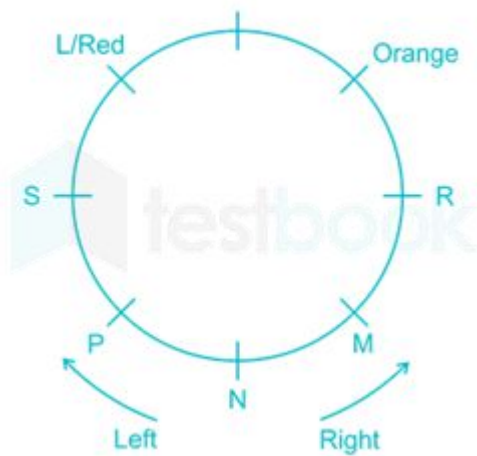


2.a

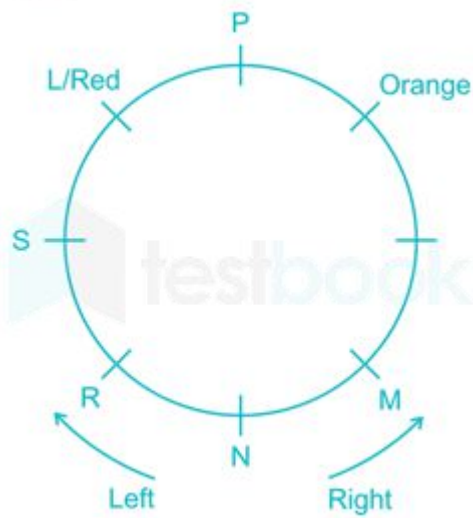


4) R is the third to the right of P.

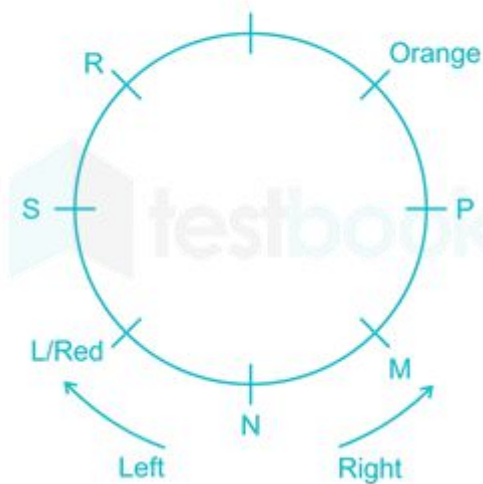
1.a.1



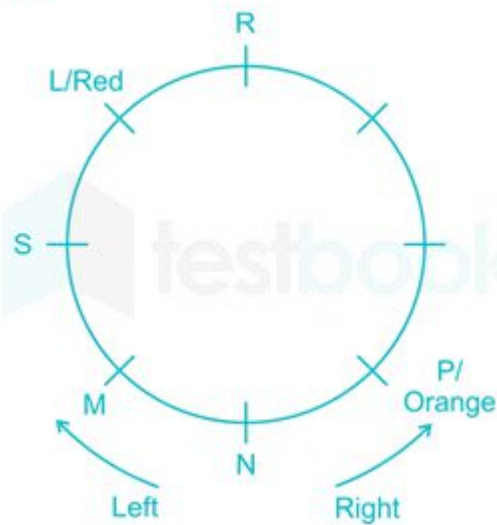
1.a.2



1.b

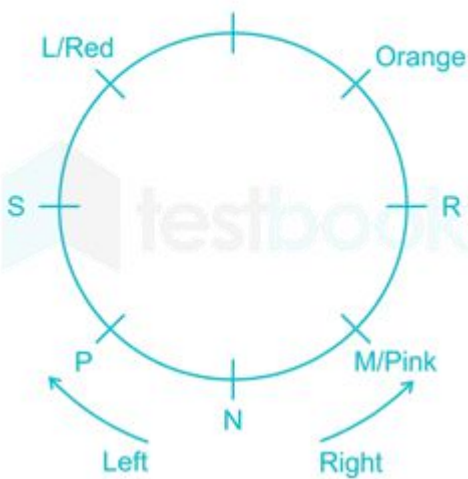


2.a

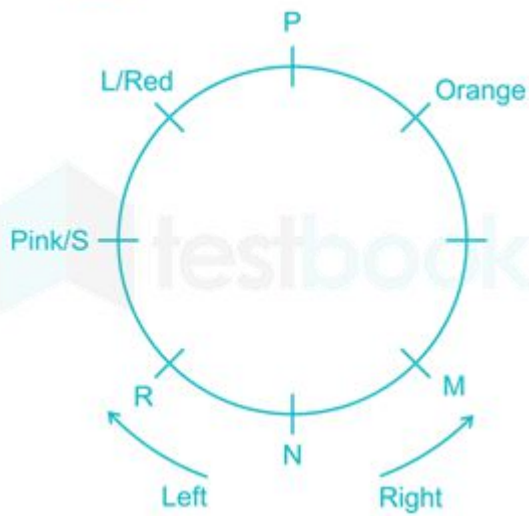


5) The person who likes Pink colour is second to the right of P.

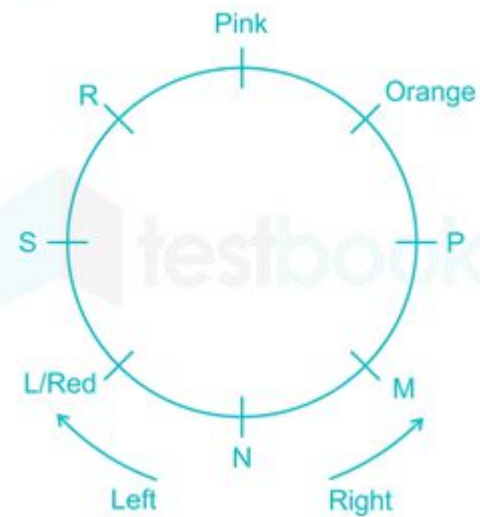
1.a.1



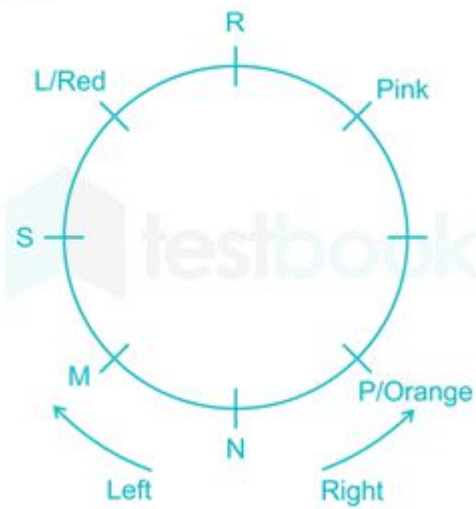
1.a.2



1.b

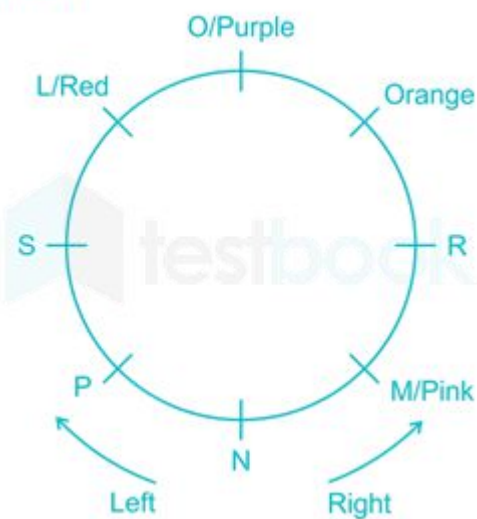


2.a

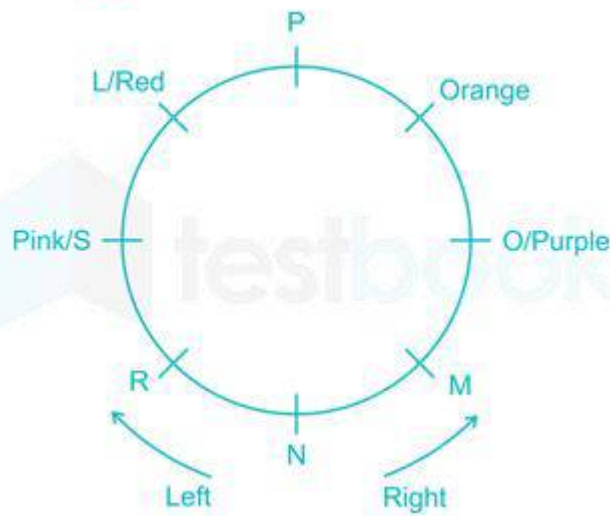


6) O likes Purple colour

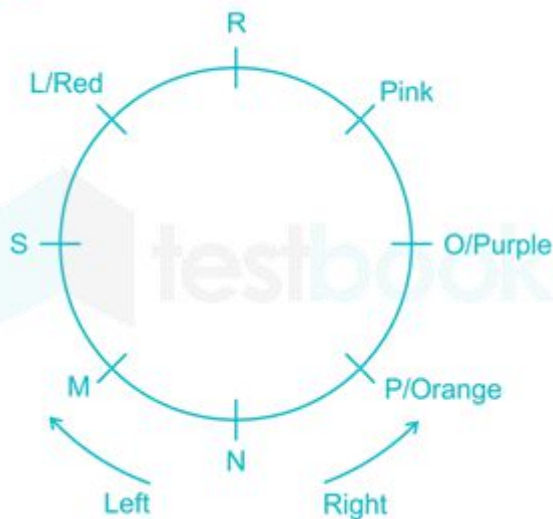
1.a.1



1.a.2

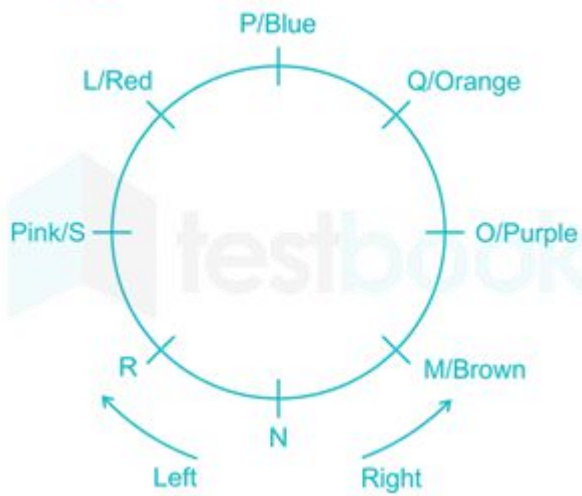


2.a

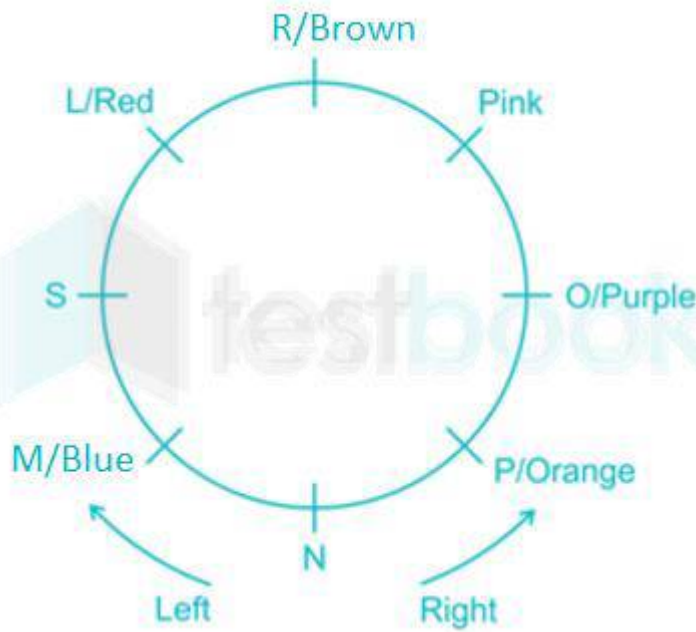


7) The person who likes Brown colour is the third to the left of the person who likes Blue colour. Neither S nor P likes Brown colour. N likes neither Green nor Blue colour.

1.a.2

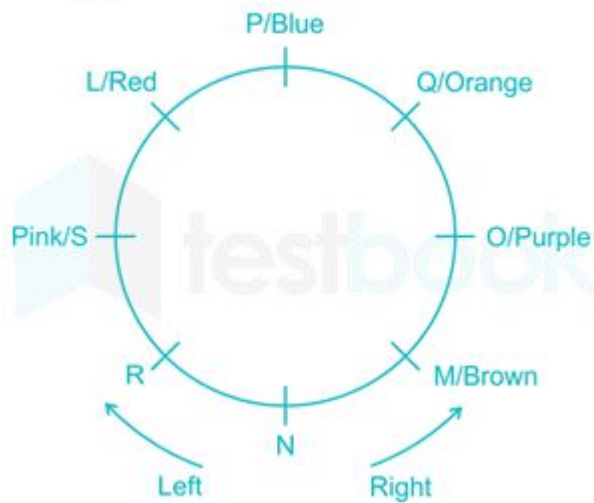


2.a

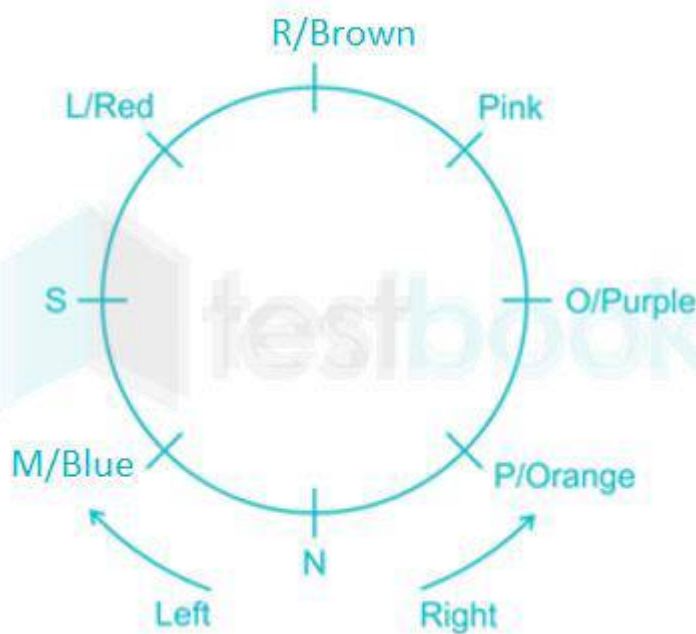


8) So, either orange will be Q or pink will be Q as only Q is remaining.

1.a.2

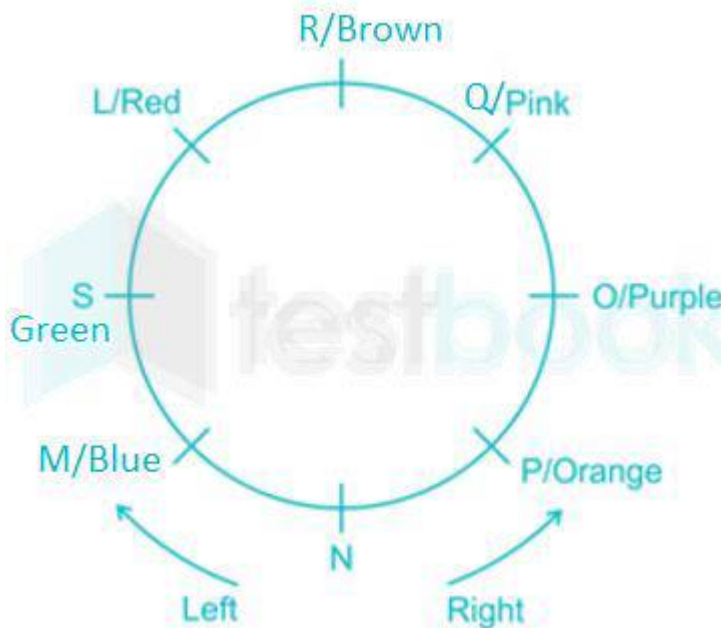


2.a



9) R does not like Black. Thus we get our final arrangement.

2.a



Q is second to the right of the person who likes Orange colour.

62. Seven regional films: Punjabi, Marathi, Tamil, Telugu, Kannada, Bengali and Bhojpuri

Film Festival: From Monday to Sunday.

1) Bengali film is shown in Thursday.

Day Allotted	Language of the film
Monday	
Tuesday	
Wednesday	
Thursday	Bengali
Friday	
Saturday	
Sunday	

2) Kannada film is shown neither on Tuesday nor on Saturday.

3) Bhojpuri film is shown neither on Sunday nor on Monday.

Day Allotted	Language of the film
Monday	Kannada
Tuesday	Bhojpuri
Wednesday	Bhojpuri; Kannada
Thursday	Bengali
Friday	Bhojpuri; Kannada
Saturday	Bhojpuri
Sunday	Kannada

4) Only one film is shown between Bengali and Tamil film.

Day Allotted	Language of the film
Monday	Kannada
Tuesday	Bhojpuri; Tamil
Wednesday	Bhojpuri; Kannada
Thursday	Bengali
Friday	Bhojpuri; Kannada
Saturday	Bhojpuri; Tamil
Sunday	Kannada

5) Kannada film is shown on the day immediately after the day on which Marathi film is shown.

So, Kannada film cannot be on Monday.

6) Two films are shown between Punjabi and Marathi film.

Now if Marathi film is shown on Tuesday, then Kannada film will be shown on Wednesday and Punjabi film will be shown on Friday.

But then there is conflict between day on which Bhojpuri and Tamil film is shown.

Day Allotted	Language of the film
Monday	

Tuesday	Marathi
Wednesday	Kannada
Thursday	Bengali
Friday	Punjabi
Saturday	Bhojpuri; Tamil
Sunday	Kannada

Now if Marathi film is shown on Saturday, then Kannada film will be shown on Sunday and Punjabi film will be shown on Wednesday.

Then Bhojpuri film will be shown on Friday and Tamil film will be shown on Tuesday.

Thus on Monday, Telugu film is shown.

Day Allotted	Language of the film
Monday	Telugu
Tuesday	Tamil
Wednesday	Punjabi
Thursday	Bengali
Friday	Bhojpuri
Saturday	Marathi
Sunday	Kannada

Thus Telugu film is shown on Monday.

63. Seven regional films: Punjabi, Marathi, Tamil, Telugu, Kannada, Bengali and Bhojpuri

Film Festival: From Monday to Sunday.

1) Bengali film is shown in Thursday.

Day Allotted	Language of the film
Monday	
Tuesday	

Wednesday	
Thursday	Bengali
Friday	
Saturday	
Sunday	

2) Kannada film is shown neither on Tuesday nor on Saturday.

3) Bhojpuri film is shown neither on Sunday nor on Monday.

Day Allotted	Language of the film
Monday	Kannada
Tuesday	Bhojpuri
Wednesday	Bhojpuri; Kannada
Thursday	Bengali
Friday	Bhojpuri; Kannada
Saturday	Bhojpuri
Sunday	Kannada

4) Only one film is shown between Bengali and Tamil film.

Day Allotted	Language of the film
Monday	Kannada
Tuesday	Bhojpuri; Tamil
Wednesday	Bhojpuri; Kannada
Thursday	Bengali
Friday	Bhojpuri; Kannada
Saturday	Bhojpuri; Tamil
Sunday	Kannada

5) Kannada film is shown on the day immediately after the day on which Marathi film is shown.

So, Kannada film cannot be on Monday.

6) Two films are shown between Punjabi and Marathi film.

Now if Marathi film is shown on Tuesday, then Kannada film will be shown on Wednesday and Punjabi film will be shown on Friday.

But then there is conflict between day on which Bhojpuri and Tamil film is shown.

Day Allotted	Language of the film
Monday	
Tuesday	Marathi
Wednesday	Kannada
Thursday	Bengali
Friday	Punjabi
Saturday	Bhojpuri; Tamil
Sunday	Kannada

Now if Marathi film is shown on Saturday, then Kannada film will be shown on Sunday and Punjabi film will be shown on Wednesday.

Then Bhojpuri film will be shown on Friday and Tamil film will be shown on Tuesday.

Thus on Monday, Telugu film is shown.

Day Allotted	Language of the film
Monday	Telugu
Tuesday	Tamil
Wednesday	Punjabi
Thursday	Bengali
Friday	Bhojpuri
Saturday	Marathi
Sunday	Kannada

Thus three films are shown between Tamil and Marathi films.

64. Solution:

Seven regional films: Punjabi, Marathi, Tamil, Telugu, Kannada, Bengali and Bhojpuri

Film Festival: From Monday to Sunday.

1) Bengali film is shown in Thursday.

Day Allotted	Language of the film
Monday	
Tuesday	
Wednesday	
Thursday	Bengali
Friday	
Saturday	
Sunday	

2) Kannada film is shown neither on Tuesday nor on Saturday.

3) Bhojpuri film is shown neither on Sunday nor on Monday.

Day Allotted	Language of the film
Monday	Kannada
Tuesday	Bhojpuri
Wednesday	Bhojpuri; Kannada
Thursday	Bengali
Friday	Bhojpuri; Kannada
Saturday	Bhojpuri
Sunday	Kannada

4) Only one film is shown between Bengali and Tamil film.

Day Allotted	Language of the film
Monday	Kannada

Tuesday	Bhojpuri; Tamil
Wednesday	Bhojpuri; Kannada
Thursday	Bengali
Friday	Bhojpuri; Kannada
Saturday	Bhojpuri; Tamil
Sunday	Kannada

5) Kannada film is shown on the day immediately after the day on which Marathi film is shown.

So, Kannada film cannot be on Monday.

6) Two films are shown between Punjabi and Marathi film.

Now if Marathi film is shown on Tuesday, then Kannada film will be shown on Wednesday and Punjabi film will be shown on Friday.

But then there is conflict between day on which Bhojpuri and Tamil film is shown.

Day Allotted	Language of the film
Monday	
Tuesday	Marathi
Wednesday	Kannada
Thursday	Bengali
Friday	Punjabi
Saturday	Bhojpuri; Tamil
Sunday	Kannada

Now if Marathi film is shown on Saturday, then Kannada film will be shown on Sunday and Punjabi film will be shown on Wednesday.

Then Bhojpuri film will be shown on Friday and Tamil film will be shown on Tuesday.

Thus on Monday, Telugu film is shown.

Day Allotted	Language of the film
Monday	Telugu

Tuesday	Tamil
Wednesday	Punjabi
Thursday	Bengali
Friday	Bhojpuri
Saturday	Marathi
Sunday	Kannada

Thus, Marathi film is shown on Saturday.

65. Seven regional films: Punjabi, Marathi, Tamil, Telugu, Kannada, Bengali and Bhojpuri

Film Festival: From Monday to Sunday.

1) Bengali film is shown in Thursday.

Day Allotted	Language of the film
Monday	
Tuesday	
Wednesday	
Thursday	Bengali
Friday	
Saturday	
Sunday	

2) Kannada film is shown neither on Tuesday nor on Saturday.

3) Bhojpuri film is shown neither on Sunday nor on Monday.

Day Allotted	Language of the film
Monday	Kannada
Tuesday	Bhojpuri
Wednesday	Bhojpuri; Kannada
Thursday	Bengali

Friday	Bhojpuri; Kannada
Saturday	Bhojpuri
Sunday	Kannada

4) Only one film is shown between Bengali and Tamil film.

Day Allotted	Language of the film
Monday	Kannada
Tuesday	Bhojpuri; Tamil
Wednesday	Bhojpuri; Kannada
Thursday	Bengali
Friday	Bhojpuri; Kannada
Saturday	Bhojpuri; Tamil
Sunday	Kannada

5) Kannada film is shown on the day immediately after the day on which Marathi film is shown.

So, Kannada film cannot be on Monday.

6) Two films are shown between Punjabi and Marathi film.

Now if Marathi film is shown on Tuesday, then Kannada film will be shown on Wednesday and Punjabi film will be shown on Friday.

But then there is conflict between day on which Bhojpuri and Tamil film is shown.

Day Allotted	Language of the film
Monday	
Tuesday	Marathi
Wednesday	Kannada
Thursday	Bengali
Friday	Punjabi
Saturday	Bhojpuri; Tamil
Sunday	Kannada

Now if Marathi film is shown on Saturday, then Kannada film will be shown on Sunday and Punjabi film will be shown on Wednesday.

Then Bhojpuri film will be shown on Friday and Tamil film will be shown on Tuesday.

Thus on Monday, Telugu film is shown.

Day Allotted	Language of the film
Monday	Telugu
Tuesday	Tamil
Wednesday	Punjabi
Thursday	Bengali
Friday	Bhojpuri
Saturday	Marathi
Sunday	Kannada

Thus Bhojpuri film is shown on Friday.

66. Seven regional films: Punjabi, Marathi, Tamil, Telugu, Kannada, Bengali and Bhojpuri

Film Festival: From Monday to Sunday.

1) Bengali film is shown in Thursday.

Day Allotted	Language of the film
Monday	
Tuesday	
Wednesday	
Thursday	Bengali
Friday	
Saturday	
Sunday	

2) Kannada film is shown neither on Tuesday nor on Saturday.

3) Bhojpuri film is shown neither on Sunday nor on Monday.

Day Allotted	Language of the film
Monday	Kannada
Tuesday	Bhojpuri
Wednesday	Bhojpuri; Kannada
Thursday	Bengali
Friday	Bhojpuri; Kannada
Saturday	Bhojpuri
Sunday	Kannada

4) Only one film is shown between Bengali and Tamil film.

Day Allotted	Language of the film
Monday	Kannada
Tuesday	Bhojpuri; Tamil
Wednesday	Bhojpuri; Kannada
Thursday	Bengali
Friday	Bhojpuri; Kannada
Saturday	Bhojpuri; Tamil
Sunday	Kannada

5) Kannada film is shown on the day immediately after the day on which Marathi film is shown.

So, Kannada film cannot be on Monday.

6) Two films are shown between Punjabi and Marathi film.

Now if Marathi film is shown on Tuesday, then Kannada film will be shown on Wednesday and Punjabi film will be shown on Friday.

But then there is conflict between day on which Bhojpuri and Tamil film is shown.

Day Allotted	Language of the film
--------------	----------------------

Monday	
Tuesday	Marathi
Wednesday	Kannada
Thursday	Bengali
Friday	Punjabi
Saturday	Bhojpuri; Tamil
Sunday	Kannada

Now if Marathi film is shown on Saturday, then Kannada film will be shown on Sunday and Punjabi film will be shown on Wednesday.

Then Bhojpuri film will be shown on Friday and Tamil film will be shown on Tuesday.

Thus on Monday, Telugu film is shown.

Day Allotted	Language of the film
Monday	Telugu
Tuesday	Tamil
Wednesday	Punjabi
Thursday	Bengali
Friday	Bhojpuri
Saturday	Marathi
Sunday	Kannada

Thus Punjabi film is shown just before Bengali film.

67. The input of words and numbers is rearranged in such a way so that in the final rearrangement first all the numbers appear in descending order followed by all the words in ascending order. The steps of the procedure are as follows:

1. In Step I, the largest number is made the first element and all the other elements are shifted rightwards accordingly.
2. In the next step, alphabetically first word is made the last element and all the others are shifted accordingly.

3. In the next step, the second smallest number is made the second element and all others are shifted accordingly.
4. In the successive steps, the second word alphabetically is made the last element and others are shifted accordingly.

This procedure is continued until all the numbers appear in descending order followed by all the words in alphabetical order.

For the input given the steps are as follows:

Input: class 25 war 15 race 73 heap 58 just 88 take 38

Step I: 88 class 25 war 15 race 73 heap 58 just take 38

Step II: 88 25 war 15 race 73 heap 58 just take 38 class

Step III: 88 73 25 war 15 race heap 58 just take 38 class

Step IV: 88 73 25 war 15 race 58 just take 38 class heap

Step V: 88 73 58 25 war 15 race just take 38 class heap

Step VI: 88 73 58 25 war 15 race take 38 class heap just

Step VII: 88 73 58 38 25 war 15 race take class heap just

Hence, '25' is ninth from the right in Step VI.

68. The input of words and numbers is rearranged in such a way so that in the final rearrangement first all the numbers appear in descending order followed by all the words in ascending order. The steps of the procedure are as follows:

1. In Step I, the largest number is made the first element and all the other elements are shifted rightwards accordingly.
2. In the next step, alphabetically first word is made the last element and all the others are shifted accordingly.
3. In the next step, the second smallest number is made the second element and all others are shifted accordingly.
4. In the successive steps, the second word alphabetically is made the last element and others are shifted accordingly.

This procedure is continued until all the numbers appear in descending order followed by all the words in alphabetical order.

For the input given the steps are as follows:

Input: class 25 war 15 race 73 heap 58 just 88 take 38

Step I: 88 class 25 war 15 race 73 heap 58 just take 38

Step II: 88 25 war 15 race 73 heap 58 just take 38 class

Step III: 88 73 25 war 15 race heap 58 just take 38 class

Step IV: 88 73 25 war 15 race 58 just take 38 class heap

Step V: 88 73 58 25 war 15 race just take 38 class heap

Step VI: 88 73 58 25 war 15 race take 38 class heap just

Step VII: 88 73 58 38 25 war 15 race take class heap just

Step VIII: 88 73 58 38 25 war 15 take class heap just race

Step IX: 88 73 58 38 25 15 war take class heap just race

Thus, Step X is “88 73 58 38 25 15 war class heap just race take”.

69. The input of words and numbers is rearranged in such a way so that in the final rearrangement first all the numbers appear in descending order followed by all the words in ascending order. The steps of the procedure are as follows:

1. In Step I, the largest number is made the first element and all the other elements are shifted rightwards accordingly.
2. In the next step, alphabetically first word is made the last element and all the others are shifted accordingly.
3. In the next step, the second smallest number is made the second element and all others are shifted accordingly.
4. In the successive steps, the second word alphabetically is made the last element and others are shifted accordingly.

This procedure is continued until all the numbers appear in descending order followed by all the words in alphabetical order.

For the input given the steps are as follows:

Input: class 25 war 15 race 73 heap 58 just 88 take 38

Step I: 88 class 25 war 15 race 73 heap 58 just take 38

Step II: 88 25 war 15 race 73 heap 58 just take 38 class

Step III: 88 73 25 war 15 race heap 58 just take 38 class

Step IV: 88 73 25 war 15 race 58 just take 38 class heap

Step V: 88 73 58 25 war 15 race just take 38 class heap

Step VI: 88 73 58 25 war 15 race take 38 class heap just

Step VII: 88 73 58 38 25 war 15 race take class heap just

Step VIII: 88 73 58 38 25 war 15 take class heap just race

Step IX: 88 73 58 38 25 15 war take class heap just race

Step X: 88 73 58 38 25 15 war class heap just race take

Step XI: 88 73 58 38 25 15 class heap just race take war

Step XI is the last step of the rearrangement as the desired arrangement is obtained.

Thus, eleven steps are required to complete this arrangement.

70. The input of words and numbers is rearranged in such a way so that in the final rearrangement first all the numbers appear in descending order followed by all the words in ascending order. The steps of the procedure are as follows:

1. In Step I, the largest number is made the first element and all the other elements are shifted rightwards accordingly.
2. In the next step, alphabetically first word is made the last element and all the others are shifted accordingly.
3. In the next step, the second smallest number is made the second element and all others are shifted accordingly.
4. In the successive steps, the second word alphabetically is made the last element and others are shifted accordingly.

This procedure is continued until all the numbers appear in descending order followed by all the words in alphabetical order.

For the input given the steps are as follows:

Input: class 25 war 15 race 73 heap 58 just 88 take 38

Step I: 88 class 25 war 15 race 73 heap 58 just take 38

Step II: 88 25 war 15 race 73 heap 58 just take 38 class

Step III: 88 73 25 war 15 race heap 58 just take 38 class

Step IV: 88 73 25 war 15 race 58 just take 38 class heap

Step V: 88 73 58 25 war 15 race just take 38 class heap

Step VI: 88 73 58 25 war 15 race take 38 class heap just

Step VII: 88 73 58 38 25 war 15 race take class heap just

Step VIII: 88 73 58 38 25 war 15 take class heap just race

Step IX: 88 73 58 38 25 15 war take class heap just race

Step X: 88 73 58 38 25 15 war class heap just race take

Step XI: 88 73 58 38 25 15 class heap just race take war

Hence, in Step 'IX' the position of '15' is seventh from the right end.

71. The input of words and numbers is rearranged in such a way so that in the final rearrangement first all the numbers appear in descending order followed by all the words in ascending order. The steps of the procedure are as follows:

1. In Step I, the largest number is made the first element and all the other elements are shifted rightwards accordingly.
2. In the next step, alphabetically first word is made the last element and all the others are shifted accordingly.
3. In the next step, the second smallest number is made the second element and all others are shifted accordingly.
4. In the successive steps, the second word alphabetically is made the last element and others are shifted accordingly.

This procedure is continued until all the numbers appear in descending order followed by all the words in alphabetical order.

For the input given the steps are as follows:

Input: class 25 war 15 race 73 heap 58 just 88 take 38

Step I: 88 class 25 war 15 race 73 heap 58 just take 38

Step II: 88 25 war 15 race 73 heap 58 just take 38 class

Step III: 88 73 25 war 15 race heap 58 just take 38 class

Step IV: 88 73 25 war 15 race 58 just take 38 class heap

Step V: 88 73 58 25 war 15 race just take 38 class heap

Step VI: 88 73 58 25 war 15 race take 38 class heap just

Step VII: 88 73 58 38 25 war 15 race take class heap just

Step VIII: 88 73 58 38 25 war 15 take class heap just race

Step IX: 88 73 58 38 25 15 war take class heap just race

Step X: 88 73 58 38 25 15 war class heap just race take

Step XI: 88 73 58 38 25 15 class heap just race take war

Hence, the position of 'war' in Step VII is sixth from the left end.

72. Ranks of five candidates P, Q, R, S and T are arranged in ascending order of their marks.

That means candidate with highest marks have highest rank.

In Numerical Ability, T is the fourth and S is the first.

Candidate	Numerical Ability Rank	General Awareness Ranks
-----------	------------------------	-------------------------

P		
Q		
R		
S	1	
T	4	

In General Awareness, P takes the place of T and T takes the place of Q. R's position remains the same in both the arrangements.

Let place of Q and R in Numerical ability are 'n' and 'x' respectively.

Candidate	Numerical Ability Rank	General Awareness Ranks
P		4
Q	n	
R	x	x
S	1	
T	4	n

Q's marks are lowest in one test and highest in the other test.

As in Numerical ability rank of S is first so Q cannot be first. Hence Q is last in Numerical ability and first in General awareness.

Candidate	Numerical Ability Rank	General Awareness Ranks
P		4
Q	5	1
R	x	x
S	1	
T	4	5

P has more marks than R in Numerical Ability.

Hence P is third and R is second in Numerical ability.

Candidate	Numerical Ability Rank	General Awareness Ranks
P	3	4
Q	5	1

R	2	2
S	1	3
T	4	5

Hence we get the final table.

So the ranks in ascending order are as follows,

Numerical Ability: S R P T Q

General Awareness: Q R S P T

That means S got least marks in Numerical ability and Q got the highest.

In General Awareness Q got the least marks and T got the highest.

So, T secured the highest marks in General Awareness.

73. Ranks of five candidates P, Q, R, S and T are arranged in ascending order of their marks.

That means candidate with highest marks have highest rank.

In Numerical Ability, T is the fourth and S is the first.

Candidate	Numerical Ability Rank	General Awareness Ranks
P		
Q		
R		
S	1	
T	4	

In General Awareness, P takes the place of T and T takes the place of Q. R's position remains the same in both the arrangements.

Let place of Q and R in Numerical ability are 'n' and 'x' respectively.

Candidate	Numerical Ability Rank	General Awareness Ranks
P		4
Q	n	
R	x	x
S	1	

T	4	n
---	---	---

Q's marks are lowest in one test and highest in the other test.

As in Numerical ability rank of S is first so Q cannot be first. Hence Q is last in Numerical ability and first in General awareness.

Candidate	Numerical Ability Rank	General Awareness Ranks
P		4
Q	5	1
R	x	x
S	1	
T	4	5

P has more marks than R in Numerical Ability.

Hence P is third and R is second in Numerical ability.

Candidate	Numerical Ability Rank	General Awareness Ranks
P	3	4
Q	5	1
R	2	2
S	1	3
T	4	5

Hence we get the final table.

So the ranks in ascending order are as follows,

Numerical Ability: S R P T Q

General Awareness: Q R S P T

That means S got least marks in Numerical ability and Q got the highest.

In General Awareness Q got the least marks and T got the highest.

So, Q secured the highest marks in Numerical Ability

74. Ranks of five candidates P, Q, R, S and T are arranged in ascending order of their marks.

That means candidate with highest marks have highest rank.

In Numerical Ability, T is the fourth and S is the first.

Candidate	Numerical Ability Rank	General Awareness Ranks
P		
Q		
R		
S	1	
T	4	

In General Awareness, P takes the place of T and T takes the place of Q. R's position remains the same in both the arrangements.

Let place of Q and R in Numerical ability are 'n' and 'x' respectively.

Candidate	Numerical Ability Rank	General Awareness Ranks
P		4
Q	n	
R	x	x
S	1	
T	4	n

Q's marks are lowest in one test and highest in the other test.

As in Numerical ability rank of S is first so Q cannot be first. Hence Q is last in Numerical ability and first in General awareness.

Candidate	Numerical Ability Rank	General Awareness Ranks
P		4
Q	5	1
R	x	x
S	1	
T	4	5

P has more marks than R in Numerical Ability.

Hence P is third and R is second in Numerical ability.

Candidate	Numerical Ability Rank	General Awareness Ranks
-----------	------------------------	-------------------------

P	3	4
Q	5	1
R	2	2
S	1	3
T	4	5

Hence we get the final table.

So the ranks in ascending order are as follows,

Numerical Ability: S R P T Q

General Awareness: Q R S P T

That means S got least marks in Numerical ability and Q got the highest.

In General Awareness Q got the least marks and T got the highest.

Hence S, P & T have improvement in their ranks.

75. Ranks of five candidates P, Q, R, S and T are arranged in ascending order of their marks.

That means candidate with highest marks have highest rank.

In Numerical Ability, T is the fourth and S is the first.

Candidate	Numerical Ability Rank	General Awareness Ranks
P		
Q		
R		
S	1	
T	4	

In General Awareness, P takes the place of T and T takes the place of Q. R's position remains the same in both the arrangements.

Let place of Q and R in Numerical ability are 'n' and 'x' respectively.

Candidate	Numerical Ability Rank	General Awareness Ranks
P		4
Q	n	

R	x	x
S	1	
T	4	n

Q's marks are lowest in one test and highest in the other test.

As in Numerical ability rank of S is first so Q cannot be first. Hence Q is last in Numerical ability and first in General awareness.

Candidate	Numerical Ability Rank	General Awareness Ranks
P		4
Q	5	1
R	x	x
S	1	
T	4	5

P has more marks than R in Numerical Ability.

Hence P is third and R is second in Numerical ability.

Candidate	Numerical Ability Rank	General Awareness Ranks
P	3	4
Q	5	1
R	2	2
S	1	3
T	4	5

Hence we get the final table.

So the ranks in ascending order are as follows,

Numerical Ability: S R P T Q





General Awareness: Q R S P T

That means S got least marks in Numerical ability and Q got the highest.

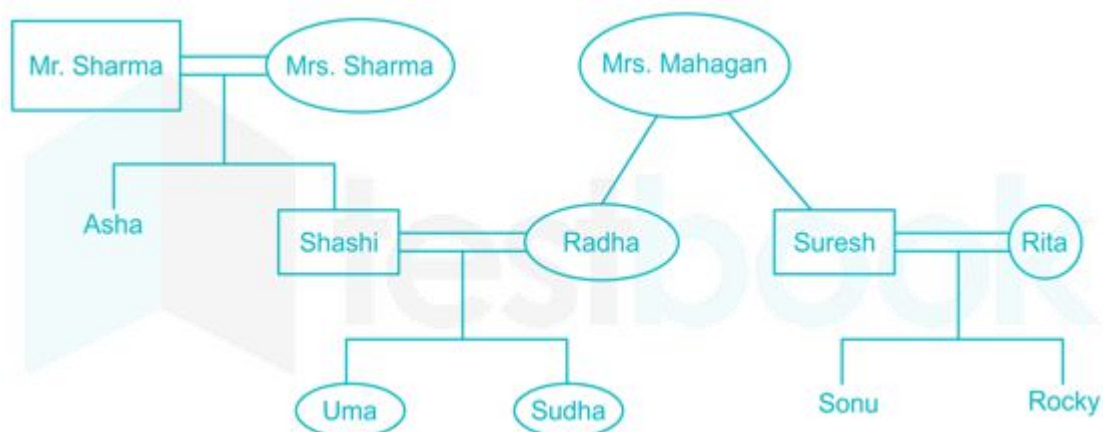
In General Awareness Q got the least marks and T got the highest.

Therefore, S, P and T have more marks than R in the General awareness.

76.

Symbol in Diagram	Meaning
	Female
	Male
	Married Couple
	Siblings
	Difference of A Generation

Following family diagram can be drawn from the given information:



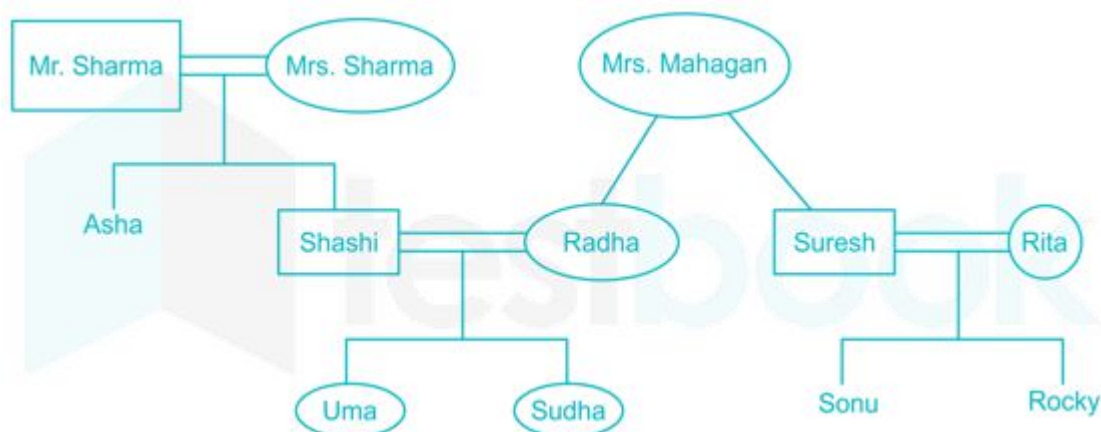
Sudha is daughter of Radha whose brother is Suresh.

Hence, Suresh is Maternal Uncle of Sudha.

77.

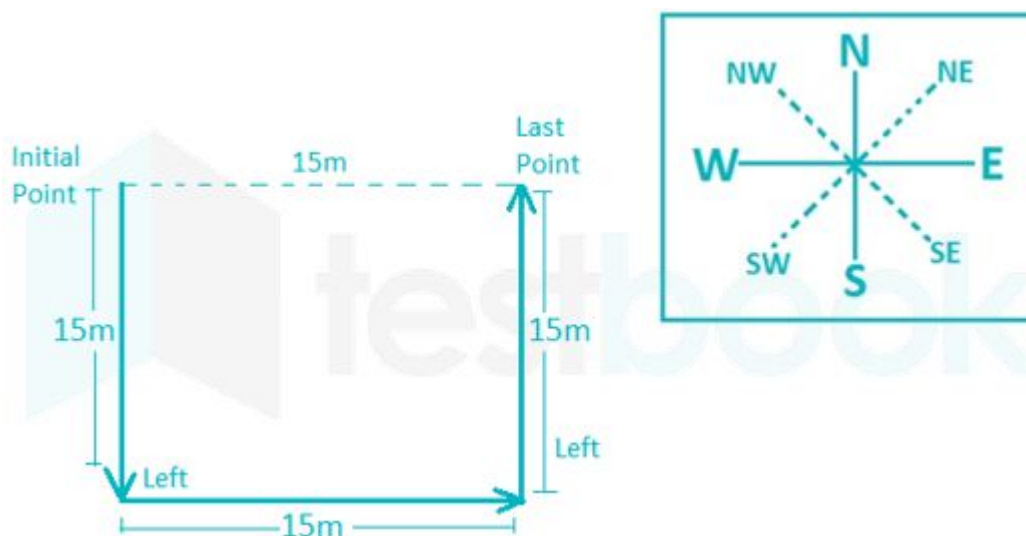
Symbol in Diagram	Meaning
○	Female
□	Male
══	Married Couple
—	Siblings
	Difference of A Generation

Following family diagram can be drawn from the given information:



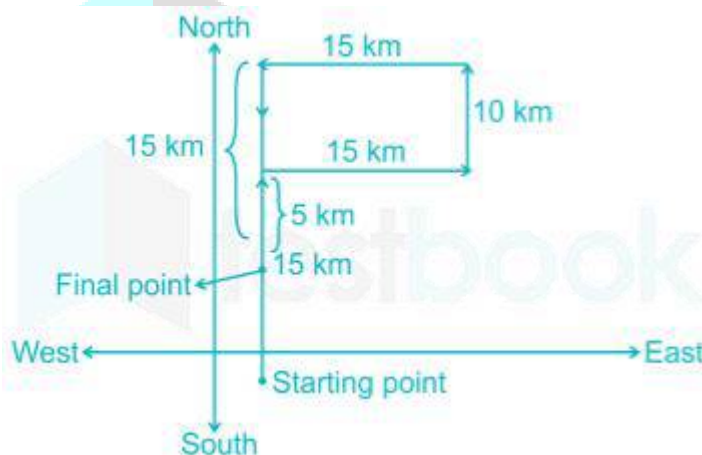
Now, it is clear that Sonu is son of Suresh whose mother is Mrs. Mahajan so the surname of Sonu is Mahajan.

78. The route can be traced as follow:



Clearly, She is 15m towards East of her initial point.

79. The path followed by Jaffar is traced as followed,



Hence from the figure the distance will be $15 - 5 = 10$ km

80. According to the information given,

P is				
%	\$	©	★	@
=	>	<	≤	≥
Of Q				

Given statement: $V \text{ © } K, K \text{ @ } B, B \text{ \$ } M$

On converting: $V < K$; $K \geq B$; $B > M$

On combining: $V < K \geq B > M$

Conclusions:

I. $V \odot B \rightarrow V < B \rightarrow$ as $V < K \geq B \rightarrow$ Clear relation between V and B cannot be established, hence false.

II. $M \odot K \rightarrow M < K \rightarrow$ as $K \geq B > M \rightarrow K > M$, hence true.

III. $M \odot V \rightarrow M < V \rightarrow$ as $V < K \geq B > M \rightarrow V < K > M \rightarrow$ Clear relation between M and V cannot be established, hence false.

Hence, only conclusion II follows.

81. According to the information given,

P is				
%	\$	©	★	@
=	>	<	≤	≥
Of Q				

Given statement: $D \star R$, $R \% F$, $F \$ T$

On converting: $D \leq R$, $R = F$, $F > T$

On combining: $D \leq R = F > T$

Conclusions:

I. $F \% D \rightarrow F = D \rightarrow$ as $D \leq R = F \rightarrow D \leq F$, hence false.

II. $F \$ D \rightarrow F > D \rightarrow$ as $D \leq R = F \rightarrow D \leq F$, hence false.

III. $T \odot R \rightarrow T < R \rightarrow$ as $R = F > T \rightarrow R > T$, hence true.

Here conclusion I and II form a complementary pair.

Hence either conclusion I or II and conclusion III follows.

82. According to the information given,

P is				
%	\$	©	★	@
=	>	<	≤	≥

Of Q

Given statement: $N @ D, D \star K, K \$ A$ **On converting:** $N \geq D, D \leq K, K > A$ **On combining:** $N \geq D \leq K > A$

Conclusions:

I. $K @ N \rightarrow K \geq N \rightarrow$ as $N \geq D \leq K \rightarrow$ Clear relation between K and N cannot be established, hence false.II. $A \odot D \rightarrow A < D \rightarrow$ as $D \leq K > A \rightarrow$ Clear relation between A and D cannot be established, hence false.III. $N \$ A \rightarrow N > A \rightarrow$ as $N \geq D \leq K > A \rightarrow$ Clear relation between N and A cannot be established, hence false.

Clearly none of the conclusions follow.

83. According to the information given,

P is				
%	\$	©	★	@
=	>	<	≤	≥
Of Q				

Given statement: $K @ T, T \$ N, N \odot R$ **On converting:** $K \geq T, T > N, N < R$ **On combining:** $K \geq T > N < R$

Conclusions:

I. $R \$ K \rightarrow R > K \rightarrow$ as $K \geq T > N < R \rightarrow K > N < R \rightarrow$ Clear relation between R and K cannot be established, hence false.II. $N \star K \rightarrow N \leq K \rightarrow$ as $K \geq T > N \rightarrow K > N$, hence false.III. $K \$ N \rightarrow K > N \rightarrow$ as $K \geq T > N \rightarrow K > N$, hence true.

Hence only conclusion III follows.

84. According to the information given,

P is				
%	\$	©	★	@
=	>	<	≤	≥
Of Q				

Given statement: $W \% K, K \text{ © } F, D \$ F$

On converting: $W = K, K < F, D > F$

On combining: $W = K < F < D$

Conclusions:

I. $D \$ K \rightarrow D > K \rightarrow$ as $K < F < D \rightarrow K < D$, hence true.

II. $D \$ W \rightarrow D > W \rightarrow$ as $W = K < F < D \rightarrow W < D$, hence true.

III. $F @ W \rightarrow F \geq W \rightarrow$ as $W = K < F \rightarrow W < F$, hence false.

Hence only conclusion I and II follows.

85. 1. 1st element is symbol that represent first letter of word. (Detail shown below)

2. 2nd element is Letter that represent last letter of word.

3. 3rd element is number that represent number of letter in word.

Ex: @M4à “roam”

M is last letter of word roam.

4 is number of letter in word.

@ is symbol that represent first letter of word “roam” which is ‘R’.

Hence, @M4 is code for roam.

According to same rule:

	do ↓ %02	not ↓ \$T3	roam ↓ @M4	across ↓ #S6	Vidya ↓ &A5
# → A	not ↓ \$T3	to ↓ *02	dive ↓ %E4	taxes ↓ *S5	around ↓ #D6
@ → R	Ajay ↓ #Y4	want ↓ !T4	mixed ↓ +D5	Ice-cream ↓ ?M8	
\$ → N					
& → V					
* → T					
+ → M					
? → i					
! → W					
	Ankush ↓ #H6	thliya ↓ *A6	taxes ↓ *S5	Intern ↓ ?N6	

According to above coding code of Ajay is #Y4

Hence, #Y4 is code for Ajay.

86. 1. 1st element is symbol that represent first letter of word. (Detail shown below)

2. 2nd element is Letter that represent last letter of word.

3. 3rd element is number that represent number of letter in word.

Ex: @M4 → “roam”

M is last letter of word roam.

4 is number of letter in word.

@ is symbol that represent first letter of word “roam” which is ‘R’.

Hence, @M4 is code for roam.

According to same rule:

	do ↓ %02	not ↓ \$T3	roam ↓ @M4	across ↓ #S6	Vidya ↓ &A5
# → A	not ↓ \$T3	to ↓ *02	dive ↓ %E4	taxes ↓ *S5	around ↓ #D6
@ → R					
\$ → N					
& → V					
* → T					
+ → M					
? → i					
! → W					
	Ajay ↓ #Y4	want ↓ !T4	mixed ↓ +D5	Ice-cream ↓ ?M8	
	Ankush ↓ #H6	thliya ↓ *A6	taxes ↓ *S5	Intern ↓ ?N6	

According to above rule

*K8

à 8 number of letter in that word

à K Being last letter of word

à * **Symbol present first letter of word which is “T”**

Above these 3 condition will exist in **“Testbook”**

Hence, we can say that Testbook will be coded as *K8

87. 1. 1st element is symbol that represent first letter of word. (Detail shown below)

2. 2nd element is Letter that represent last letter of word.

3. 3rd element is number that represent number of letter in word.

Ex: @M4à “roam”

M is last letter of word roam.

4 is number of letter in word.

@ is symbol that **represent first letter of word “roam” which is ‘R’.**

Hence, @M4 is code for roam.

According to same rule:

	do ↓ %02	not ↓ \$T3	roam ↓ @M4	across ↓ #S6	Vidya ↓ &A5
# → A	not ↓ \$T3	to ↓ *02	dive ↓ %E4	taxes ↓ *S5	around ↓ #D6
@ → R	Ajay ↓ #Y4	want ↓ !T4	mixed ↓ +D5	Ice-cream ↓ ?M8	
\$ → N					
& → V					
* → T					
+ → M					
? → i					
! → W					
	Ankush ↓ #H6	thliya ↓ *A6	taxes ↓ *S5	Intern ↓ ?N6	

Hence, taxes will be coded as *S5 as shown in above table.

88. 1. 1st element is symbol that represent first letter of word. (Detail shown below)

2. 2nd element is Letter that represent last letter of word.

3. 3rd element is number that represent number of letter in word.

Ex: @M4 → “roam”

M is last letter of word roam.

4 is number of letter in word.

@ is symbol that represent first letter of word “roam” which is ‘R’.

Hence, @M4 is code for roam.

According to same rule:

	do	not	roam	across	Vidya
	↓	↓	↓	↓	↓
	%02	\$T3	@M4	#S6	&A5
# → A	not	to	dive	taxes	around
@ → R	↓	↓	↓	↓	↓
\$ → N	\$T3	*02	%E4	*S5	#D6
& → V	Ajay	want	mixed	Ice-cream	
* → T	↓	↓	↓	↓	
+ → M	#Y4	!T4	+D5	?M8	
? → i	Ankush	thliya	taxes	Intern	
! → W	↓	↓	↓	↓	
	#H6	*A6	*S5	?N6	

Hence, Exact code of “**Ankush**” will be “**#H6**”.

89. Logic:

- 1st element is symbol that represent first letter of word. (Detail shown below)
- 2nd element is Letter that represent last letter of word.
- 3rd element is number that represent number of letter in word.

Ex: @M4 “roam”

M is last letter of word roam.

4 is number of letter in word.

@ is symbol that represent first letter of word “roam” which is ‘R’.

Hence, @M4 is code for roam.

According to same rule:

	do ↓ %02	not ↓ \$T3	roam ↓ @M4	across ↓ #S6	Vidya ↓ &A5
# → A	not ↓ \$T3	to ↓ *02	dive ↓ %E4	taxes ↓ *S5	around ↓ #D6
@ → R					
\$ → N					
& → V					
* → T					
+ → M					
? → i					
! → W					
	Ajay ↓ #Y4	want ↓ !T4	mixed ↓ +D5	Ice-cream ↓ ?M8	
	Ankush ↓ #H6	thliya ↓ *A6	taxes ↓ *S5	Intern ↓ ?N6	

As according to above table

Vidya will be coded as &A5

Want will be coded as !T4

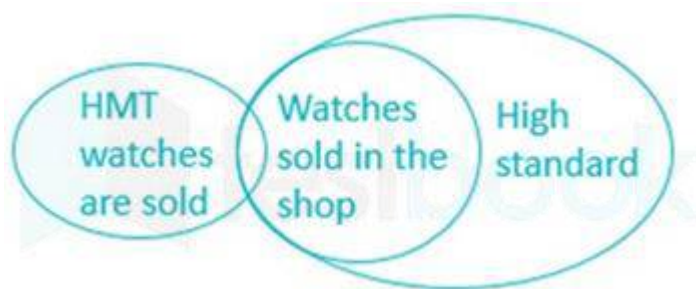
to will be coded as *O2

texas will be coded as *S5

intern will be coded as ?N6

Hence, 'vidya want to texas intern' will be coded as “*S5, ?N6, *O2, &A5 !T4”.

90. From the given statements we draw the following least possible Venn diagram:



Conclusions:

a) All watches of high standard were manufactured by HMT → false as it's possible but not definite.

b) Some of the HMT watches are of high standard → clearly true.

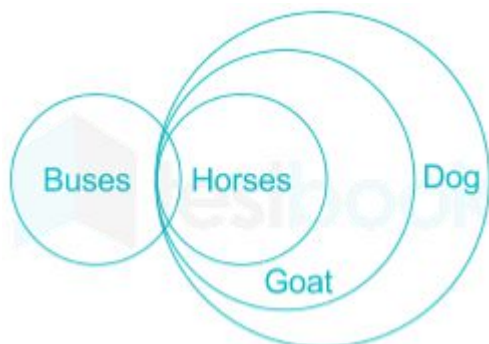
c) None of the HMT watches is of high standard → clearly false.

d) Some of the HMT watches of high standard are sold in that shop → clearly true.

Hence only b and d follows.

91. Note: Here, a conclusion is definite if it can be shown in a diagram drawn with least-possibilities. If a conclusion can't be shown in least-possibilities diagram then the conclusion is possible but not definite.

On drawing least-possibilities Venn-diagram:



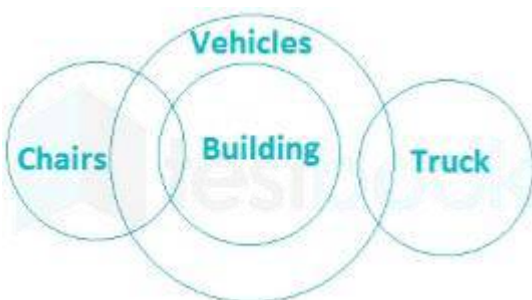
Conclusions:

- I. Some dogs are buses. \Rightarrow It's definitely true.
- II. Some dogs are horses. \Rightarrow It's definitely true.
- III. Some dogs are goats. \Rightarrow It's definitely true.
- IV. Some buses are goats. \Rightarrow It's definitely true.

Hence, all follow.

92. Note: Here, a conclusion is definite if it can be shown in a diagram drawn with least-possibilities. If a conclusion can't be shown in least-possibilities diagram then the conclusion is possible but not definite.

On drawing least-possibilities Venn-diagram:



Conclusions:

- I. Some chairs are trucks \Rightarrow It's possible but not definitely true, hence false.
- II. Some chairs are vehicles \Rightarrow It's definitely true.

III. Some vehicles are buildings \Rightarrow **It's definitely true.**

IV. No truck is chair \Rightarrow **It's possible but not definitely true, hence false.**

\therefore I or IV are complementary pairs i.e. Either Some chairs are Trucks or No chairs are Trucks. So, either I or IV will follow.

Hence, II and III and I or IV follow.

93. From I: ja na pit sod = beautiful bunch of flowers

From II: na sod pa tok = huge bunch of twigs

Even using I & II together, we can't determine the code of *pit*. It may be *beautiful* or *flowers*.

94. From II: Radius of the sphere in question part will give us the volume of the sphere as well as that of the right circular cylinder. We know height of right circular cylinder

$$= \frac{\text{Volume of the cylinder}}{\text{Area of the base of the cylinder}}$$

95. From I: We only know that L and N are sisters of M.

$L(-) - N(-) - M$

From II: We can tell that K has only one son and K is mother of N as well. Hence N is girl but K can may have more daughter other than N.

$K(-)$

|

$N(-)$

Now, combining I and II, we get $K(-)$ is mother of N and K has two known daughter and only one son.

$L(-) - N(-) - M$ (gender not known)

There can be one more child, while M being another daughter of K.

96. As the area is flooded and more water is getting wasted, civic authority should immediately arrange to repair the damage and stop the loss of water. Furthermore, civic authority should also seek an explanation and compensation from the utility

company for the damage caused by them so that it creates an example for other companies to abide by the rules.

97. Clearly, India can export only the surplus and that which can be saved after fulfilling its own needs, to pay for its imports. Encouragement to export cannot lead to shortages as it shall provide the resources for imports. So, only argument I holds.

98. Only course of action II seems to be appropriate. Course of action I is not feasible practically.

99. Clearly, if there were less candidates, the voters would find it easy to make a choice. So, argument I holds. Also, every person satisfying the conditions laid down by the Constitution must be given an opportunity and should not be denied the same just to cut down the number of candidates. So, argument II also holds strong.

100. An organization like UNO is meant to maintain peace all over and will always serve to prevent conflicts between countries. So, its role never ends. So, argument I does not hold. Also, lack of such an organization may in future lead to increased mutual conflicts and international wars, on account of lack of a common platform for mutual discussions. So, argument II holds.

Quantitative Aptitude

101. Follow BODMAS rule to solve this question, as per the order given below,

Step-1-Parts of an equation enclosed in 'Brackets' must be solved first,

Step-2-Any mathematical 'Of' or 'Exponent' must be solved next,

Step-3-Next, the parts of the equation that contain 'Division' and 'Multiplication' are calculated,

Step-4-Last but not least, the parts of the equation that contain 'Addition' and 'Subtraction' should be calculated.

Now, the given expression,

$$\begin{aligned} & \frac{2.70 \times 2.70 + 4.30 \times 4.30 + 8.60 \times 2.70}{5.40 + 8.60} = ? \\ \Rightarrow & \frac{2.70 \times 2.70 + 4.30 \times 4.30 + 2 \times 4.30 \times 2.70}{2 \times (2.70 + 4.30)} = ? \end{aligned}$$

By using the formula: $(a+b)^2 = a^2 + b^2 + 2ab$, we get

$$\Rightarrow ? = \frac{1}{2} \times \frac{(2.70 + 4.30)^2}{2.70 + 4.30}$$

$$\Rightarrow ? = \frac{1}{2} \times (2.70 + 4.30)$$

$$\Rightarrow ? = 3.5$$

102. Follow BODMAS rule to solve this question, as per the order given below,

Step-1-Parts of an equation enclosed in 'Brackets' must be solved first,

Step-2-Any mathematical 'Of' or 'Exponent' must be solved next,

Step-3-Next, the parts of the equation that contain 'Division' and 'Multiplication' are calculated,

Step-4-Last but not least, the parts of the equation that contain 'Addition' and 'Subtraction' should be calculated.

Now, the given expression,

$$\begin{aligned} & \frac{5}{35} \text{ of } \frac{14}{3} \text{ of } \frac{5}{8} \text{ of } 72 = ? \\ \Rightarrow & \frac{5}{35} \times \frac{14}{3} \times \frac{5}{8} \times 72 = ? \end{aligned}$$

$$\Rightarrow ? = 30$$

103. Follow BODMAS rule to solve this question, as per the order given below,

Step-1-Parts of an equation enclosed in 'Brackets' must be solved first,

Step-2-Any mathematical 'Of' or 'Exponent' must be solved next,

Step-3-Next, the parts of the equation that contain 'Division' and 'Multiplication' are calculated,

Step-4-Last but not least, the parts of the equation that contain 'Addition' and 'Subtraction' should be calculated.

Now, the given expression,

$$37\% \text{ of } 150 - 0.05\% \text{ of } 1200 = ?$$

$$\Rightarrow ? = \frac{37}{100} \times 150 - \frac{0.05}{100} \times 1200$$

$$\Rightarrow ? = 55.5 - 0.6 = 54.9$$

104. Given expression is $6^{x+2} = (36)^{2x-5}$

$$\Rightarrow 6^{x+2} = 6^{2(2x-5)}$$

$$\Rightarrow 6^{x+2} = 6^{4x-10}$$

$$\Rightarrow x + 2 = 4x - 10$$

$$\Rightarrow 3x = 12$$

$$\Rightarrow x = 4$$

105. Given expression is,

$$(1/9)^0 + (9)^0 + (343)^{-1/3} + (36)^{3/2}$$

$$= 1 + 1 + (7)^{3 \times -1/3} + 6^{2 \times 3/2}$$

$$= 2 + (7)^{-1} + (6)^3$$

$$= 218 + (1/7)$$

$$= \frac{1526 + 1}{7} = \frac{1527}{7}$$

106.

$$\text{I. } x^2 - 7x - 18 = 0$$

$$\Rightarrow x^2 - 9x + 2x - 18 = 0$$

$$\Rightarrow x(x - 9) + 2(x - 9) = 0$$

$$\Rightarrow (x - 9)(x + 2) = 0$$

Then, $x = + 9$ or $x = - 2$

$$\text{II. } y^2 - 20y + 99 = 0$$

$$\Rightarrow y^2 - 11y - 9y + 99 = 0$$

$$\Rightarrow y(y - 11) - 9(y - 11) = 0$$

$$\Rightarrow (y - 11)(y - 9) = 0$$

Then, $y = + 11$ or $y = + 9$

So, when $x = + 9$, $x < y$ for $y = + 11$ and $x = y$ for $y = + 9$

And when $x = - 2$, $x < y$ for $y = + 11$ and $x < y$ for $y = + 9$

\therefore So, we can clearly observe that $x \leq y$.

107.

$$\text{I. } 28x^2 + 49x - 14 = 0$$

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$$\Rightarrow 4x^2 + 7x - 2 = 0 \quad [\text{Dividing both sides by 7}]$$

$$\Rightarrow 4x^2 + 8x - x - 2 = 0$$

$$\Rightarrow 4x(x + 2) - 1(x + 2) = 0$$

$$\Rightarrow (x + 2)(4x - 1) = 0$$

Then, $x = -2$ or $x = +\frac{1}{4}$

$$\text{II. } 2y^2 - 3y - 2 = 0$$

$$\Rightarrow 2y^2 - 4y + y - 2 = 0$$

$$\Rightarrow 2y(y - 2) + 1(y - 2) = 0$$

$$\Rightarrow (y - 2)(2y + 1) = 0$$

Then, $y = +2$ or $y = -\frac{1}{2}$

So, when $x = -2$, $x < y$ for $y = +2$ and $x < y$ for $y = -\frac{1}{2}$

And when $x = +\frac{1}{4}$, $x < y$ for $y = +2$ and $x > y$ for $y = -\frac{1}{2}$

\therefore So, we can observe that no clear relationship cannot be determined between x and y .

108.

$$\text{I. } 10x^2 + x - 3 = 0$$

$$\Rightarrow 10x^2 + 6x - 5x - 3 = 0$$

$$\Rightarrow 2x(5x + 3) - 1(5x + 3) = 0$$

$$\Rightarrow (5x + 3)(2x - 1) = 0$$

Then, $x = -\frac{3}{5}$ or $x = +\frac{1}{2}$

$$\text{II. } 15y^2 + 19y + 6 = 0$$

$$\Rightarrow 15y^2 + 10y + 9y + 6 = 0$$

$$\Rightarrow 5y(3y + 2) + 3(3y + 2) = 0$$

$$\Rightarrow (3y + 2)(5y + 3) = 0$$

Then, $y = -2/3$ or $y = -3/5$

So, when $x = -3/5$, $x > y$ for $y = -2/3$ and $x = y$ for $y = -3/5$

And when $x = +1/2$, $x > y$ for $y = -2/3$ and $x > y$ for $y = -3/5$

\therefore So, we can clearly observe that $x \geq y$.

109.

I. $14x^2 - 19x - 3 = 0$

$$\Rightarrow 14x^2 - 21x + 2x - 3 = 0$$

$$\Rightarrow 7x(2x - 3) + 1(2x - 3) = 0$$

$$\Rightarrow (2x - 3)(7x + 1) = 0$$

Then, $x = +3/2$ or $x = -1/7$

II. $6y^2 + 7y - 24 = 0$

$$\Rightarrow 6y^2 + 16y - 9y - 24 = 0$$

$$\Rightarrow 2y(3y + 8) - 3(3y + 8) = 0$$

$$\Rightarrow (3y + 8)(2y - 3) = 0$$

Then, $x = -8/3$ or $y = +3/2$

So, when $x = +3/2$, $x > y$ for $y = -8/3$ and $x = y$ for $y = +3/2$

And when $x = -1/7$, $x > y$ for $y = -8/3$ and $x < y$ for $y = +3/2$

\therefore So, we can observe that no clear relationship cannot be determined between x and y .

110.

$$\text{I. } 2x^2 + 13x + 18 = 0$$

$$\Rightarrow 2x^2 + 4x + 9x + 18 = 0$$

$$\Rightarrow 2x(x + 2) + 9(x + 2) = 0$$

$$\Rightarrow (x + 2)(2x + 9) = 0$$

Then, $x = -2$ or $x = -9/2$

$$\text{II. } 4y^2 + 3y - 1 = 0$$

$$\Rightarrow 4y^2 + 4y - y - 1 = 0$$

$$\Rightarrow 4y(y + 1) - 1(y + 1) = 0$$

$$\Rightarrow (y + 1)(4y - 1) = 0$$

Then, $y = -1$ or $y = +1/4$

So, when $x = -2$, $x < y$ for $y = -1$ and $x < y$ for $y = +1/4$

And when $x = -9/2$, $x < y$ for $y = -1$ and $x < y$ for $y = +1/4$

\therefore So, we can clearly observe that $x < y$.

111.

Population of G = 8410

Number of females in G = $18/29 \times 8410 = 5220$

Number of uneducated females = $65\% \text{ of } 5220 = \frac{65 \times 5220}{100} = 3393$

Number of uneducated people in G = $17/29 \times 8410 = 4930$

Number of uneducated males in G = $4930 - 3393 = 1537$

112.

Number of uneducated people of area E = $\frac{13}{19} \times 3800 = 2600$

Number of educated people of area C = $\frac{4}{17} \times 3400 = 800$

∴ Required difference = $2600 - 800 = 1800$

113.

Number of educated people in area F = $\frac{8}{17} \times 5100 = 2400$

Number of educated people in area A = $\frac{7}{10} \times 2500 = 1750$

Required percentage = $\frac{2400-1750}{1750} \times 100 = 37.14\%$

114.

Seven Rural areas	Educated : Uneducated (A : B)	Population (N)	Number of educated people $N_E = \left(\frac{A}{A+B}\right) \times N$	Percentage of educated people $\frac{N_E}{N} \times 100$
A	7 : 3	2500	1750	70
B	11 : 13	5760	2640	45.83
C	4 : 13	3400	800	23.53
D	9 : 7	3200	1800	56.25
E	6 : 13	3800	1200	31.57
F	8 : 9	5100	2400	47.06
G	12 : 17	8410	3480	41.38

Clearly, area A has the maximum percentage of educated people.

115.

Total population of area D = 3200

$$\text{Number of uneducated people in area D} = \frac{7}{7+9} \times 3200 = \frac{7}{16} \times 3200 = 1400$$

∴ 40% of the uneducated people are males,

$$\text{Number of uneducated females} = 60\% \text{ of } 1400 = \frac{60 \times 1400}{100} = 840$$

116.

Harry has bought a pen for Rs. 50. He sold it to Monica at a profit of 30%.

$$\text{We know, Selling Price} = \text{Cost Price} \times \left(1 + \frac{\text{Profit Percentage}}{100}\right)$$

$$\text{Selling price for Harry} = \text{Cost price for Monica} = 50 \times \left(1 + \frac{30}{100}\right) = 65$$

$$\text{Selling price for Monica} = \text{Cost price for Chris} = 65 \times \left(1 + \frac{70}{100}\right) = 110.5$$

∴ Monica should sell the pen to Chris at Rs. 110.5.

117.

$$\text{Simple Interest} = (P \times R \times T)/100$$

Where, P = Principal, R = % rate of interest, T = time period in year

As per given information, Simple interest = 60% of principal

$$\therefore 0.6P = (P \times R \times 4)/100$$

$$\Rightarrow R = 15$$

Now let's find out the compound interest of Rs. 48,000 after 2 years at 10%

$$P = \text{Rs. } 48,000$$

$$T = 2 \text{ years}$$

$$R = 15\%$$

$$\begin{aligned} \text{Amount after 2 years} &= P\left(1 + \frac{R}{100}\right)^T = 48000\left(1 + \frac{15}{100}\right)^2 = 48000\left(\frac{115}{100}\right)^2 = 48000\left(\frac{23}{20}\right)^2 \\ &= 63480 \end{aligned}$$

$$\text{Compound Interest} = \text{Rs. } 63480 - \text{Rs. } 48000 = \text{Rs. } 15480$$



We know that the volume of a cylinder with base radius r cm. & height h cm. $= \pi \times r^2 \times h$

The volume of a cone with base radius r cm. & height h cm. $= \frac{1}{3} \times \pi \times r^2 \times h$

Now the cylindrical bucket of height 36 cm and radius 21 cm is filled with iron ore fine.

$$\therefore \text{Volume of iron ore fine present in the cylindrical bucket} = \pi \times 21^2 \times 36 = 49896 \text{ cm}^3$$

Now the same volume of iron ore fine is present in the conical heap of height 12 cm.

So if the base radius of the heap = w cm then we can write,

$$\frac{1}{3} \times \pi \times w^2 \times 12 = 49896$$

$$\Rightarrow w = 63 \text{ cm.}$$

The radius of the heap at the base is 63 cm.

119.

There are 3 vowels in word TESTBOOK, E, O and O. If there are vowels at first and last position, this is possible in 3 ways.

E at first and O at last, O at first and E at last, and O at both first and last.

In each of the three cases, the remaining six letters that have to come in between will be different except that T will be occur twice.

⇒ Remaining 6 letters can be arranged in $6!/2!$ Ways, i.e., 360 ways.

∴ Total number of ways in which this can be done = $3 \times 360 = 1080$

120.

Let the total work be 1 unit

40% of work completed in 25 days = 0.4 units = w_1

Remaining work = $1 - 0.4 = 0.6$ units = w_2

0.6 units of work need to be completed in 25 days

According to the question:

60 men completed 0.4 works in 25 days

$$\therefore \frac{m_1 d_1 h_1}{w_1} = \frac{m_2 d_2 h_2}{w_2}$$

$$\Rightarrow m_1 \times d_1 \times w_2 = m_2 \times d_2 \times w_1$$

$$\Rightarrow 60 \times 25 \times 0.6 = m_2 \times 25 \times 0.4$$

$$\Rightarrow m_2 = \frac{60 \times 25 \times 0.6}{0.4 \times 25}$$

$$\Rightarrow m_2 = 90 \text{ men}$$

$$\therefore \text{Number of additional men} = 90 - 60$$

Hence, Number of additional men required to complete the work on time is 30.

121.

The given series is in following pattern:

$$519 - 97 = 422$$

$$422 - 80 = 342$$

$$342 - 63 = 279$$

$$279 - 46 = 233$$

$$233 - 29 = 204$$

(difference decreases by 17)

So, the required number is 279.

122.

The pattern of given series is:

$$\rightarrow 9,$$

$$\rightarrow 16 = 9 \times 2 - 2,$$

$$\rightarrow 60 = 16 \times 4 - 4,$$

$$\rightarrow 354 = 60 \times 6 - 6,$$

$$\rightarrow 2824 = 354 \times 8 - 8,$$

$$\rightarrow ? = 2824 \times 10 - 10,$$

$$\rightarrow ? = 28230$$

Thus, the missing number is 28230.

123.

The given series is in following pattern:

$$1$$

$$1 + 7 = 8$$

$$8 + 14 = 22$$

$$22 + 21 = \underline{43} \neq \underline{45}$$

$$43 + 28 = 71$$

$$71 + 35 = 106$$

$$106 + 42 = 148$$

So, the wrong number is 45.



The given series is in the pattern:

$$\rightarrow 7 = 2^3 - 1^3$$

$$\rightarrow 37 = 4^3 - 3^3$$

$$\rightarrow 91 = 6^3 - 5^3$$

$$\rightarrow 167 \neq 8^3 - 7^3 = 169$$

$$\rightarrow 271 = 10^3 - 9^3$$

$$\rightarrow 397 = 12^3 - 11^3$$

So, the wrong term in the series is 167.

125.

The pattern of given series is:

$$\rightarrow 6,$$

$$\rightarrow 15 = 6 + 9,$$

$$\rightarrow 33 = 15 + 18, (9 \times 2 = 18)$$

$$\rightarrow 69 = 33 + 36, (18 \times 2 = 36)$$

$$\rightarrow 141 = 69 + 72, (36 \times 2 = 72)$$

$$\rightarrow 285 = 141 + 144, (72 \times 2 = 144)$$

Based on the above pattern we can create the following series

$$a : 11 = 2 + 9,$$

$$b : 29 = 11 + 18,$$

$$c : 65 = 29 + 36,$$

$$d : 137 = 65 + 72,$$

$$e : 281 = 137 + 144,$$

Hence, (e) = 281

Comp. 126 - 130
126.

testbook

∴ Turnover in Tanzania = \$ 40 million

∴ Turnover in Africa = \$ 120 million

∴ Turnover in Rest of Africa = $120 - 40 = \$ 80$ million

Items	Turnover of each item in Tanzania (in \$ millions)	Turnover of each item in Africa (in \$ millions)	Turnover of each item in Rest of Africa (in \$ millions)
Electrical Goods	20% of 40 = 8	15	$15 - 8 = 7$
Leather Goods	25% of 40 = 10	30	$30 - 10 = 20$

Garments	30% of 40 = 12	40	40 – 12 = 28
Handicrafts	10% of 40 = 4	20	20 – 4 = 16
Ivory Items	15% of 40 = 6	10	10 – 6 = 4
Others	0	5	5

Since turnover from Rest of Africa for Handicrafts increases by 20%

∴ New Turnover from rest of Africa for Handicrafts = 120% of 16 = 19.2 million

Also, since turnover from Tanzania for electrical goods decreases by 20%

∴ New Turnover from Tanzania for electrical goods = 80% of 8 = 6.4 million

∴ Required ratio = 6.4 : 19.2 = 1 : 3



∴ Turnover in Tanzania = \$ 40 million

∴ Turnover in Africa = \$ 120 million

∴ Turnover in Rest of Africa = 120 – 40 = \$ 80 million

Items	Turnover of each item in Tanzania (in \$ millions)	Turnover of each item in Africa (in \$ millions)	Turnover of each item in Rest of Africa (in \$ millions)
Electrical Goods	20% of 40 = 8	15	15 – 8 = 7
Leather Goods	25% of 40 = 10	30	30 – 10 = 20
Garments	30% of 40 = 12	40	40 – 12 = 28
Handicrafts	10% of 40 = 4	20	20 – 4 = 16

Ivory Items	15% of 40 = 6	10	$10 - 6 = 4$
Others	0	5	5

$$\therefore \text{Required percentage} = \frac{12+6}{15+30} \times 100 = \frac{18}{45} \times 100 = 40\%$$

128.

\therefore Turnover in Tanzania = \$ 40 million

\therefore Turnover in Africa = \$ 120 million

\therefore Turnover in Rest of Africa = $120 - 40 = \$ 80$ million

Items	Turnover of each item in Tanzania (in \$ millions)	Turnover of each item in Africa (in \$ millions)	Turnover of each item in Rest of Africa (in \$ millions)
Electrical Goods	20% of 40 = 8	15	$15 - 8 = 7$
Leather Goods	25% of 40 = 10	30	$30 - 10 = 20$
Garments	30% of 40 = 12	40	$40 - 12 = 28$
Handicrafts	10% of 40 = 4	20	$20 - 4 = 16$
Ivory Items	15% of 40 = 6	10	$10 - 6 = 4$
Others	0	5	5

\therefore Turnover from Tanzania for Electrical goods and Handicrafts = $8 + 4 = 12$ million

\therefore Turnover from Rest of Africa for Garments = 28 million

\therefore Required ratio = $12/28 = 0.428 \approx 0.43$

129.

∴ Turnover in Tanzania = \$ 40 million

∴ Turnover in Africa = \$ 120 million

∴ Turnover in Rest of Africa = $120 - 40 = \$ 80$ million

Items	Turnover of each item in Tanzania (in \$ millions)	Turnover of each item in Africa (in \$ millions)	Turnover of each item in Rest of Africa (in \$ millions)
Electrical Goods	20% of 40 = 8	15	$15 - 8 = 7$
Leather Goods	25% of 40 = 10	30	$30 - 10 = 20$
Garments	30% of 40 = 12	40	$40 - 12 = 28$
Handicrafts	10% of 40 = 4	20	$20 - 4 = 16$
Ivory Items	15% of 40 = 6	10	$10 - 6 = 4$
Others	0	5	5

∴ Turnover from Rest of Africa for Ivory and Handicrafts together = $16 + 4 = 20$ million∴ Turnover from Tanzania for Garments and Leather good together = $10 + 12 = 22$ million∴ Required ratio = $20:22 = 10:11$

130.

∴ Turnover in Tanzania = \$ 40 million

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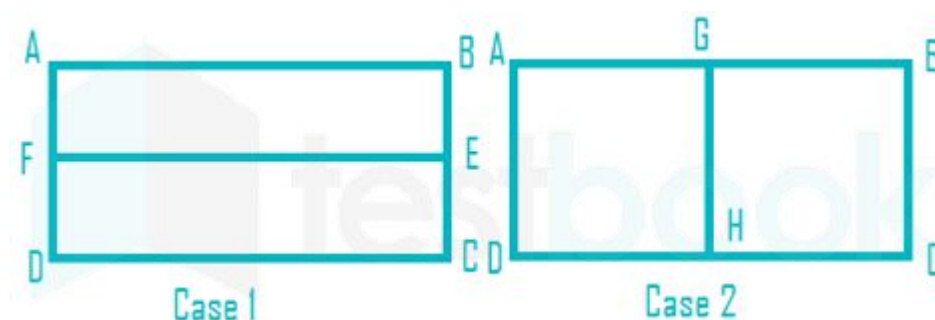
∴ Turnover in Africa = \$ 120 million

∴ Turnover in Rest of Africa = $120 - 40 = \$ 80$ million

Items	Turnover of each item in Tanzania (in \$ millions)	Turnover of each item in Africa (in \$ millions)	Turnover of each item in Rest of Africa (in \$ millions)
Electrical Goods	20% of 40 = 8	15	$15 - 8 = 7$
Leather Goods	25% of 40 = 10	30	$30 - 10 = 20$
Garments	30% of 40 = 12	40	$40 - 12 = 28$
Handicrafts	10% of 40 = 4	20	$20 - 4 = 16$
Ivory Items	15% of 40 = 6	10	$10 - 6 = 4$
Others	0	5	5

∴ Percentage of Rest of Africa turnover for Handicrafts = $\frac{16}{80} \times 100 = 20\%$

131.



ABCD is the rectangular paper.

Case 1: When folded along length.

According to the question, after folding the paper, two congruent parts form. ABEF & FECD.

The perimeter of each part is 48 cm.

⇒ If AB = L cm. & AD = B cm. then,

$$2 \times (B/2 + L) = 48$$

$$\Rightarrow 2L + B = 48 \quad \text{..... (1)}$$

Case 2: When folded along breadth.

According to the question, after folding the paper, two congruent parts form. AGHD & GHCB.

The perimeter of each part is 44 cm.

⇒ If AB = L cm. & AD = B cm. then,

$$2 \times (L/2 + B) = 44$$

$$\Rightarrow L + 2B = 44 \quad \text{..... (2)}$$

Solving (1) & (2) together we get,

$$B = 40/3 \text{ cm} \text{ \& } L = 52/3 \text{ cm.}$$

$$\text{Area of the paper} = L \times B \approx 231.11 \text{ sq. cm.}$$

132.

We know that,

$$\text{Average} = (\text{Sum of all observations}) / (\text{Number of observations})$$

$$\text{Average weight of A, B, C and D} = 82 \text{ kg}$$

$$(A + B + C + D) / 4 = 82$$

$$A + B + C + D = 328$$

When D is excluded, average weight of A, B and C = 86 kg

$$(A + B + C)/3 = 86$$

$$A + B + C = 258$$

$$D = 328 - 258 = 70 \text{ kg}$$

$$\text{Weight of E} = 70 + 3 = 73 \text{ kg}$$

$$(B + C + D + E)/4 = 80$$

$$B + C + D + E = 320$$

$$B + C = 320 - (70 + 73)$$

$$B + C = 177$$

$$A + B + C = 258$$

$$A = 258 - 177 = 81 \text{ kg}$$

133.

Speed = distance/time

Given that, in a 100m race, Abhishek and Srijan completed the race in 11.25 and 12.5 seconds, respectively.

Speed of Abhishek, $v_a = 100/11.25 \text{ m/sec}$

And speed of Srijan, $v_b = 100/12.5 \text{ m/sec}$

$$\text{Distance travelled by Srijan in 11.25 sec} = \frac{100}{12.5} \times 11.25 = 90\text{m}$$

$$\text{Distance travelled by Abhishek in 11.25 sec} = 100\text{m}$$

Thus, distance by which Abhishek beat Srijan = $100 - 90 = 10 \text{ m}$

134.

Ratio of savings and expenditure of Lucy in a month = 2:7

Ratio of savings and expenditure of Lucy's husband in a month = 1:3

Let us suppose that savings and expenditure of Lucy be $2t$ and $7t$, respectively,

and, let us suppose that savings and expenditure of Lucy's husband be y and $3y$, respectively,

If Lucy starts savings Rs. 1000 more,

Savings of Lucy = Savings of Lucy's husband.

$$2t + 1000 = y \text{ ----- (i)}$$

Also, total expenditure = Rs. 16000

$$7t + 3y = 16000 \text{ ----- (ii)}$$

Multiply equation (i) by 3 and add A to equation (ii)

$$3(2t + 1000) + 7t + 3y = 3y + 16000$$

$$\Rightarrow 6t + 3000 + 7t = 16000$$

$$13t = 13000$$

$$t = 1000$$

Substitute in equation (i)

$$2 \times 1000 + 1000 = y$$

$$\Rightarrow y = 3000$$

$$\therefore \text{Total savings in a month} = 2t + y = 2 \times 1000 + 3000 = 5000$$

$$\therefore \text{Total savings in a year} = 12 \times 5000 = \text{Rs. } 60000$$

135.

Let age of wife be W years.

When the child was born, the age of wife was two years less than husband. So, husband is two years elder than wife.

$$\Rightarrow \text{Age of husband} = (W + 2) \text{ years}$$

$$\Rightarrow \text{Age of child} = (55 - W - W - 2) \text{ years} = (53 - 2W) \text{ years}$$

After 9 years, the ratio of ages of husband and child will be 3:1.

$$\Rightarrow (W + 2 + 9) / (53 - 2W + 9) = 3/1$$

$$\Rightarrow W + 11 = 186 - 6W$$

$$\Rightarrow W = 175/7 = 25$$

\therefore Present age of wife is 25 years.



Let, Two digit number = $10x + y$

From statement I-

We can't conclude the number without knowing both the digits and there is no sufficient data given to find these two digits in the statement I, therefore this statement alone is not sufficient to answer the question.

From statement II-

We can't conclude the number without knowing both the digits and there is no sufficient data given to find these two digits in the statement II, therefore this statement alone is not sufficient to answer the question.

From statement I and II

Using both statement I and II

$$x - y = 7 \dots\dots(1)$$

$$x + y = 11 \dots(2)$$

$$(1) + (2)$$

$$x - y + x + y = 7 + 11$$

$$\Rightarrow 2x = 18$$

$$\Rightarrow x = 9$$

Putting $x = 9$ in equation (2)

$$y = 11 - 9 = 2$$

$$\therefore \text{Two digit number is} = 10 \times 9 + 2 = 92$$

The data in both the statements I and II together are necessary to answer the question.



Given, two friends Trishali and Krishna have their ages in ratio of 4:7

Statement A The ages of Trishali and Dhanus are in the ratio 4:2

$$\therefore \text{Ratio of ages Dhanush and Krishna} = 2 : 7$$

Let age of Dhanush be $2x$ years and of Krishna be $7x$ years

Statement B Six years later, the ratio of Dhanush's and Krishna's ages will be 5:6

\therefore after 6 years, age of Dhanush and Krishna will be $(2x + 6)$ and $(7x + 6)$ years respectively

$$\Rightarrow \frac{2x + 6}{7x + 6} = \frac{5}{6}$$

Thus, we need both the statements to find the age of Krishna.

138.

Given, total expense was Rs. 60, 000

$$\therefore A + B + C + D + E + F = 60,000 \text{ eq (1)}$$

Statement A Total of the expenses of A and E is Rs. 25, 000

$$\therefore A + E = 25000 \text{ eq (2)}$$

Statement B Total of the expenses of B and F is Rs. 15, 600.

$$\therefore B + F = 15600 \text{ eq (3)}$$

From eq 1, 2 and 3, we get

$$C + D = 19,400$$

We can't calculate expenses of C until we don't know expenses of D. Thus, we need more data to solve the problem.

139.

We have to calculate the age of class teacher.

Combining statement I, II & III:

There are 11 students in the class.

The average age of students and the teacher is 14 years.

The average of the teacher and student age is 3 years more than that of students.

Total age of students & teacher = (number of students + teacher) \times the average age of students and the teacher

$$\Rightarrow \text{Total age of students \& teacher} = 12 \times 14 = 168$$

From statement 3, average age of students only, $(14 - 3) = 11$

$$\Rightarrow \text{Total age of students} = \text{average age of students} \times \text{number of students}$$

⇒ Total age of students = $11 \times 11 = 121$

Age of teacher = Total age of students & teacher - Total age of students

⇒ Age of teacher = $168 - 121 = 47$ years

∴ All the three statements are required.

140.

Compounded amount at the end of n years, $A = P\left(1 + \frac{R}{100}\right)^t$

Where, P = principal amount = Rs.1000

Rate = r and n is time - period.

From statement I,

The interest after one year was Rs. 100/-

$n = 1$ year,

CI = Rs.100,

For the first year, CI = Simple interest

∴ SI = Rs.100

As, S.I = $(PRT/100)$

∴ $100 = (1000 \times R \times 1)/100$

⇒ $R = 10\%$

After $n = 3$ years, for C.I

$$A = 1000\left(1 + \frac{10}{100}\right)^3$$

$A = 1331$

⇒ CI = Rs.1331 – Rs.1000 = Rs.331

Thus, statement I alone is sufficient to reach at the solution.

From statement II,

The difference between simple and compound interest on a principal amount of Rs. 1,000 at the end of two years was Rs. 10

$$\therefore CI - SI = \text{Rs.}10$$

$$n = 3 \text{ years}$$

$$P = \text{Rs.}1000$$

$$\text{For 2 years, } CI - SI = (P \times R^2)/100^2$$

$$\therefore 10 = (1000 \times R^2)/100^2$$

$$\Rightarrow R^2 = 100$$

$$\Rightarrow R = 10\% (\because \text{rate cannot be negative})$$

$$\text{Compounded amount at the end of } n \text{ years, } A = P\left(1 + \frac{R}{100}\right)^t$$

Where, P = principal amount = Rs.1000

Rate = R = 10% and n is time - period. = 3 years

\therefore using above formula, we can find the compound interest for 3 years

$$\Rightarrow CI = \text{Rs.}331$$

Thus, statement II alone is sufficient to reach at the solution.

Thus, the data either in statement I alone or in statement II alone are sufficient to answer the question

141.

Given that total no. of people in the colony = 200, and the ratio of men to women = 3 : 2

$$\Rightarrow \text{No. of men in the colony} = \frac{3}{5} \times 200 = 120$$

$$\text{Hence, no. of women in the colony} = 200 - 120 = 80$$

Also, given that 60 % of people enjoy classical music only,

$$\Rightarrow \text{No. of people who enjoy classical music only} = \frac{60}{100} \times 200 = 120$$

And given that the ratio of men to women who enjoy classical music only is 7 : 5,

$$\Rightarrow \text{No. of men who enjoy classical music only} = \frac{7}{12} \times 120 = 70$$

$$\text{Hence, the no. of women who enjoy classical music only} = 120 - 70 = 50$$

To find the no. of women who enjoy only modern music, we use the following,

No. of women who enjoy only modern music = Total no. of women – No. of women who enjoy only classical – No. of women who enjoy both kinds of music

$$\Rightarrow \text{No. of women who enjoy only modern music} = 80 - 50 - 12 = 18$$

The ratio of men who enjoy both types of music to that of women who enjoy only modern music is known to be 1 : 3.

$$\begin{aligned} \Rightarrow \frac{\text{Men who enjoy both kinds of music}}{\text{Women who enjoy only modern music}} &= \frac{1}{3} \\ \Rightarrow \frac{\text{Men who enjoy both kinds of music}}{18} &= \frac{1}{3} \end{aligned}$$

$$\Rightarrow \text{Men who enjoy both kinds of music} = 18/3 = 6$$

We can now calculate the men who enjoy modern music only

No. of men who enjoy modern music only = Total men – No. of men who enjoy classical music only – Men who enjoy both types of music

$$\Rightarrow \text{No. of men who enjoy modern music only} = 120 - 70 - 6 = 44$$

The ratio of men who enjoy only classical music to that of men who enjoy only modern music is 70 : 44 (or) 35 : 22

142.

Given that total no. of people in the colony = 200, and the ratio of men to women = 3 : 2

$$\Rightarrow \text{No. of men in the colony} = \frac{3}{5} \times 200 = 120$$

Hence, no. of women in the colony = $200 - 120 = 80$

Also, given that 60 % of people enjoy classical music only,

$$\Rightarrow \text{No. of people who enjoy classical music only} = \frac{60}{100} \times 200 = 120$$

And given that the ratio of men to women who enjoy classical music only is 7 : 5,

$$\Rightarrow \text{No. of men who enjoy classical music only} = \frac{7}{12} \times 120 = 70$$

Hence, the no. of women who enjoy classical music only = $120 - 70 = 50$

To find the no. of women who enjoy only modern music, we use the following,

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$$\Rightarrow \text{Men who enjoy both kinds of music} = 18/3 = 6$$

We can now calculate the men who enjoy modern music only

No. of men who enjoy modern music only = Total men – No. of men who enjoy classical music only – Men who enjoy both types of music

$$\Rightarrow \text{No. of men who enjoy modern music only} = 120 - 70 - 6 = 44$$

143.

Given that total no. of people in the colony = 200, and the ratio of men to women = 3 : 2

$$\Rightarrow \text{No. of men in the colony} = \frac{3}{5} \times 200 = 120$$

$$\text{Hence, no. of women in the colony} = 200 - 120 = 80$$

Also, given that 60 % of people enjoy classical music only,

$$\Rightarrow \text{No. of people who enjoy classical music only} = \frac{60}{100} \times 200 = 120$$

And given that the ratio of men to women who enjoy classical music only is 7 : 5,

$$\Rightarrow \text{No. of men who enjoy classical music only} = \frac{7}{12} \times 120 = 70$$

$$\text{Hence, the no. of women who enjoy classical music only} = 120 - 70 = 50$$

To find the no. of women who enjoy only modern music, we use the following,

No. of women who enjoy only modern music = Total no. of women – No. of women who enjoy only classical – No. of women who enjoy both kinds of music

$$\Rightarrow \text{No. of women who enjoy only modern music} = 80 - 50 - 12 = 18$$

The ratio of men who enjoy both types of music to that of women who enjoy only modern music is known to be 1 : 3.

$$\Rightarrow \frac{\text{Men who enjoy both kinds of music}}{\text{Women who enjoy only modern music}} = \frac{1}{3}$$

$$\Rightarrow \frac{\text{Men who enjoy both kinds of music}}{18} = \frac{1}{3}$$

$$\Rightarrow \text{Men who enjoy both kinds of music} = 18/3 = 6$$

144

Given that total no. of people in the colony = 200, and the ratio of men to women = 3 : 2

$$\Rightarrow \text{No. of men in the colony} = \frac{3}{5} \times 200 = 120$$

$$\text{Hence, no. of women in the colony} = 200 - 120 = 80$$

Also, given that 60 % of people enjoy classical music only,

$$\Rightarrow \text{No. of people who enjoy classical music only} = \frac{60}{100} \times 200 = 120$$

And given that the ratio of men to women who enjoy classical music only is 7 : 5,

$$\Rightarrow \text{No. of men who enjoy classical music only} = \frac{7}{12} \times 120 = 70$$

$$\text{Hence, the no. of women who enjoy classical music only} = 120 - 70 = 50$$

To find the no. of women who enjoy only modern music, we use the following,

No. of women who enjoy only modern music = Total no. of women – No. of women who enjoy only classical – No. of women who enjoy both kinds of music

$$\Rightarrow \text{No. of women who enjoy only modern music} = 80 - 50 - 12 = 18$$

145

Given that total no. of people in the colony = 200, and the ratio of men to women = 3 : 2

$$\Rightarrow \text{No. of men in the colony} = \frac{3}{5} \times 200 = 120$$

$$\text{Hence, no. of women in the colony} = 200 - 120 = 80$$

Also, given that 60 % of people enjoy classical music only,

$$\Rightarrow \text{No. of people who enjoy classical music only} = \frac{60}{100} \times 200 = 120$$

And given that the ratio of men to women who enjoy classical music only is 7 : 5,

$$\Rightarrow \text{No. of men who enjoy classical music only} = \frac{7}{12} \times 120 = 70$$

146.

Let the length of the train be x m and the speed be y m/s.

While crossing a man, train covers a distance equal to its own length.

$$\therefore x/y = 5$$

$$\Rightarrow x = 5y$$

While crossing a platform, train covers a distance equal to its own length and length of platform.

$$\therefore \text{length of train and platform together} = (x + 154) \text{ m}$$

$$\therefore \frac{x + 154}{y} = 12$$

$$\Rightarrow x + 154 = 12y$$

$$\Rightarrow 5y + 154 = 12y \quad (\text{Putting the value } x = 5y)$$

$$\Rightarrow y = 154/7 = 22$$

$$\therefore \text{Length of the train} = 5 \times 22 = 110 \text{ m}$$

$$\text{Speed of the train} = 22 \text{ m/s}$$

147.

The unit's digit in the product of $(3127)^{174}$ as the unit digit therefore it will be dependent on 7^{174} so, we have to calculate the unit digit of 7^{174}

Now if we look at the powers of 7 mod 10 then we will get the unit digit

$$7^1 = 7 \rightarrow \text{unit's digit is } 7$$

$$7^2 = 49 \rightarrow \text{unit's digit is } 9$$

$$7^3 = 343 \rightarrow \text{unit's digit is } 3$$

$$7^4 = 2401 \rightarrow \text{unit's digit is } 1$$

$$7^5 \rightarrow \text{unit's digit is } 1 \times 7 = 7$$

Therefore the cycle repeats.

7^{174} will be equivalent to,

$$7^{174} = 7^{(4 \times 43) + 2} \rightarrow \text{unit's digit same as that in } 7^2 = 9$$

Hence, the unit digit is 9

148.

Suppose Adam bought T liters of milk.

$$\Rightarrow \text{Cost price for Adam} = T \times \text{Rs. } 50 = \text{Rs. } 50T$$

After mixing 12 liters of water, total quantity of mixture becomes $(T + 12)$ liters.

This mixture is sold at Rs. 60 per liter.

$$\Rightarrow \text{Selling price} = (T + 12) \times \text{Rs. } 60 = \text{Rs. } (60T + 720)$$

Profit earned = 32%

$$\text{We know, Selling Price} = \text{Cost Price} \times \left(1 + \frac{\text{ProfitPercentage}}{100}\right)$$

$$\Rightarrow 60T + 720 = 50T \times (1 + (32/100))$$

$$\Rightarrow 60T + 720 = 66T$$

$$\Rightarrow T = 720/6 = 120$$

\therefore Adam bought 120 liters of milk.

149.

Let's assume that P_A is the probability that event A occurs and P_B is the probability that event B occurs.

\therefore probability that A does not occur $= 1 - P_A$

\therefore probability that B does not occur $= 1 - P_B$

\therefore the two events are independent,

The probability that both occur $= P_A \times P_B = 1/12$

Similarly, the probability that neither A nor B occurs $= (1 - P_A) \times (1 - P_B) = 1/2$

$$\Rightarrow 1 - P_B - P_A + P_A.P_B = 1/2$$

$$\Rightarrow 1 - (P_A + P_B) = \frac{1}{2} - \frac{1}{12} = \frac{5}{12}$$

$$\Rightarrow P_A + P_B = 7/12 \quad \text{-----(i)}$$

We know that, $(P_A - P_B)^2 = (P_A + P_B)^2 - 4P_A.P_B$

$$\Rightarrow (P_A - P_B)^2 = \left(\frac{7}{12}\right)^2 - \left(4 \times \frac{1}{12}\right) = \frac{49}{144} - \frac{4}{12} = \frac{1}{144}$$

$$\Rightarrow P_A - P_B = 1/12 \text{ or } (-1/12) \quad \text{-----(ii)}$$

Solving equation (i) and (ii) simultaneously, gives:

$$P_A = 1/3 \text{ and } P_B = 1/4 \quad \text{OR} \quad P_A = 1/4 \text{ and } P_B = 1/3$$

$\therefore P_A = 1/3$ and $P_B = 1/4$ (or) $P_A = 1/4$ and $P_B = 1/3$ is the solution.

150.

Let's assume that '24x' kg each of Alloy M and Alloy N are mixed to form '48x' kg of Alloy P

\therefore the ratio Silver : Iron in Alloy M = 7 : 5

$$\Rightarrow \text{Amount of Silver in Alloy M} = \frac{7}{7+5} \times 24x = 14x \text{ kg}$$

$$\Rightarrow \text{Amount of Iron in Alloy M} = 24x - 14x = 10x \text{ kg}$$

\therefore the ratio Silver : Iron in Alloy N = 7 : 17

$$\Rightarrow \text{Amount of Silver in Alloy N} = \frac{7}{7+17} \times 24x = 7x \text{ kg}$$

$$\Rightarrow \text{Amount of Iron in Alloy N} = 24x - 7x = 17x \text{ kg}$$

\therefore They are mixed in equal quantities to make another alloy P of 48x kg.

\therefore Total amount of Silver in Alloy P = Total amount of Silver in Alloy M + total amount of silver in Alloy N

$$\Rightarrow \text{Total amount of Silver in Alloy P} = 14x + 7x = 21x$$

$$\text{Similarly, Total amount of Iron in Alloy P} = 10x + 17x = 27x$$

\therefore Ratio of Silver : Iron in Alloy P = $21x : 27x = 7 : 9$

Professional Knowledge: IT

151. Hierarchical databases do not use Indexes as relational databases do for searching procedures. The Hierarchical structured database is one of the first type of data model created, but is not as common as relational database. To be able to access a certain data entity within a hierarchical database require the

knowledge of which branch to start with and which route to take through each layer until the data are reached.

152. BIOS (basic input/output system) is the program a personal computer's microprocessor uses to get the computer system started after you turn it on. It also manages data flow between the computer's operating system and attached devices such as the hard disk, video adapter, keyboard, mouse and printer.
153. Bootstrap provides some options to style buttons like: btn-link, btn-danger, btn-warning, btn-success etc. but there is no btn-level style.
154. A denial of service attack is a cyber-attack where the perpetrator seeks to make a machine or network resource unavailable to its intended users by temporarily or indefinitely disrupting services of a host connected to the Internet. A DoS attack is analogous to a group of people crowding the entry door or gate to a shop or business, and not letting legitimate parties enter into the shop or business, disrupting normal operations.
155. Inter-thread communication) is a mechanism in which a thread is paused running in its critical section and another thread is allowed to enter (or lock) in the same critical section to be executed.
156. Seek time is time to position the head over particular track. Seek time is the time taken for a hard disk controller to locate a specific piece of stored data.
157. In order to produce high quality graphics (hardcopy) in colour, you would want to use a laser printer. A laser printer is a popular type of personal computer printer that uses a non-impact (keys don't strike the paper), photocopier technology. When a document is sent to the printer, a laser beam "draws" the document on a selenium-coated drum using electrical charges.
158. Dumb terminals are those that can interpret a limited number of control codes (CR, LF, etc.) but do not have the ability to process special escape sequences that perform functions such as clearing a line, clearing the screen, or controlling cursor position.

159. DML is provided for manipulation & processing of database. (Data stored in the database is processed or manipulated using data manipulation language commands as its name).
160. **'AS'** clause is used in SQL for rename operation. (e.g., SELECT ENO AS EMPLOYEE_NO FROM EMP).
161. **The abbreviation for ODBC is "Open Database Connectivity".** Open Database Connectivity (ODBC) is an open standard application programming interface (API) for accessing a database.
162. There are following three levels of architecture in a database: External Level, Conceptual Level, Internal Level.
163. Cartesian product in relational algebra is a binary operator. (It requires two operands. e.g., $P \times Q$).
164. The language which has recently become the defect to standard for interfacing application programs with relational database system is SQL.
165. In SQL schema, two types of relation schema may be defined. The term "schema" refers to the organization of data as a blueprint of how the database is constructed (divided into database tables in the case of relational databases). The formal definition of a database schema is a set of formulas (sentences) called integrity constraints imposed on a database.
166. When we reduce the number of tables in the schema, then we do not require schema normalization.
167. BCNF decomposition can always be lossless but dependency preservation is not guaranteed.
168. The entity relationship diagram is used to graphically represent the conceptual database model.
169. In Mutual Exclusion Condition the resources involved are non-shareable. i.e. At least one resource (thread) must be held in a non-shareable mode, that is, only one process at a time claims exclusive control of the resource. If another process requests that resource, the requesting process must be delayed until the resource has been released.
170. It requires knowledge of the future references.

171. A version of the UNIX operating system included TCP/IP. Unix is a family of multitasking, multiuser computer operating systems that derive from the original AT&T Unix, developed starting in the 1970s at the Bell Labs research center by Ken Thompson, Dennis Ritchie, and others.
172. TOS is not related to fragmentation in IPv4 datagram. It is a type of service, which identifies the type of packets.
173. UDP (User Datagram Protocol) is an alternative communications protocol to Transmission Control Protocol (TCP) used primarily for establishing low-latency and loss tolerating connections between applications on the Internet. TCP (Transmission Control Protocol) is a connection-oriented transport protocol, while UDP (User Datagram Protocol) is a connectionless network protocol.
174. TCP belongs to transport layer which is layer 4 in ISO-OSI model.
175. Some new two-layer switches, called cut-through switches, have been designed to forward the frame as soon as they check the MAC addresses in the header of the frame. cut-through switching is a method for packet switching systems, wherein the switch starts forwarding a frame (or packet) before the whole frame has been received, normally as soon as the destination address is processed.
176. To share a document with other computers which are connected to your LAN, you need to upload the document to a file server. A file server is a computer attached to a network that has the primary purpose of providing a location for shared disk access, i.e. shared storage of computer files (such as documents, sound files, photographs, movies, images, databases, etc.) that can be accessed by the workstations that are attached to the same computer network. The term server highlights the role of the machine in the client–server scheme, where the clients are the workstations using the storage.
177. Wide Area Network. A wide area network, or WAN, occupies a very large area, such as an entire country or the entire world. A WAN can contain multiple smaller networks, such as LANs or MANs. The Internet is the best-known example of a public WAN.

178. The function named `main` is a special function in all C++ programs; it is the function called when the program is run. The execution of all C++ programs begins with the `main` function, regardless of where the function is actually located within the code.
179. A character preceded by a backslash (\) is an *escape sequence* and has special meaning to the compiler. `\t` means insert a tab in the text at this point. `\r` means Insert a carriage return in the text at this point. `\\` means insert a backslash character in the text at this point. `\b` means Insert a backspace in the text at this point.
180. A linked list is a linear data structure where each element is a separate object. Each element (we will call it a node) of a list is comprising of two items - the data and a reference to the next node. Array is a kind of data structure that can store a fixed-size sequential collection of elements of the same type. Both Arrays and Linked List can be used to store linear data of similar types, but they both have some advantages and disadvantages over each other. All the given option is true about the difference between Linked List and array in data structure.
181. Carry bit is set when there is a carry from least significant four bits(lower nibble).
182. GUI stands for Graphic User Interface.
183. `<html>` should be the first tag in any HTML document. The `<html>` tag tells the browser that this is an HTML document. The `<html>` tag represents the root of an HTML document. The `<html>` tag is the container for all other HTML elements (except for the `<!DOCTYPE>` tag).
184. Object Oriented Programming supports the concept of class and object which help us understand the real time examples better. Vehicle is defined to be a class. Car, truck, bike are defined to be objects of the class, Vehicle.
185. Object-oriented programming organizes a program around its data (that is, objects) and a set of well-defined interfaces to that data.
186. Bottom up approach begins with details and moves to higher conceptual level there by reducing complexity and making the concept easier to understand.

187. Code reusability is one of the prominent advantages of using OOP. It can create more than one instance of a class without interference. In addition to that it is platform independent too.
188. **Java program is converted into 'byte code' which makes it easier to run on** wide variety of environments. Only the run-time package JVM has to be implemented for each platform.
189. A variable is a named memory location assigned a value by the program
190. Named function and Anonymous function are valid types of function that javascript supports. A Function Expression defines a function as a part of larger expression syntax (typically a variable assignment). Functions defined via Functions Expressions can be named or anonymous.
191. `document.cookie = 'key1 = value1; key2 = value2; expires = date';` is the correct syntax to create a cookie in JavaScript.
192. The client may create an unrealistic product vision leading a team to over or under-develop functionality. Also, the specialized & skilled developers are not easily available.
193. A counter is fundamentally a register sequential circuit that proceeds through the predetermined sequence of states only when input pulses are applied to it. A counter circuit is usually constructed of a number of flip-flops connected in cascade. Counters are a very widely used component in digital circuits, and are manufactured as separate integrated circuits and also incorporated as parts of larger integrated circuits.
194. DMA (Direct memory access) is the functionality which is used when an I/O device wants to access main memory, without wasting cpu time.
195. In interrupt recognized condition PSW is saved in stack. The Program status word (PSW) is an IBM System/360 architecture and successors control register which performs the function of a Status register and Program counter in other architectures, and more.
196. When CPU is executing a Program that is part of the Operating System, it is said to be in System mode.

197. Generally dynamic RAM is used as main memory in a computer system as it has higher speed. DRAM is widely used in digital electronics where low-cost and high-capacity memory is required. One of the largest applications for DRAM is the main memory (colloquially called the "RAM") in modern computers; and as the main memories of components used in these computers such as graphics cards (where the "main memory" is called the graphics memory). In contrast, SRAM, which is faster and more expensive than DRAM, is typically used where speed is of greater concern than cost, such as the cache memories in processors.
198. In a vectored interrupt, the interrupting source supplies the branch information to the processor through an interrupt vector. An interrupt vector is the memory location of an interrupt handler, which prioritizes interrupts and saves them in a queue if more than one interrupt is waiting to be handled.
199. Total regions are $= e - v + 2$, in which one is open and rest are closed.
200. All bipartite graphs are 2 colorable, i.e. two colors are sufficient to color such graphs such that no two adjacent vertices will have the same color, hence they are bi-chromatic.

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