

Test 1: 40 Ques 30 mins

Test 2: 40 Ques 60 mins

Directions: In each of the following questions two rows of numbers are given, the resultant number in each row is to be worked out separately based on the following rules and the question below the rows of numbers is to be answered, the operation of numbers progresses from left to right.

Conditions:

(I) If an even number is followed by an odd number, then 25 is added to the difference of both numbers.

(II) If an odd number is followed by an even number, then 20 is subtracted from the sum of both numbers.

(III) If an even number is followed by an even number or an odd number is followed by an odd number, then 25 is subtracted from the product of both numbers.

1. Find the value of $(x - y)$.

$x = 88 \ 27 \ 12$

$y = 43 \ 24 \ 28$

A 875 B 1067 C 952 D 997 E 1088

2. Find the value of $(p + q)^{1/2}$.

$p = 36 \ 13 \ 29$

$q = 73 \ 22 \ 19$

A 40 B 38 C 24 D 34 E 42

3. What will be the difference between the third last digit and fourth digit from the left end of the number '947823165' after arranging all its digits in ascending order?

A 4 B 5 C 3 D 7 E None of these

4. What will be the addition of the third digit from the right end and the fourth digit from the left end of the number '768395241' after arranging all its digits in descending order?

A 8 B 12 C 17 D 15 E None of these

5. In a class, there are 36 very tall boys. If these constitute three-fourths of the boys and the total number of boys is two-thirds of the total number of students in the class, what is the total number of girls in the class?

A 36 B 72 C 24 D 48 E None of these

6. There are 25 students in a class and all of them are sitting in a row to do yoga. Meena is 11th from the top and Sneha is 6th from the bottom. Two students are sitting between Ananya and Reena. What is the position of Reena from the top.

A 12th B 13th C 16th D Can't be determine E None of these

7. How many such pairs of Numbers are there in the 5947680213, each of which has as many numbers between them in the number, as they have in the numeric series?

A Four B Five C More than five D None E None of these

Directions: Study the following information carefully and answer the questions given below:

Eight persons – Sheela, Parth, Kapil, Munni, Rihan, Arnav, Balam and Nupur, had their Indian Idol audition on different dates of November – 5, 6, 7, 10, 11, 15, 17 and 19, but not necessarily in the same order. The audition of each of the person was in different cities – Pune, Goa, Indore, Surat, Agra, Bhopal, Noida and Ajmer, but not necessarily in the same order.

The person, whose audition was in Surat, gave the audition at the gap of 2 turns from Kapil. Rihan's audition was on the date that was not a prime number. Rihan and the one whose audition was in Bhopal gave their auditions at a gap of 4 turns. The person whose audition was in Pune gave the audition after 3 turns from Balam.

Balam and Munni gave their auditions on the consecutive turns. Nupur's audition was in Indore. The one, whose audition was on 5th November, gave the audition in Noida. Sheela gave the audition 2 turns after the one whose audition was in Goa. Number of persons gave their audition between Sheela and Arnav was equal to the number of persons gave their audition after the one, whose audition was in Ajmer. Kapil gave the audition after the one whose audition was in Bhopal. Not more than three persons had their auditions after Arnav.

8. Who among the following persons gave the audition in Agra?

A Munni B Arnav C Rihaan D Sheela E None of these

9. Among which of the following cities does Parth gave the audition?

A Bhopal B Noida C Agra D Goa E None of these

10. How many person(s) give the auditions between Nupur and Arnav?

A None B One C Two D Three E More than three

11. Which of the following combinations is/are correct?

A 5th Nov – Rihaan – Noida

B 10th Nov – Balam – Surat

C 17th Nov – Arnav – Bhopal

D 7th Nov – Nupur – Ajmer

E 11th Nov – Sheela – Agra

12. How many person(s) gave their auditions after one who gives the audition in Surat?

A None B One C Two D Three E More than three

Seven persons – Kajal, Bhagat, Mandeep, Kiran, Rinku, Pranav, and Shreya have different height and weight such that the tallest one is not the heaviest one.

Kiran is taller than Kajal but not heavier than Shreya. Bhagat is heavier than Rinku but not as much tall as Mandeep. Pranav is heavier than Bhagat and Rinku but shorter than Mandeep and Bhagat. Kiran is not taller than Pranav. Shreya is not taller than Kajal and also not heavier than Rinku. Kajal is not lighter than Mandeep who is heavier than Bhagat. Mandeep is shorter than only one person. Pranav is not the second heaviest and is lighter than Mandeep.

13. Who among the following is the second lightest?

A Pranav B Rinku C Kajal D Shreya E None of these

14. How many person(s) are heavier than the one who is second shortest?

A None B One C Two D Three E More than three

15. Who among the following is the heaviest?

A Shreya B Mandeep C Kajal D Pranav E None of these

Direction: In each of these questions, a sentence with four words printed in bold type is given. These are numbered as A, B, C and D. One of these four words may be either wrongly spelled or inappropriate in context of the sentence. Find out the word which is wrongly spelled or inappropriate if any. The number of that word is your answer. If all the words printed in bold are correctly spelled and also appropriate in the context of the sentence, mark (E) "All correct" as your answer.

16. What makes the 2019 election unprecedented is not that inappropriate words were used and misinformation spread, but the fact that India witnesses an increasing tendency to normalise these.

A Unprecedented B Inappropriate C Spread D Witnesses E All are correct

17. On the one hand, inform discussions have become difficult, and on the other, social tensions have risen.

A On B inform C become D risen E All are correct

18. With stronger headwind ahead in the form of an escalating trade war between the U.S. and China, and the imbroglio in the Middle East, the outlook for export demand is far from reassuring.

A headwind B escalating C imbroglio D reassuring E All are correct

Directions: In the questions below, a sentence is given, followed by five options. Choose the option that best conveys the same meaning as the original sentence and is correct with respect to grammar, meaning and usage.

19. Men are so much biased against the qualities of a woman that when a woman works excellently, men say 'she is a man'.

A Men are generally biased against the qualities of women and can't bear them grow.

B Men, being biased towards themselves, claim that women can't do many tasks which they can do with excellence.

C Men are naturally biased and expect the world to be like them only.

D Men, being extremely prejudiced against the qualities of women, opine that men are superior to women in any given task.

E Men believe that they are superior to others and must not be taken for granted.

20. There are many government hospitals in the area which are providing health services to the people but these services are not adequate as far as number of people being admitted and quality of treatment is concerned.

A In spite of the presence of government hospitals in great numbers, the patients are not being served adequately.

B Even though there are many government hospitals which are providing health services to the populace of the region, the services rendered are inadequate in terms of quantity and quality.

C Although government hospitals are trying their best to serve the poor patients yet the services provided by them are not inadequate in any manner.

D With an increasing population in the area, the government hospitals now find it difficult to serve their patients with quality treatment.

E Government hospitals in general lack resources and thus become unable to serve its patients with quality treatment.

21. The slogan "Children are the future of the nation" stops making sense when a country of the size of India has over 3 million children living on the streets.

A. A country like India, the children of which are living in poor conditions, should avoid raising fancy slogans.

B. India with as big a child population as 3 million must work towards improving its children's life conditions instead of raising slogans.

C. It's ironic to see India as a country that takes pride in proclaiming its children as the future of the nation whereas a huge population of them is living in abject conditions.

D. On one hand India sees future in its children the population of which are as big in size as 3 million, it, on the other hand, neglects many of them who are living in extreme conditions.

E. Being a country with 3 million street children, India must not raise slogans which are self-derogatory.

22. The UGC has served India's higher education system for over six decades and like many other institutions forming its cohort, it has been struggling to cope with diverse responsibilities for some time.

A The UGC has been in operation for the past six years and like its counterparts, it has been struggling to tackle responsibilities.

B The UGC has served the nation for sixty years but unlike its peers, it has struggled to cope with different types of responsibilities.

C The UGC has been a part of India's higher education system for more than sixty years and like many other of its fellow institutions, it has also been struggling for some time, to tackle various types of responsibilities.

D The UGC, in its struggles to cope with different types of responsibilities, is similar to its fellow institutions which have also been a part of India's education system for more than sixty years and are also struggling.

E None of the above

23. It is disturbing to note that mob lynching in India is moving towards becoming the new normal and has failed to invoke unconditional condemnation from a large section of society.
 A Mob lynching is the latest in-thing in India as in other nations and is very popular among a large section of the society which makes it very disturbing.
 B Mob lynching has failed to garner absolute condemnation from a huge part of the society and what is more disturbing is that it is on the road to becoming the new normal.
 C Not only has mob lynching failed in its attempt to being condemned by the society, it is also becoming a very common part of the society which is extremely disturbing.
 D Mob violence seems to enjoy the endorsement of the people who seem to enjoy that it has failed to invoke unconditional condemnation from the society and is merely the new normal.
 E None of the above

Direction: In the following passage, some of the words, each of which is preceded by a letter. Find the suitable word from the options given below that could replace the bold word so as to make the paragraph meaningful.

India's 'water crisis' took over social media recently. Usually, a delayed monsoon or a drought, (A) combined with compelling images of parched lands and queues for water in urban areas raise an alarm in the minds of the public. Similarly, episodes of inter-State river water disputes catch public attention. (B) However, this time, it was somewhat different. Videos and news reports claiming that Indian cities are running out of groundwater went viral. These news items could not have gained the traction but for the fact that they (C) relied on a 2018 report of India's own Niti Aayog, which was titled 'Composite Water Management Index: A tool for water management.'

24. What will come in (A)
 A Combined B Along C With D Multiplied E Exacted
25. What will come in (B)
 A Also B Similarly C However D Mostly E Notwithstanding
26. What will come in (C)
 A Depended B Relied C Counted D Banked E All of the above

Directions: Study the following information carefully and answer the questions given beside:
 The total number of students in a college having three disciplines viz. Arts, Commerce and Science is 20,000. 25% of the total number of students are from the discipline of Arts. 30% of the total number of students are from the discipline of Commerce and 45% of the total number of students are from the discipline of Science. The college has three compulsory subjects' viz. Social work, Physical training and Cookery for all the three disciplines and the students have a choice to take either one of the subjects or all the three subjects together. 25% of the total number of students from the discipline of Arts have taken Social work. 35% of the total number of students from the discipline of Arts have taken Physical Training. 30% of the total number of students from the same discipline have taken Cookery and the rest have taken all the three subjects. 40% of the total number of students from the discipline of Commerce have taken Social work, 25% have taken Physical training, 10% have taken Cookery and the rest have taken all. 15% of the total number of students from the discipline of Science have taken Social work, 45% have taken Physical Training, 5% have taken Cookery and the rest have taken all the three subjects.

27. What is the respective ratio of the total number of students from the discipline of Commerce to those of arts?
 A 9 : 5 B 6 : 5 C 5 : 6 D 5 : 9 E None of these
28. What is the total number of students who have taken Social Work and Physical Training from all the three disciplines?
 A 17450 B 17250 C 16850 D 16250 E None of these
29. The total number of students who have taken only Physical training as their subject from the discipline of Arts are approximately, what per cent of the total number of students taking the same subject from the discipline of Science?

A 48 B 47 C 43 D 39 E None of these

30. If the digits of a two digit number are interchanged the number so obtained is greater than the original number by 18. If the sum of the two digits of the number is 8, find 55% of the original number?

A 19.25 B 9.35 C 14.3 D 29.15 E 34.10

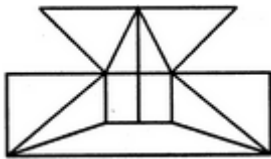
31. The perimeter of a rectangle is equal to the perimeter of a square whose diagonal is $17\sqrt{2}$ m. If the difference between the length and breadth of rectangle is 10m, find the area of the rectangle?

A 260 m² B 264 m² C 210 m² D 230 m² E 245 m²

32. Ronny and Pankaj spent 70% and 75% of their respective salaries. Pankaj kept 60% of the remaining as savings and gave the remaining Rs. 5100 to his mother. What was Ronny's monthly expenditure if his monthly salary was 20% less than that of Pankaj?

A Rs. 71400 B Rs. 28560 C Rs. 62340 D Rs. 24400 E Rs. 50460

33. Find the minimum number of straight lines required to make the given figure.



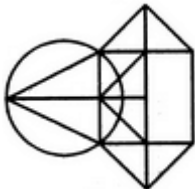
A.16 B. 17 C. 18 D. 19 E. 20

34. Find the number of triangles in the given figure.



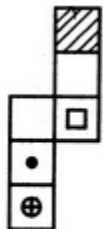
A.22 B. 24 C. 26 D. 28 E. 29

35. Find the number of triangles in the given figure.



A. 10 B. 12 C. 14 D. 16 E. 18

36. Choose the box that is similar to the box formed from the given sheet of paper (X).



(X)



(1)



(2)



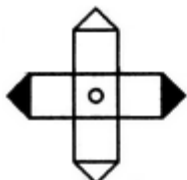
(3)



(4)

A. 1 only B. 2 and 3 only C. 1 and 3 only D. 1, 2 and 4 only E. 3 only

37. Choose the box that is similar to the box formed from the given sheet of paper (X).



(X)



(1)



(2)



(3)



(4)

A. 1 only B. 2 and 3 only C. 1 and 3 only D. 4 only E. 3 only

38. Select a figure from the given four alternatives which fits exactly into Figure-X to form a complete square.



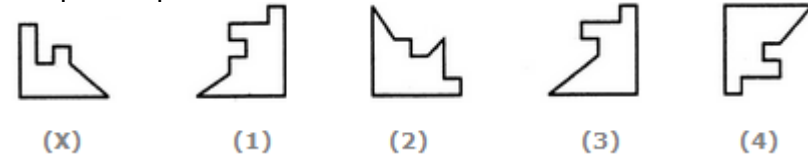
A. 1 B. 2 C. 3 D. 4 E. None of these

39. Select a figure from the given four alternatives which fits exactly into Figure-X to form a complete square.



A. 1 B. 2 C. 3 D. 4 E. None of these

40. Select a figure from the given four alternatives which fits exactly into Figure-X to form a complete square.



A. 1 B. 2 C. 3 D. 4 E. None of these

Solutions

1. Correct Option: C

We have,

$$x = 88 \ 27 \ 12$$

$$y = 43 \ 24 \ 28$$

$$\text{Now, } x = 27 \ 88 \ 12$$

Reference:

(I) If an even number is followed by an odd number, then 25 is added to the difference of both numbers.

$$\Rightarrow x = [(88 - 27) + 25] \ 12 \Rightarrow x = 86 \ 12$$

(III) If an even number is followed by an even number, then 25 is subtracted from the product of both numbers.

$$\Rightarrow x = [(86 \times 12) - 25] \therefore x = 1007 \text{ and, } y = 43 \ 24 \ 28$$

Reference:

(II) If an odd number is followed by an even number, then 20 is subtracted from the sum of both numbers. $\Rightarrow y = [(43 + 24) - 20] \ 28 \Rightarrow y = 47 \ 28$

(II) If an odd number is followed by an even number, then 20 is subtracted from the sum of both numbers. $\Rightarrow y = [(47 + 28) - 20]$

$$\therefore y = 55$$

$$\text{Required Value} = (x - y) \Rightarrow (1007 - 55) \Rightarrow \text{Required Value} = 952$$

Hence, the correct answer is option C.

2. Correct Option: B

We have,

$$p = 36 \ 13 \ 29$$

$$q = 73 \ 22 \ 19$$

$$\text{Now, } p = 36 \ 13 \ 29$$

Reference:

(I) If an even number is followed by an odd number, then 25 is added to the difference of both numbers.

$$\Rightarrow p = [(36 - 13) + 25] \ 29$$

$$\Rightarrow p = 48 \ 29$$

(I) If an even number is followed by an odd number, then 25 is added to the difference of both numbers.

$$\Rightarrow p = [(48 - 29) + 25]$$

$$\therefore p = 44$$

$$\text{And, } q = 73 \ 22 \ 19$$

Reference:

(II) If an odd number is followed by an even number, then 20 is subtracted from the sum of both numbers.

$$\Rightarrow q = [(73 + 22) - 20] \ 19$$

$$\Rightarrow q = 75 \ 19$$

(III) If an odd number is followed by an odd number, then 25 is subtracted from the product of both numbers.

$$\Rightarrow q = [(75 \times 19) - 25]$$

$$\therefore q = 1400$$

$$\text{Required Value} = (p + q)^{1/2}$$

$$= (1400 + 44)^{1/2}$$

$$= (1444)^{1/2}$$

∴ Required Value = 38

Hence, the correct answer is option B.

3. Correct Option: C

The given number:

947823165

After arranging all the digits of the given number in ascending order, we have:

123456789

The third last digit = 7

The fourth digit from the left end = 4

The difference between the third last digit and fourth digit from the left end = $7 - 4 = 3$

4. Correct Option: E

The given number:

7 6 8 3 9 5 2 4 1

After arranging all its digits in descending order, we get:

9 8 7 6 5 4 3 2 1

Now, The third digit from the right end = 3

The fourth digit from the left end = 6

Now, Addition of the third digit from the right end and the fourth digit from the left end = $3 + 6 = 9$

5. Correct Option: C

Given number of tall boys = 36

Let the number of boys be x ,

Now, according to the question,

$$3x/4 = 36$$

$$X = (36 \times 4)/3 = 48$$

$$\text{Total number of students} = (48 \times 3)/2 = 72$$

$$\text{Now, the total number of girls} = 72 - 48 = 24$$

6. Correct Option: D

From the above information, we cannot be sure about the position of Reena, as we don't have enough information about the position of Ananya and Reena.

7. Correct Option: C

The given number:

5	9	4	7	6	8	0	2	1	3
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Possible pairs:

4	7	6
---	---	---

2	1
---	---

0	2	1	3
---	---	---	---

4	7	6	8	0
---	---	---	---	---

7	6
---	---

9	4	7	6
---	---	---	---

And,

9	4	7
---	---	---

Hence, we can say that there are six such pairs are possible, each of which has as many Numbers between them in the number, as they have in the numeric series. Hence, the correct answer is option C.

8. Correct Option: D. Following the final solution, we can say that Sheela gave the audition in Agra.

9. Correct Option: B. Following the final solution, we can say that Parth gave the audition in Noida. Hence, the correct answer is option B.

10. Correct Option: D. Following the final solution, we can say that three persons give the auditions between Nupur and Arnav.

11. Correct Option: C. Following the final solution, we can say that 17th Nov – Arnav – Bhopal is the correct combination. Hence, the correct answer is option C.

12. Correct Option: D. Following the final solution, we can say that three persons gave their auditions after one who gives the audition in Surat. Hence, the correct answer is option D.

Date	Person	City
5th Nov	Parth	Noida
6th Nov	Rihan	Goa
7th Nov	Nupur	Indore
10th Nov	Sheela	Agra
11th Nov	Balam	Surat
15th Nov	Munni	Ajmer
17th Nov	Arnav	Bhopal
19th Nov	Kapil	Pune

Common Explanation:

Reference:

Eight persons – Sheela, Parth, Kapil, Munni, Rihan, Arnav, Balam and Nupur, have their Indian Idol auditions on different dates of November – 5, 6, 7, 10, 11, 15, 17 and 19, but not necessarily in the

same order. The audition of each of the person was in different cities – Pune, Goa, Indore, Surat, Agra, Bhopal, Noida and Ajmer, but not necessarily in the same order.

Inference:

We will keep this information in mind while solving the puzzle.

Reference:

The one, whose audition was on 5th November, gave the audition in Noida.

Rihan's audition was on the date that was not a prime number.

Rihan and the one whose audition was in Bhopal gave their auditions at a gap of 4 turns.

13. Correct Option: D. Following the final solution we can say that Shreya is the second lightest. Hence, the correct answer is option D.

14. Correct Option: A. Following the final solution we can say that no one is heavier than the one who is second shortest. Hence, the correct answer is option A.

15. Correct Option: C. Following the final solution we can say that Kajal is the heaviest. Hence, the correct answer is option C.

Order	Height	Weight
Highest	Rinku	Kajal
↓	Mandeep	Mandeep
	Bhagat	Pranav
	Pranav	Bhagat
	Kiran	Rinku
	Kajal	Shreya
Lowest	Shreya	Kiran

16. Correct Option: D. The entire statement is in the past tense wherein events have already occurred. The word 'witnesses' is in the present continuous tense and is inappropriate in the current context. Correct: What makes the 2019 election unprecedented is not that inappropriate words were used and misinformation spread, but the fact that India witnessed an increasing tendency to normalise these.

17. Correct Option: B. Here, the correct word would be 'informed' and not 'inform'. Inform means to give (someone) facts or information while 'informed' means to do something based on an understanding of the facts of the situation. Thus, 'informed' is the correct adjective to be used here. Correct: On the one hand, informed discussions have become difficult, and on the other, social tensions have arisen.

18. Correct Option: A. The correct word here is headwinds in plural form. A headwind is something that makes progress or moving forward difficult. Basically, it is a wind which blows in the opposite direction to the one in which you are moving. The form here should be plural as there are multiple events listed in the statement. Correct: With stronger headwinds ahead in the form of an escalating trade war between the U.S. and China, and the imbroglio in the Middle East, the outlook for export demand is far from reassuring.

19. Correct Option: D

Sentence I. Men are generally biased against the qualities of women and can't bear them grow. The inclusion of the part 'can't bear them grow' is absurd as the original sentence nowhere talks about women's growth. Option A is hence eliminated.

Sentence II. Men, being biased towards themselves, claim that women can't do many tasks which they can do with excellence. Here, the phrase 'many tasks' makes option B a weak choice. The original sentence implies that men in general believe that women are inferior to them in any given task. Option B also gets eliminated.

Sentence III. Men are naturally biased and expect the world to be like them only. This can be eliminated straightaway. The original sentence talks about only 'men' and 'women' and not the whole 'world'.

Sentence V. Men believe that they are superior to others and must not be taken for granted. This is absolutely absurd and doesn't make any sense in the context of the sentence given.

Sentence IV. Men, being extremely prejudiced against the qualities of women, opine that men are superior to women in any given task. The above sentence conveys the same meaning as the original sentence does and is both grammatically and contextually correct. Evidently, option D is the correct answer.

20. Correct Option: B

Sentence I. In spite of the presence of government hospitals in great numbers, the patients are not being served adequately. The original sentence nowhere specifies the scarcity or abundance of government hospitals. Inclusion of the phrase 'in great numbers' makes the sentence a weak choice. Option A gets eliminated.

Sentence III. Although government hospitals are trying their best to serve the poor patients yet the services provided by them are not inadequate in any manner. Inclusion of the word 'poor' in the sentence makes this a weak choice as the original sentence doesn't talk about the financial status of its patients anywhere.

Sentence IV. With an increasing population in the area, the government hospitals now find it difficult to serve their patients with quality treatment. This sentence can also be eliminated as the original sentence nowhere mentions 'increasing population' a matter of concern.

Sentence V. Government hospitals in general lack resources and thus become unable to serve its patients with quality treatment. Inclusion of the phrase 'in general' makes the sentence absurd as the original sentence talks of only 'many' government hospitals and not 'all' of them.

Sentence II. Even though there are many government hospitals which are providing health services to the populace of the region, the services rendered are inadequate in terms of quantity and quality. The sentence above conveys the same meaning as the original sentence does and is hence the correct choice. Evidently, option B is the correct answer.

21. Correct Option: C

Sentence I. A country like India, the children of which are living in poor conditions, should avoid raising fancy slogans.

The original sentence just expresses the ironic situation of street children in India and it nowhere suggests an idea. Usage of 'should' in the sentence thus makes the sentence I a weak choice.

Sentence II. India with as big a child population as 3 million must work towards improving its children's life conditions instead of raising slogans.

The sentence above is factually incorrect as it states the total population of children in India as 3 million where it's just the population of street children in the country.

Sentence IV. On one hand India sees future in its children the population of which are as big in size as 3 million, it, on the other hand, neglects many of them who are living in extreme conditions.

The sentence III is incorrect as well following the same logic as discussed for the sentence II.

Sentence V. Being a country with 3 million street children, India must not raise slogans which are self-derogatory.

The sentence above is absolutely absurd and makes no sense at all.

Sentence III. It's ironic to see India as a country that takes pride in proclaiming its children as the future of the nation whereas a huge population of them is living in abject conditions.

The sentence above appropriately conveys the same meaning as the original sentence does.

Option C is hence the correct answer.

22. Correct Option: C

Option A is incorrect as it is factually incorrect (six years vs six decades)

Option B is incorrect as it changes the meaning of the original statement by using 'unlike' instead of 'like'.

Option D is incorrect as it implies all its fellow institutions are in the higher education domain, something that is not mentioned in the original statement.

Option C is correct contextually and grammatically.

Hence, option C is correct.

23. Correct Option: B

Option A is incorrect as it also uses the phrase 'as in other nations' which has not been mentioned originally.

Option C is incorrect as it seems to imply that mob lynching deliberately tried to get condemned which is absurd.

Option D is incorrect as the sentence structure does not make sense and is contextually also absurd.

Option B is the best fit. It conveys the same meaning as the original statement and is contextually and grammatically correct.

24. Correct Option: A. The statement tries to convey that a number of things combined together give an impression of scarcity of water. The only option that fits in is option A.

25. Correct Option: C. Here, the statement after the blank states a point contrary to the ones before it. Thus, we can eliminate options A, B and D. Option C is the best fit here. Hence, option C is the correct answer.

26. Correct Option: E. All of the words convey the correct meaning about the false news mostly relying on the NITI Aayog report on water management. Hence, option E is correct.

Correct Option: B

Total students = 20,000

Total number of Arts students = 25% = 5000

Total number of Commerce students = 30% = 6000

Total number of Science students = 45% = 9000

For Arts students

Students who took Social work = 25% of 5000 = 1250

Students who took Physical Training = 35% of 5000 = 1750

Students who took Cookery = 30% of 5000 = 1500

Students who took all the three subjects = $5000 - (1250 + 1750 + 1500) = 500$

For Commerce students

Students who took Social work = 40% of 6000 = 2400

Students who took Physical Training = 25% of 6000 = 1500

Students who took Cookery = 10% of 6000 = 600

Students who took all the three subjects = $6000 - (2400 + 1500 + 600) = 1500$

For Science students

Students who took Social work = 15% of 9000 = 1350

Students who took Physical Training = 45% of 9000 = 4050

Students who took Cookery = 5% of 9000 = 450

Students who took all the three subjects = $9000 - (1350 + 4050 + 450) = 3150$

27. Total number of students in Commerce = 6000

Total number of students in Arts = 5000

Ratio of number of students in commerce to that of arts

= $\frac{6000}{5000} = 6 : 5 \Rightarrow 5000$. Hence, option B is correct.

28. Arts students who have taken Social Work and Physical Training

= $1250 + 1750 + 500 = 3500$

Commerce students who have taken Social Work and Physical Training

= $2400 + 1500 + 1500 = 5400$

Science students who have taken Social Work and Physical Training

= $1350 + 4050 + 3150 = 8550$

Total students who have taken Social Work and Physical Training

= $3500 + 5400 + 8550 = 17450$

Hence, option A is correct.

29. Arts students who took Physical Training = 1500
 Science students who took Physical Training = 4050
 Percentage of arts students to that of science students
 $= \frac{1500}{4050} \times 100 = 43\%$
 Hence, option C is correct.

30. Correct Option: A
 The two digits in which the sum of the digits is 8 are 17, 26, 35, 44.
 Here, $53 - 35 = 18$. So the original number is 35.
 55% of the original number = $55 \times 35/100 = 19.25$. Hence, option A is correct.

31. Correct Option: B
 The diagonal of the square = $a\sqrt{2}$
 $a\sqrt{2} = 17\sqrt{2}$
 $a = 17$

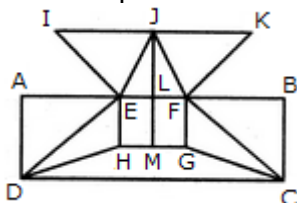
Perimeter of the square = $17 \times 4 = 68$ m
 Perimeter of the rectangle = 68 m
 $L - B = 10$
 $2(L+B) = 68$
 $L + B = 34$

By solving equations we get,
 $L = 22$ m, $B = 12$ m

Area of the rectangle = $22 \times 12 = 264$ m²
 Hence, option B is correct.

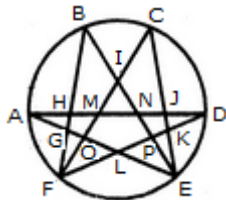
32. Correct Option: B
 Let the monthly salary of Pankaj be 100%
 He spends 75% and saves 25%
 He keeps 60% of 25% i.e., 15% as savings.
 The remaining i.e., 40% of 25% = 10%
 He gives 5100 i.e., 10% to his mother.
 The value of 10% of his salary = 5100
 Value of 100% = 51000
 Pankaj's salary = Rs. 51000
 Monthly salary of Ronny is 20% less than that of Pankaj.
 Monthly salary of Ronny = $51000 \times 4/5 =$ Rs. 40800
 Ronny's monthly expenditure = $40800 \times 7/10 =$ Rs. 28560
 Hence, option B is correct.

33. Option B



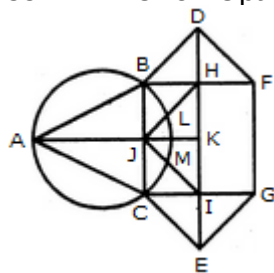
The figure may be labelled as shown.
 The horizontal lines are IK, AB, HG and DC i.e. 4 in number.
 The vertical lines are AD, EH, JM, FG and BC i.e. 5 in number.
 The slanting lines are IE, JE, JF, KF, DE, DH, FC and GC i.e. 8 in number.
 Thus, there are $4 + 5 + 8 = 17$ straight lines in the figure.

34. Total number of triangles in the figure = $7 + 8 + 4 + 2 + 3 + 4 = 28$.



The simplest triangles are AGH, GFO, LFO, DJK, EKP, PEL and IMN i.e. 7 in number.
 The triangles having two components each are GFL, KEL, AMO, NDP, BHN, CMJ, NEJ and HFM i.e. 8 in number.
 The triangles having three components each are IOE, IFP, BIF and CEI i.e. 4 in number.
 The triangles having four components each are ANE and DMF i.e. 2 in number.
 The triangles having five components each are FCK, BGE and ADL i.e. 3 in number.
 The triangles having six components each are BPF, COE, DHF and AJE i.e. 4 in number.
 Total number of triangles in the figure = $7 + 8 + 4 + 2 + 3 + 4 = 28$.

35. Answer: Option C. The figure may be labelled as shown.



The simplest triangles are ABJ, ACJ, BDH, DHF, CIE and GIE i.e. 6 in number.
 The triangles composed of two components each are ABC, BDF, CEG, BHJ, JHK, JKI and CJI i.e. 7 in number.
 There is only one triangle JHI which is composed of four components.
 Thus, there are $6 + 7 + 1 = 14$ triangles in the given figure.

36. Answer: Option C. The fig. (X) is similar to Form V. So, when the sheet shown in fig. (X) is folded to form a cube, then the face with shading lies opposite to the free bearing a square, the face bearing a dot lies opposite to a blank face and the face bearing a circle (with a '+' sign inside it) lies opposite to another blank face. The cubes in figures (2) and (4) have the shaded face adjacent to the face bearing a square. Therefore, the cubes in these two figures cannot be formed. Hence, only cubes in figures (1) and (3) can be formed.

37. Answer: Option D.

The fig. (X) is similar to the Form VI. So, when the cube is formed by folding the sheet shown in fig.

(X), then  is one of the faces of the cube and this face lies opposite to the face bearing a circle.

Also, one of the blank faces lies opposite to another blank face and yet another blank face lies opposite to the fourth blank face. Thus, out of the four blank faces, no three faces can appear adjacent to each other. Clearly, the cube in fig. (1) cannot be formed since there is no face of the

type  , the cube in fig. (2) cannot be formed since it shows three blank faces adjacent to each

other and the cube in fig. (3) cannot be formed since the face  cannot appear adjacent to the face bearing the circle. Hence, only the cube in fig. (4) can be formed.

38. Answer: Option D



39. Answer: Option B



40. Answer: Option D

