## Solutions

1. Ans. E.

All the statements are correct and option E is the correct answer.
2. Ans. B.

Option B is the correct answer as states in the second paragraph.
3. Ans. E.

Option E is the correct answer as all the others state the opposite of what the author believes.
4. Ans. A.

Option A is the correct answer as the politicians have failed to identify the root cause of the problem.
5. Ans. B.

Option B is the correct answer as it carries the meaning of the "evidence".
6. Ans. C.

Option C is the correct answer as embark means to take up, while reject means to not agree to take.
7. Ans. E.

All the three statements use the word "hamper" in the correct form. In the first and the second sentence, the word has been used as a verb in the present and the past tense respectively. "Hamper" means to cause hindrance. The third sentence uses the word as a noun which means a basket or a container. The word fits appropriately in the given question. Since the word has been used correctly in all the sentences, option E is the correct answer.
8. Ans. D.

Tact- skill and sensitivity in dealing with others or with difficult issues
Tactfully - with skill and sensitivity in dealing with others or with difficult issues
Tactful- having or showing skill and sensitivity in dealing with others or with difficult issues "Tactful" fits in statement I as an adjective is required to define the judge.
"Tact" fits in statement III as it has been correctly used as a noun in the sentence.
"Tactfully" is an adverb which can modify a verb, an adjective or another adverb. The word does not fit in the second sentence as one cannot come up with a "tactfully", but with a tact.
Since only statements I and III are correct, option $D$ is the correct answer.
9. Ans. A.
"Adage" is a noun which means a proverb or short statement expressing a general truth. The word cannot be used in the verb or a gerund form, thus, statements II and III are incorrect. The word has been used correctly only in statement I. Thus, option A is the correct answer.
10. Ans. B.
"Malaise" (noun) means uneasiness or restlessness. The word has been correctly used only in statement II. The other two sentences use the forms of the sentence which do not exist in the Standard English language. Thus, option B is the correct answer.
11. Ans. E.

Vedas do not have any relation to Theory of Relativity. When we use 'rather', we mention the opposite of that action in the next phrase. Since, circular and linear are opposite, A \& E go together. The Rath Yatra temple cars are indeed massive. So, $C \& F$ go together. Hence, the correct answer is E .
12. Ans. C.

All the given sentences are about oceans. Nothing is related to farmers. B ends with 'around' which indicates there must be a location mentioned in the next part of the statement. None of the clauses in column II does that. Both D \& F can follow A. But when talking about size compared to that of France, we cannot say that just $80 \%$ of the trash is twice the size of France. The trash is not separated. So, D will follow C and F will follow A . Hence, the correct answer is C .

## 13. Ans. A.

Statement A ends with 'completely', an adverb. This means the part following it must start with a main verb. None of the clauses in column II do so. Statement C ends with 'of' which indicates that the next part must describe an attribute of the subject (Unsustainable fishing practices). Grammatically, both E \& F can do that. But, we are talking about "water-repellent properties". Marine animals have water repellent properties, not oceans. So, F would be more appropriate after C. Statement D is missing an auxiliary verb and none of the clauses in column is ending with an auxiliary verb. So, this leaves us with B \& E that would go together. Hence, the correct answer is A .

## 14. Ans. D.

There is only one 'social media market giant' in column I, i.e. is Facebook. So, B goes with F. There is nothing in column I that has to be 'known better'. Also, there is no singular Indian woman mentioned. Hence, the correct answer is D.
15. Ans. B.

Care of calves and humans cannot be picked up for listening. So, B goes with F. Preferring one appendage over another, is a habit also see in humans i.e. being right or left handed. So, A \& E go together. Older females do care of the young ones. so, C goes with D. hence, the correct answer is B. 16. Ans. A.
"Displacing" is a continuous verb which does not make much sense here. Thus, "displacement" should be written instead of "displacing". Also, sentence talks about climatic changes, thus, the word "weather" should be used instead of the conjunction "whether". Since only (i) is correct, thus, option A is the correct answer.
Note that "weather" (alternative i) and whether (alternative ii) are two different words carrying different meanings.
17. Ans. B.

The subject here is "incidents" which is plural, thus, the verb should be plural too. Hence, "have" should be used instead of "has". Moreover, 'spotlight in' will get replaced by the 'spotlight on' as there should be a proper use of preposition. To put spotlight on something means to highlight something. Thus, Option B is the correct answer. 18. Ans. C.
"Cost" is a singular subject, thus the auxiliary verb "is" should be used. Thus, option C is the correct answer.
"More" represents comparative degree, hence, "the" cannot be used before it, hence, (ii) is incorrect.
Thus, option C is the correct answer.
19. Ans. A.
"Six" is a plural number, thus, 'years' should be in plural as the preposition "of" is used after it. In contrast, in compound nouns, the singular forms are used. E.G. I saw a ten yearold boy steal from the shop.
Additionally, in the highlighted part, the phrase "in qualitatively" is incorrect as "qualitatively" is an adverb. To make the sentence correct, the noun "quality" should be used. Since (i) makes both the corrections, option A is the correct answer.
20. Ans. A.

The subject here is "meritocracy", hence, the singular verb "has" should be used instead of "have". "Examing" as given in alternative (iii) is not a word in Standard English, hence incorrect. Thus, option A is the answer.
21. Ans. B.

The error is in part B of the sentence, which means the word "underline" has been used wrongly here. Note that the word mentioned after "underline" is "problem", which is a noun. So, we need an adjective to modify this noun. Thus, "underlined" should replace the highlighted word mentioned in B. An underlined problem means an emphasised problem.
22. Ans. B.

The error is in part B of the sentence, which means the word "vertebrate" has been used wrongly here. Note that the sentence mentions that the heat causes some action in the molecules, which means we need a verb instead of the noun "vertebrate" (an animal of a large group distinguished by the possession of a backbone or spinal column). Thus, the word "vibrate" must be used which means move continuously and rapidly to and fro.
23. Ans. B.

Fleet is the collective noun used for ships. Here, 'fleets' has been used in the first part, which needs to be replaced with 'ships'.
24. Ans. B.

Dew should be replaced by due. Dew means tiny drops of water that form on cool surfaces at night, when atmospheric vapour condenses. Due to means owing to something or because of something.
25. Ans. A.

Here "creating" should be used in place of "created" in order to make sentence context appropriate.
26. Ans. B.

The usage of "however" suggests that a contradiction to a mentioned clause will be presented in the second clause. Hence, the sentence cannot start with the conjunction. This eliminates options D and E. C cannot begin the sentence either as it would fail to make a logical sentence. E cannot immediately follow C, thus, the correct sequence is DBCAE and option B is the correct answer.
27. Ans. B.

Option B is the correct answer and the correct sequence is $A B C D E$.
28. Ans. C.

Option C is the correct answer and the correct order is DCABE.
29. Ans. D.

The correct order id ADEBC and option D is the correct answer.
30. Ans. E.

AEDBC is the correct order and option E is the correct answer.
31. Ans. E.

Hence, there are total 26 person in the row.
32. Ans. A.

Hence, J sit $2^{\text {nd }}$ to left of $M$.
33. Ans. C.

Eight people sits between M and P.
34. Ans. B.
A) J sits to the right of K. $\Rightarrow$ False
B) Seven people are sitting between $N$ and
R. $\Rightarrow$ True
C) Less than 10 people sits between $P$ and
L. $\Rightarrow$ False
D) 10 People sits between J and P. $\Rightarrow$ False
35. Ans. A.

1) 3 persons are sitting between $M$ and $N$.
2) $K$ is third to the right of $N$.
3) $K$ is second to the left of $P$.
(Image)
4) Number of people between $M$ and $P$ is same as the number of people between M and L .
(Here case - 2 will gets neglected as there is no space for $L$ to sit.)
5) Only three people sit to the left of $L$.
6) Six people sit between $L$ and $J$.
7) Two people sit between $P$ and $R$.
8) $R$ is sitting at second position from one of the ends.
(image - 2)
Above arrangement will be final arrangement.
36. Ans. D.

G sit $3^{\text {rd }}$ to right of H .
37. Ans. D.

I sit immediate left of $E$.
38. Ans. C.
I. G is facing inside. $\Rightarrow$ False (as G faces outside)
II. H is an immediate neighbour of $\mathrm{J} . \Rightarrow$ False ( H is $3^{\text {rd }}$ to left of J)
III. G is sitting to the immediate left of $\mathrm{K} . \Rightarrow$ True Hence, Only conclusion III follows.
39. Ans. E.

F, J, G, I $\rightarrow$ Group of people sitting at corner.
$\mathrm{K} \rightarrow$ sit at middle of row.
Hence, K does not belong to the group.
40. Ans. D.

People: D, E, F, G, H, I, J and K.
Note - 1: 4 sit at corner facing outside and 4 sit in the middle of row facing centre.

1) E does not sit at any of the corners of the table. (Therefore, $E$ sit at middle of the row)
2) Only 3 people sit between $D$ and $E$.
3) $D$ is not an immediate neighbour of sits second to the left of $K$ is neither an immediate neighbour of I nor J.
(Image)
4) F sits second to the right of $G$ only 3 people sit between F and J .
5) Only 1 person sits between J and I (either form left or right).
(Now only leftover person is H and will sit in only left place)
(image)
Above arrangement will be final arrangement.
When we count right of $\mathrm{J}, \mathrm{K}$ is an immediate neighbour of J.
Hence, none sit between J and K when counted from right of J.
41. Ans. A.

If $P$ is father-in-law of $F$, then $C$ is wife of $F$. $C$ is grandmother of $U$.
42. Ans. B.

H is daughter of F .
43. Ans. A.

Member: C, D, H, N, P, S and U
(Image - 1)
Hence, N is grandson of D .
44. Ans. A.

Given: $A \geq B>F ; B>M>O ; F>S ; R<S$ Conclusion:
I. $\mathrm{S}<\mathrm{A} \Rightarrow$ True (as A $>\mathrm{F}>\mathrm{S}$ )
II. $\mathrm{F}<\mathrm{O} \Rightarrow$ False (as $\mathrm{B}>\mathrm{F}$; $\mathrm{B}>\mathrm{O}$ therefore we can't find exact relationship between them)
Hence, only conclusion I follows.
45. Ans. E.

Given: $D \leq R>E \leq B ; S \leq M$
$=E>D ; G>B$

## Conclusion:

I. $\mathrm{D}>\mathrm{G} \Rightarrow$ False
(as $\mathrm{E} \leq \mathrm{B} ; \mathrm{E}>\mathrm{D}$ and
$\mathrm{G}>\mathrm{B} \rightarrow \mathrm{G}>\mathrm{B} \geq \mathrm{E}>\mathrm{D} \rightarrow \mathrm{G}>\mathrm{D})$
II. $B<R \Rightarrow$ False ( $D \leq R>E$ and $B \geq E>$
$D \rightarrow B \geq E>D \leq R)$
Hence, Neither I nor II follows.
46. Ans. C.

Given: $\mathrm{E} \leq \mathrm{S}>\mathrm{F} \leq \mathrm{C} ; \mathrm{T} \leq \mathrm{N}=\mathrm{F}>\mathrm{E} ; \mathrm{H}>\mathrm{C}$ Conclusion:

1) $\mathrm{T}<\mathrm{C} \Rightarrow$ False (as $\mathrm{F} \leq \mathrm{C} ; \mathrm{T} \leq \mathrm{N}=\mathrm{F} \Rightarrow \mathrm{T} \leq \mathrm{F} \leq \mathrm{C}$ therefore $\mathrm{T} \leq \mathrm{C}$ )
2) $\mathrm{C}=\mathrm{T} \Rightarrow$ False
(as $\mathrm{F} \leq \mathrm{C} ; \mathrm{T} \leq \mathrm{N}=\mathrm{F} \Rightarrow \mathrm{T} \leq \mathrm{F} \leq \mathrm{C}$ therefore $\mathrm{T} \leq \mathrm{C}$ )
As $\mathrm{T} \leq \mathrm{C}$ therefore either $\mathrm{T}<\mathrm{C}$ or $\mathrm{T}=\mathrm{C}$.
Hence, either I or II follows.
47. Ans. D.

Given: $M=L \geq M \geq Q<P<V \geq S ; Q>G$
On Combining: $M=L \geq M \geq Q>G ; G<P<V \geq$ S

## Conclusion:

1) $G \geq S \Rightarrow$ False (as $G<P<V \geq S$ therefore we can't find any relationship between $G$ and $S$ )
2) $\mathrm{M}>\mathrm{G} \Rightarrow$ True (as $M=L \geq M \geq Q>G$ ) Hence, Only conclusion II follows.
48. Ans. D.

Given: $Q>A \geq Z \leq X \leq C ; Z \geq H$
On combining: $\mathrm{Q}>\mathrm{A} \geq \mathrm{Z} \geq \mathrm{H} ; \mathrm{H} \leq \mathrm{Z} \leq \mathrm{X} \leq \mathrm{C}$ Conclusion:

1) $\mathrm{Q}>\mathrm{H} \Rightarrow$ True
(asQ $>\mathrm{A} \geq \mathrm{Z} \geq \mathrm{H}$ )
2) $Z \leq C \Rightarrow$ True
(as $\mathrm{H} \leq \mathrm{Z} \leq \mathrm{X} \leq \mathrm{C}$ )
Hence, both conclusion I and II follows.
49. Ans. B.
1) There are 5 boxes between box $P$ and box $R$.
2) Box $T$ is kept immediately above $R$.
3) 3 boxes are kept between box $T$ and box $S$.

| Case-1 | Case-2 |
| :--- | :--- |
|  | $T$ |
| $P$ | $R$ |
| $S$ |  |
|  |  |
|  | $S$ |
|  |  |
| $T$ |  |
| $R$ | $P$ |
|  |  |

4) Number of boxes between $P$ and $S$ is same as the number of boxes between T and Q .

| Case-1 | Case-2 |
| :--- | :--- |
|  | $T$ |
| $P$ | $R$ |
| $S$ |  |
|  | Q |
|  | $S$ |
| $Q$ |  |
| $T$ |  |
| $R$ | $P$ |
|  |  |

5) Box $U$ is kept below box $Q$.
6) There is only one box kept between $U$ and $V$.
(Therefore Case - 1 will gets eliminated)
7) Box $W$ is kept somewhere below $X$.

| Case-2 |
| :--- |
| $T$ |
| $R$ |
| $X$ |
| $Q$ |
| $S$ |
| $W$ |
| $U$ |
| $P$ |
| $V$ |

Above arrangement is final.
I. Two boxes between T and Q. $\Rightarrow$ True
II. S is kept below W. $\Rightarrow$ False ( S is kept above W )
III. U is kept immediately above P. $\Rightarrow$ True Hence, only II is not true.
50. Ans. A.

1) There are 5 boxes between box $P$ and box $R$.
2) Box $T$ is kept immediately above $R$.
3) 3 boxes are kept between box $T$ and box $S$.

| Case-1 | Case-2 |
| :--- | :--- |
|  | T |
| P | R |
| S |  |
|  |  |
|  | S |
|  |  |
| T |  |
| R | P |
|  |  |

4) Number of boxes between $P$ and $S$ is same as the number of boxes between T and Q .

| Case-1 | Case-2 |
| :--- | :--- |
|  | T |
| P | R |
| S |  |
|  | Q |
|  | S |
| Q |  |
| T |  |
| R | P |
|  |  |

5) Box $U$ is kept below box $Q$.
6) There is only one box kept between $U$ and $V$.
(Therefore Case - 1 will gets eliminated)
7) Box $W$ is kept somewhere below $X$.

| Case - 2 |
| :--- |
| T |
| R |
| X |
| Q |
| S |
| W |
| U |
| P |
| V |

Above arrangement is final.
$\mathbf{V}$ is related $\mathbf{P} \Rightarrow \mathrm{V}$ is immediately below $P$.
$Q$ is related to $X \Rightarrow Q$ is immediately below $X$.
Similarly, U is immediately below W .
Hence, U is related to W .
51. Ans. D.

1) There are 5 boxes between box $P$ and box $R$.
2) Box $T$ is kept immediately above $R$.
3) 3 boxes are kept between box $T$ and box $S$.

| Case-1 | Case-2 |
| :--- | :--- |
|  | $T$ |
| $P$ | $R$ |
| $S$ |  |
|  |  |
|  | $S$ |
|  |  |
| $T$ |  |
| $R$ | $P$ |
|  |  |

4) Number of boxes between $P$ and $S$ is same as the number of boxes between T and Q .

| Case-1 | Case-2 |
| :--- | :--- |
|  | T |
| P | R |
| S |  |
|  | Q |
|  | S |
| Q |  |
| T |  |
| R | P |
|  |  |

5) Box $U$ is kept below box $Q$.
6) There is only one box kept between $U$ and $V$.
(Therefore Case - 1 will gets eliminated)
7) Box $W$ is kept somewhere below $X$.


Above arrangement is final.
Four boxes kept between $P$ and $X$.
52. Ans. A.

1) There are 5 boxes between box $P$ and box $R$.
2) Box $T$ is kept immediately above $R$.
3) 3 boxes are kept between box $T$ and box $S$.

| Case - 1 | Case - 2 |
| :--- | :--- |
|  | $T$ |
| $P$ | $R$ |
| $S$ |  |
|  |  |
|  | $S$ |
|  |  |
| $T$ |  |
| $R$ | $P$ |
|  |  |

4) Number of boxes between $P$ and $S$ is same as the number of boxes between T and Q .

| Case-1 | Case-2 |
| :--- | :--- |
|  | $T$ |
| $P$ | $R$ |
| $S$ |  |
|  | $Q$ |
|  | $S$ |
| $Q$ |  |
| $T$ |  |
| $R$ | $P$ |
|  |  |

5) Box $U$ is kept below box $Q$.
6) There is only one box kept between $U$ and $V$.
(Therefore Case - 1 will gets eliminated)
7) Box $W$ is kept somewhere below $X$.

| Case - 2 |
| :--- |
| $T$ |
| $R$ |
| $X$ |
| $Q$ |
| $S$ |
| $W$ |
| $U$ |
| $P$ |
| V |

Above arrangement is final.
Box immediately above $\mathrm{Q} \Rightarrow \mathrm{X}$
Box Immediately below $\mathrm{Q} \Rightarrow \mathrm{S}$
Hence, XS is the pair of box is kept immediately above and below box Q respectively
53. Ans. D.

1) There are 5 boxes between box $P$ and box $R$.
2) Box $T$ is kept immediately above $R$.
3) 3 boxes are kept between box $T$ and box $S$.

| Case - 1 | Case-2 |
| :--- | :--- |
|  | $T$ |
| $P$ | $R$ |
| $S$ |  |
|  |  |
|  | $S$ |
|  |  |
| $T$ |  |
| $R$ | $P$ |
|  |  |

4) Number of boxes between $P$ and $S$ is same as the number of boxes between T and Q .

| Case-1 | Case-2 |
| :--- | :--- |
|  | $T$ |
| $P$ | $R$ |
| $S$ |  |
|  | $Q$ |
|  | $S$ |
| $Q$ |  |
| $T$ |  |
| $R$ | $P$ |
|  |  |

5) Box $U$ is kept below box $Q$.
6) There is only one box kept between $U$ and V.
(Therefore Case - 1 will gets eliminated)
7) Box W is kept somewhere below X .

| Case - 2 |
| :--- |
| $T$ |
| $R$ |
| $X$ |
| Q |
| S |
| W |
| U |
| P |
| V |

Above arrangement is final.
Position of box W is fourth form bottom.
54. Ans. A.

## Given Word: UNDERNEATH

first, fourth, sixth and ninth letters are U, E, N, T Word formed $\Rightarrow$ TUNE
First letter of word is ' ${ }^{\prime}$ '.
55. Ans. A.

| Letter | T | R | A | N | S | P | O | R | T |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Number | 20 | 18 | 1 | 14 | 19 | 16 | 15 | 18 | 20 |

Pairs $\rightarrow$ PO, NR, PR, NP
Hence, there are four such pairs.
56. Ans. B.

Person: P, Q, R, S, T, U, V and W
Birth year: 1945, 1956, 1961, 1973, 1978, 1989, 1996 and 2007

1) $S$ was born in an odd number year.
2) The difference between the present age of $S$ and V is 5 .
(as difference of 5 year is of between person born in 1956 and 1961 and person born in 1973 and 1978 as S born in odd numbered year therefore S born either in 1961 or 1973 and V born in 1956 and 1978)
3) Only 3 people were born between V and T .

|  |  | Case - <br> 1 | Case - <br> 2 |
| :--- | :--- | :--- | :--- |
| Year | Age | Person | Person |
| 1945 | 73 |  | T |
| 1956 | 62 | V |  |
| 1961 | 57 | S |  |
| 1973 | 45 |  | S |
| 1978 | 40 |  | V |
| 1989 | 29 | T |  |
| 1996 | 22 |  |  |
| 2007 | 11 |  |  |

4) As many people were born between $T$ and $Q$ as between $T$ and $P$.
(As we can see in above table it is only possibility that $P$ and $Q$ born just before and after T or only one person between born between P and T and T and Q)
(here case - 2 will gets eliminated as in this case it is not possible that people born between $T$ and $P$ is same as T and Q)
5) The present age of $W$ is twice the present age of Q.
(This is only possible if Q age is 11 year and W age is 22 year)

|  |  | Case-1 |
| :--- | :--- | :--- |
| Year | Age | Person |
| 1945 | 73 |  |
| 1956 | 62 | V |
| 1961 | 57 | S |
| 1973 | 45 | P |
| 1978 | 40 |  |
| 1989 | 29 | T |
| 1996 | 22 | W |
| 2007 | 11 | Q |

5) $R$ was born in one of the years before $P$.
(Now only U is left and only birthyear left is 1978.

Therefore, U born in 1978)

| Year | Age | Person |
| :--- | :--- | :--- |
| 1945 | 73 | R |
| 1956 | 62 | V |
| 1961 | 57 | S |
| 1973 | 45 | P |
| 1978 | 40 | U |
| 1989 | 29 | T |
| 1996 | 22 | W |
| 2007 | 11 | Q |

Above combination will be final combination. $S$ born in 1961 therefore current age of $S \Rightarrow 57$ years
Age of S after 4 year $=57+4=61$ years.
57. Ans. E.

Person: P, Q, R, S, T, U, V and W
Birth year: 1945, 1956, 1961, 1973, 1978, 1989, 1996 and 2007

1) $S$ was born in an odd number year.
2) The difference between the present age of $S$ and V is 5 .
(as difference of 5 year is of between person born in 1956 and 1961 and person born in 1973 and 1978 as S born in odd numbered year therefore S born either in 1961 or 1973 and V born in 1956 and 1978)
3) Only 3 people were born between $V$ and $T$.

|  |  | Case - <br> 1 | Case - <br> 2 |
| :--- | :--- | :--- | :--- |
| Year | Age | Person | Person |
| 1945 | 73 |  | T |
| 1956 | 62 | V |  |
| 1961 | 57 | S |  |
| 1973 | 45 |  | S |
| 1978 | 40 |  | V |
| 1989 | 29 | T |  |
| 1996 | 22 |  |  |
| 2007 | 11 |  |  |

4) As many people were born between $T$ and $Q$ as between $T$ and $P$.
(As we can see in above table it is only possibility that $P$ and $Q$ born just before and after T or only one person between born between P and T and T and Q)
(here case -2 will gets eliminated as in this case it is not possible that people born between $T$ and $P$ is same as $T$ and Q)
5) The present age of $W$ is twice the present age of Q.
(This is only possible if Q age is 11 year and W age is 22 year)

|  |  | Case - 1 |
| :--- | :--- | :--- |
| Year | Age | Person |
| $\mathbf{1 9 4 5}$ | 73 |  |
| $\mathbf{1 9 5 6}$ | 62 | V |
| $\mathbf{1 9 6 1}$ | 57 | S |
| $\mathbf{1 9 7 3}$ | 45 | P |
| $\mathbf{1 9 7 8}$ | 40 |  |
| $\mathbf{1 9 8 9}$ | 29 | T |
| $\mathbf{1 9 9 6}$ | 22 | W |
| $\mathbf{2 0 0 7}$ | 11 | Q |

5) $R$ was born in one of the years before $P$.
(Now only U is left and only birthyear left is 1978.
Therefore, U born in 1978)

| Year | Age | Person |
| :--- | :--- | :--- |
| 1945 | 73 | R |
| 1956 | 62 | V |
| 1961 | 57 | S |
| 1973 | 45 | P |
| 1978 | 40 | U |
| 1989 | 29 | T |
| 1996 | 22 | W |
| 2007 | 11 | Q |

Above combination will be final combination.
T born before W and after U .
58. Ans. A.

Person: P, Q, R, S, T, U, V and W
Birth year: 1945, 1956, 1961, 1973, 1978, 1989, 1996 and 2007

1) $S$ was born in an odd number year.
2) The difference between the present age of $S$ and $V$ is 5 .
(as difference of 5 year is of between person born in 1956 and 1961 and person born in 1973 and 1978 as S born in odd numbered year therefore S born either in 1961 or 1973 and V born in 1956 and 1978)
3) Only 3 people were born between $V$ and $T$.

|  |  | Case - <br> 1 | Case - <br> 2 |
| :--- | :--- | :--- | :--- |
| Year | Age | Person | Person |
| 1945 | 73 |  | T |
| 1956 | 62 | V |  |
| 1961 | 57 | S |  |
| 1973 | 45 |  | S |
| 1978 | 40 |  | V |
| 1989 | 29 | T |  |
| 1996 | 22 |  |  |
| 2007 | 11 |  |  |

4) As many people were born between $T$ and $Q$ as between $T$ and $P$.
(As we can see in above table it is only possibility that $P$ and Q born just before and after T or only one person between born between P and T and T and Q)
(here case - 2 will gets eliminated as in this case it is not possible that people born between $T$ and $P$ is same as T and Q)
5) The present age of $W$ is twice the present age of Q.
(This is only possible if Q age is 11 year and W age is 22 year)

|  |  | Case - 1 |
| :--- | :--- | :--- |
| Year | Age | Person |
| 1945 | 73 |  |
| 1956 | 62 | V |
| 1961 | 57 | S |
| 1973 | 45 | P |
| 1978 | 40 |  |
| 1989 | 29 | T |
| 1996 | 22 | W |
| 2007 | 11 | Q |

5) $R$ was born in one of the years before $P$.
(Now only $U$ is left and only birthyear left is 1978.
Therefore, U born in 1978)

| Year | Age | Person |
| :--- | :--- | :--- |
| 1945 | 73 | R |
| 1956 | 62 | V |
| 1961 | 57 | S |
| 1973 | 45 | P |
| 1978 | 40 | U |
| 1989 | 29 | T |
| 1996 | 22 | W |
| 2007 | 11 | Q |

Above combination will be final combination.
$S$ born in 1961 therefore age of $S \Rightarrow 57$ years
$R$ born in 1945 therefore age of $R \Rightarrow 73$ years
Difference between the ages of
S and $R=73-57$
$=16$ years
59. Ans. C.

Person: P, Q, R, S, T, U, V and W
Birth year: 1945, 1956, 1961, 1973, 1978, 1989, 1996 and 2007

1) $S$ was born in an odd number year.
2) The difference between the present age of $S$ and $V$ is 5 .
(as difference of 5 year is of between person born in 1956 and 1961 and person born in 1973 and 1978 as S born in odd numbered year therefore S born either in 1961 or 1973 and V born in 1956 and 1978)
3) Only 3 people were born between $V$ and $T$.

|  |  | Case - <br> 1 | Case - <br> 2 |
| :--- | :--- | :--- | :--- |
| Year | Age | Person | Person |
| 1945 | 73 |  | T |
| 1956 | 62 | V |  |
| 1961 | 57 | S |  |
| 1973 | 45 |  | S |
| 1978 | 40 |  | V |
| 1989 | 29 | T |  |
| 1996 | 22 |  |  |
| 2007 | 11 |  |  |

4) As many people were born between $T$ and $Q$ as between $T$ and $P$.
(As we can see in above table it is only possibility that $P$ and $Q$ born just before and after T or only one person between born between $P$ and $T$ and $T$ and Q)
(here case - 2 will gets eliminated as in this case it is not possible that people born between T and P is same as T and Q)
5) The present age of $W$ is twice the present age of Q.
(This is only possible if Q age is 11 year and W age is 22 year)

|  |  | Case-1 |
| :--- | :--- | :--- |
| Year | Age | Person |
| 1945 | 73 |  |
| 1956 | 62 | V |
| 1961 | 57 | S |
| 1973 | 45 | P |
| 1978 | 40 |  |
| 1989 | 29 | T |
| 1996 | 22 | W |
| 2007 | 11 | Q |

5) $R$ was born in one of the years before $P$.
(Now only U is left and only birthyear left is 1978.
Therefore, U born in 1978)

| Year | Age | Person |
| :--- | :--- | :--- |
| 1945 | 73 | R |
| 1956 | 62 | V |
| 1961 | 57 | S |
| 1973 | 45 | P |
| 1978 | 40 | U |
| 1989 | 29 | T |
| 1996 | 22 | W |
| 2007 | 11 | Q |

Above combination will be final combination. Age of $U$ is 40 year.
60. Ans. E.

Person: P, Q, R, S, T, U, V and W
Birth year: 1945, 1956, 1961, 1973, 1978, 1989, 1996 and 2007

1) S was born in an odd number year.
2) The difference between the present age of $S$ and V is 5 .
(as difference of 5 year is of between person born in 1956 and 1961 and person born in 1973 and 1978 as S born in odd numbered year therefore S born either in 1961 or 1973 and V born in 1956 and 1978)
3) Only 3 people were born between $V$ and $T$.

|  |  | Case - <br> 1 | Case - <br> 2 |
| :--- | :--- | :--- | :--- |
| Year | Age | Person | Person |
| 1945 | 73 |  | T |
| 1956 | 62 | V |  |
| 1961 | 57 | S |  |
| 1973 | 45 |  | S |
| 1978 | 40 |  | V |
| 1989 | 29 | T |  |
| 1996 | 22 |  |  |
| 2007 | 11 |  |  |

4) As many people were born between $T$ and $Q$ as between $T$ and $P$.
(As we can see in above table it is only possibility that $P$ and $Q$ born just before and after T or only one person between born between P and T and T and Q)
(here case - 2 will gets eliminated as in this case it is not possible that people born between $T$ and $P$ is same as T and Q)
5) The present age of $W$ is twice the present age of Q.
(This is only possible if Q age is 11 year and W age is 22 year)

|  |  | Case-1 |
| :--- | :--- | :--- |
| Year | Age | Person |
| $\mathbf{1 9 4 5}$ | 73 |  |
| 1956 | 62 | V |
| 1961 | 57 | S |
| 1973 | 45 | P |
| 1978 | 40 |  |
| 1989 | 29 | T |
| 1996 | 22 | W |
| 2007 | 11 | Q |

5) R was born in one of the years before $P$.
(Now only U is left and only birthyear left is 1978.
Therefore, U born in 1978)

| Year | Age | Person |
| :--- | :--- | :--- |
| 1945 | 73 | R |
| 1956 | 62 | V |
| 1961 | 57 | S |
| 1973 | 45 | P |
| 1978 | 40 | U |
| 1989 | 29 | T |
| 1996 | 22 | W |
| 2007 | 11 | Q |

Above combination will be final combination. Hence, R born in 1945.
61. Ans. E.

From I and II,
$F$ is $2^{\text {nd }}$ to the left of $D . C$ is $2^{\text {nd }}$ to the left of $F$. $C$ is immediate left of $B$. $E$ is $2^{\text {nd }}$ to the left of $B$ and $B$ is facing away from the centre.


Case 1


Case 2
$B$ is not neighbor of $F$ so case 2 gets rejected. $B$ is $2^{\text {nd }}$ to the right of $A$. C's neighbors are facing opposite directions to each other. F is $2^{\text {nd }}$ to the right of C .


Case 1
Clearly five persons are facing the centre.
So I and II together are necessary to answer the question.
Hence, option E.

## 62. Ans. E.

From I and II,
A was born in a month which was having 30 days so A either born in April or June.
If A was born in June: Two persons were born between $A$ and $D$. One person was born between $D$ and $E$ then D was born in March and E was born in May. One person was born between $E$ and $C$ then $C$ was born in July. Now three persons were born between D and C.
If A was born in April: Two persons were born between $A$ and $D$. One person was born between $D$ and $E$ then D was born in July and $E$ was born in May. One person was born between $E$ and $C$ then $C$ was born in March. Now three persons were born between $D$ and $C$.
So statement I and II are together necessary to answer the question.
Hence, option E.
63. Ans. D.

## From Statement I

Either Neha or Abhay is sitting at one of the ends.
Abhay is third to the left of Neha. Deepak is fourth to the left of Poorvi. The possible scenarios can be
I. Deepak _ Abhay _ Poorvi Neha
II. Abhay Deepak _ Neha _ Poorvi

So, we can't find who are sitting at the extreme ends.
From Statement II
Abhay _ Poorvi or Poorvi _ Abhay and neither of them is sitting at the ends.
The possible scenarios can be
I. Manik Abhay _ Poorvi Neha
II. Poorvi Neha _ Abhay Manik

So, we can't find who are at the extreme ends.
From Statements I and II
The only possible scenario is Deepak Manik Abhay Hitesh Poorvi Neha.
Thus, Deepak and Neha are sitting at the extreme ends.
64. Ans. A.

From statement $1, E>B>C, D$ (In weight) but $E$ is not the heaviest that means $A$ is the heaviest. $A$ $>E>B>C, D$
From statement 2, $A>E>B, C$ So, D could be either the heaviest or the lightest .statement 2, does not clarify
Hence, only statement 1 alone is sufficient to answer the question.
65. Ans. E.

From I and II,


So point $M$ is north of point $T$.
So I and II together are necessary to answer the question.
Hence, option E.
66. Ans. E.

Say amount invested in scheme $A=X$ Rs.
Return from Scheme $A=\{10+10+(10 * 10) / 100\}=$ X* $(21 / 100)$
Amount invested in scheme $B=(7000-X)$
Return from Scheme B $=(7000-X) * 3 *(15 / 100)=$
ATQ $X^{*}(21 / 100)=(7000-$
X)*3*(15/100)*(84/100)
$\mathrm{X}=(7000-\mathrm{X}) * 1.8$
$2.8 \mathrm{X}=7000 * 1.8$
X=7000*(18/28) $=4500$ RS
Hence Option E
67. Ans. A.

Say no. of Red balls=X
Probability of getting $1^{\text {st }}$ ball red $=X /(X+5)$
Probability of Without replacement getting $2^{\text {nd }}$ ball red $=(X-1) /(X+4)$
Probability of getting both balls red $=\{X /(X+5)\}^{*}\{$
$(X-1) /(X+4)\}=3 / 7$
Checking from options $=X=10$
68. Ans. C.

A alone can do = 20days
Efficiency ratio of $\mathrm{A} \& \mathrm{~B}=4: 5$
Time required will be in ratio $=5: 4$
Hence $B$ alone will do it in $=16$ days
LCM of $(16,20)=80$,Assume work size of 80 units
1 day work of $A=4$ units
1 day work of $\mathrm{B}=5$ units
Work done by both in 4 days $=4^{*}(5+4)=36$ units
Work left= 80-36= 44 units
Now C takes 22 days to complete $=44$ units.
Hence time taken by C alone to complete the
work= 40 days
69. Ans. C.

Say haircut voucher $=H$ pedicure voucher $P=H-$ 130
$H+P=450$,
$H=290, P=160$
Male getting pedicure $=160 *(13 / 20)=104$
Female Getting Pedicure $=160 *(7 / 20)=56$
Male Haircut= $104+15=119$
Female haircut $=290-119=171$

|  | Male | Female | Total |
| :--- | :--- | :--- | :--- |
| Haircut | 119 | 171 | 290 |
| Pedicure | 104 | 56 | 160 |
| Total | 223 | 227 | 450 |

Required $\%=(56 / 290) * 100=19 \%$ approximately 70. Ans. D.

Say haircut voucher $=H$ pedicure voucher $P=H-$ 130
$H+P=450$,
$H=290, P=160$
Male getting pedicure $=160 *(13 / 20)=104$
Female Getting Pedicure $=160 *(7 / 20)=56$
Male Haircut= $104+15=119$
Female haircut=290-119=171

|  | Male | Female | Total |
| :--- | :--- | :--- | :--- |
| Haircut | 119 | 171 | 290 |
| Pedicure | 104 | 56 | 160 |
| Total | 223 | 227 | 450 |

Total for manicure $=30+50 \%$ of 290
$=30+145=175$
71. Ans. D.

Say haircut voucher $=\mathrm{H}$ pedicure voucher $\mathrm{P}=\mathrm{H}-$ 130
$\mathrm{H}+\mathrm{P}=450$,
$\mathrm{H}=290, \mathrm{P}=160$
Male getting pedicure $=160 *(13 / 20)=104$
Female Getting Pedicure $=160 *(7 / 20)=56$
Male Haircut $=104+15=119$
Female haircut $=290-119=171$
Males redeemed pedicure voucher= 104

|  | Male | Female | Total |
| :--- | :--- | :--- | :--- |
| Haircut | 119 | 171 | 290 |
| Pedicure | 104 | 56 | 160 |
| Total | 223 | 227 | 450 |

72. Ans. C.

Say haircut voucher $=\mathrm{H}$ pedicure voucher $\mathrm{P}=\mathrm{H}-$ 130
$H+P=450$,
$H=290, P=160$
Male getting pedicure $=160 *(13 / 20)=104$
Female Getting Pedicure $=160 *(7 / 20)=56$
Male Haircut= $104+15=119$
Female haircut $=290-119=171$
Males redeemed pedicure voucher= 104

|  | Male | Female | Total |
| :--- | :--- | :--- | :--- |
| Haircut | 119 | 171 | 290 |
| Pedicure | 104 | 56 | 160 |
| Total | 223 | 227 | 450 |

73. Ans. D.

Say haircut voucher $=\mathrm{H}$ pedicure voucher $\mathrm{P}=\mathrm{H}-$ 130
$\mathrm{H}+\mathrm{P}=450$,
$H=290, P=160$
Male getting pedicure $=160 *(13 / 20)=104$
Female Getting Pedicure $=160 *(7 / 20)=56$
Male Haircut $=104+15=119$
Female haircut $=290-119=171$
Males redeemed pedicure voucher= 104

|  | Male | Female | Total |
| :--- | :--- | :--- | :--- |
| Haircut | 119 | 171 | 290 |
| Pedicure | 104 | 56 | 160 |
| Total | 223 | 227 | 450 |

Required Difference $=104-56=48$
74. Ans. A.

Required average $=\{98.75 \%$ of $(2.8+3.6)\} / 2=$ 3.176 lakh.
75. Ans. B.

Shirts failed test in 2014=2.5\% of 3.2lakh= 8000
Shirts failed test in 2017=1.25 \% Of 3.6 lakh= 4500
Decerase in percentage $=(8000-$
$4500) *(100 / 8000)=43.75 \%$
76. Ans. D.
in 2015
No. of coloured shirts $=60 \%$ of 4.0 lakh= 2.4lakh 77. Ans. C.

Shirts Cleared quality test in $2015=97.75 \%$ of 4.0 lakh

Remain unsold= $10 \%$ of (97.75\% of 4.0
lakh) $=38100$.
78. Ans. C.
no. of shirts cleared quality test= 3,20000*(97.5/100)
Total revenue $=3,12,000 * 500=1.56 \mathrm{Cr}$.
79. Ans. D.
total large size box sold $=36+42+32+46+70=$ 226
80. Ans. D.
total sale of boxes on day $1=48+36=84$
Total sale of boxes on day $4=53+46=99$
Required \% = (84/99)*100 = 84.3\%
81. Ans. D.

Total sale of medium size boxes on given days=
$48+53+40=141$
Average $=141 / 3=47$
82. Ans. C.
large size on day $3=32$, medium on day $2=32$
Hence required ratio $=1: 1$
83. Ans. A.
sale on day $2=74$, sale on day $5=110$
Required $\%=(74 / 110) * 100=67.1 \%$
84. Ans. B.

Volume of cylinder $=\pi r^{2} h=500 \pi$
$\mathrm{R}=5$ So $\mathrm{h}=20 \mathrm{~cm}$
Diagonal of square $=20 \mathrm{~cm}$
Side of square $=$ Diagonal $/ \sqrt{2}=20 / \sqrt{2}=10$
$\sqrt{2} \mathrm{~cm}$
Perimeter of square $=4^{*}$ side $=40 \sqrt{2} \mathrm{~cm}$
85. Ans. B.

A $2 x^{2}+5 x+3=0$
So $2 x^{2}+2 x+3 x+3=0$
So $2 x(x+1)+3(x+1)=0$
So $(2 x+3)(x+1)=0$
So $x=-3 / 2$ or $x=-1$
B. $2 y^{2}-7 y+6=0$
$2 y^{2}-4 y-3 y+6=0$
So $y=+2$ or $y=+3 / 2$
Thus $x<y$
86. Ans. E.
A. $3 x^{2}-7 x+4=0$
$3 x^{2}-4 x-3 x+4=0$
$X=4 / 3$ or 1
B. $2 y^{2}-3 y+1=0$
$2 y^{2}-2 y-y+1=0$
$Y=1$ or $1 / 2$
Thus E is correct
87. Ans. A.

$$
\begin{aligned}
& \text { A. } x^{2}+12 x+35=0 \\
& x^{2}+7 x+5 x+35=0
\end{aligned}
$$

$x=-7$ or -5
B. $y^{2}+17 y+72=0$
$. y^{2}+8 y+9 y+72=0$
$Y=-8$ or -9
So $x>y$
88. Ans. D.
A. $x^{2}-10 x+25=0$
$x^{2}-5 x-5 x+25=0$
$x=+5$
B. $y^{2}=25$
$Y=+5,-5$
So $x \geq y$
89. Ans. B.
A. $x^{2}-36 x+324=0$
$x^{2}-18 x-18 x+324=0$
$x=18$
B. $y^{2}-42 y+441=0$
$y^{2}-21 y-21 y+441=0$
$y=21$
$x<y$
90. Ans. B.

In 30 minutes the train with 50 Km speed reach at a distance of 25 Km
And their relative speed is $25 \mathrm{Km} / \mathrm{h}$
So, Time take $\rightarrow 25 / 25=1 \mathrm{Hr}$
Distance from Delhi the two trains will be
together $\rightarrow 75 * 1=75 \mathrm{KM}$
91. Ans. D.

Cost Price $=$ Rs. $(50000+2000+500)=$ Rs.
52,500
Profit $=20 \%$
Hence, selling price $=120 \%$ of $52500=$ Rs. Rs.
63,000
92. Ans. A.

* Solve this question through the options, the first number is 20
Then the total age of the group is $20 * 16.75=335$
And the 20 new person adding to the group total age is 265
So, in this case if we calculate the average then the average comes out to be 15 years
Hence A is the correct choice.

93. Ans. E.
$A_{2001} A_{2002}=4: 5$
$A_{2001}: B_{2001}=2: 3$
We have to make $A_{2001}$ same in both cases.
$A_{2001} B_{2001}=4: 6$
Let $A$ 's income in $2001=4 x$
Let $B^{\prime}$ s income in $2001=6 x$
A and B income in $2001=25000$ [Given]
$10 x=25000$
$x=2500$
A's income in $2001=4 x=4 * 2500=$ Rs10000

B's income in $2001=6 x=6 * 2500=$ Rs 15000
A's income in $2002=5 x=5 * 2500=$ Rs 12500
Savings of $A$ in $2002=$ Rs4000
Expenditure $=$ Income - Savings $=12500-4000=$ Rs8500
94. Ans. A.

Let the current ages be $y$ and $3 y$
Their ages after 5 years $\rightarrow y+5 \& 3 y+5$
$\rightarrow(y+5) /(3 y+5)=3 / 4 \rightarrow y=1$
So, their current ages are $1 \& 3$ years and after 10 years the average age be 12 years.
95. Ans. A.

Ratio of mixture of spirit and water in Container $1=$ 2: 3
Amount of mixture taken $=10$ litres
Amount of spirit $=2 / 5 \times 10=4$ litres
Amount of water $=3 / 5 \times 10=6$ litres
Ratio of mixture of spirit and water in Container $2=$ 3: 2
Amount of mixture taken $=x$ litres
Amount of spirit $=3 / 5 \times x=3 x / 5$ litres
Amount of water $=2 / 5 \times x=2 x / 5$ litres
Ratio of mixture of spirit and water in resultant
mixture $=4: 5$
Therefore, $(4+3 x / 5) /(6+2 x / 5)=4 / 5$
$(20 / 5+3 x / 5) /(30 / 5+2 x / 5)=4 / 5$
$(20+3 x) /(30+2 x)=4 / 5$
$100+15 x=120+8 x$
$7 x=20 ; x=2.86$ litres
So option (1) is the correct answer.
96. Ans. B.
0.5, 2,1,4,32,512
$32=512 /\left(2^{\wedge} 4\right)$

```
\(4=32 /\left(2^{\wedge} 3\right)\)
\(1=4 /\left(2^{\wedge} 2\right)\)
\(1 / 2=1 /\left(2^{\wedge} 1\right)\) hence 2 is wrong term.
\(0.5=(1 / 2) /\left(2^{\wedge} 0\right)\)
97. Ans. B.
\(5.1=4+1.1\)
\(7.3=5.1+2.2\)
\(10.6=7.3+3.3\)
\(15=10.6+4.4\)
\(20.5=15+5.5-----\) hence 20 is wrong term
\(27.1=20.5+6.6\)
98. Ans. D.
\(3=(2 * 2)-1\)
\(8=(3 * 3)-1\)
\(31=(8 * 4)-1\)
\(154=(31 * 5)-1\)
\(923=(154 * 6)-1=-----\)-Hence 924 is the wrong term
\(6460=(923 * 7)-1\)
99. Ans. D.
\(134-69=65\) further \(65-33=32\)
\(69-36=33 \quad 33-17=16\)
\(36-19=17 \quad 17-9=8\)
\(19-10=9 \quad 9-5=4\)
\(10-5=5\)
100. Ans. B.
\(251-1^{\wedge} 3=250---\)-hence 252 is wrong term
\(250+2 \wedge 2=254\)
254-3^3= 227
\(227+4 \wedge 2=243\)
243-5^3= 118
\(118+6^{\wedge} 2=154\)
```

