



## SNAP 2022 Question Paper

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## SNAP 2022 VA

1. Fill in the blanks with the correct modal verb.

\_\_\_\_\_ I consult my doctor about this persistent cough.

- A Would
- B Shall
- C Should
- D Could



2. Choose the word from the options with the same meaning as the phrase given below:

*"the activity of making designs by rolling and shaping narrow strips of paper"*

- A Quilting
- B Papier-mâché
- C Corraling
- D Quilling

3. Identify the word with a prefix in this sentence:

"The submarine descended to a depth of 200 meters below the surface to explore the ocean floor."

- A depth
- B descended
- C explore
- D surface

4. Which of the following is closest to the given word?  
conflagration

- A exhilaration
- B personification
- C differentiation
- D inferno



5. Identify the part of speech of the highlighted word in the following sentence: "**Wow**, that was an incredible performance!"

- A Noun
- B Exclamation
- C Interjection
- D Preposition

6. Which type of figurative language has been used in the sentence given below:

The new teacher is as tall as a giraffe.

- A Simile
- B Metaphor
- C Personification
- D Hyperbole

7. Identify the option that represents the given sentence in the active voice:

**The car was driven by John to the mechanic for repairs.**

- A John drives the car to the mechanic for repairs.
- B John will drive the car to the mechanic for repairs.
- C John drove the car to the mechanic for repairs.
- D John had driven the car to the mechanic for repairs.



8. Select the option that represents the given sentence in reported speech:

Priya said to Dilip, "I always had this plan in my mind".

- A Priya told Dilip that she always had this plan in her mind.
- B Priya told Dilip that she always had that plan in her mind.
- C Priya told Dilip that she always had had that plan in her mind.
- D Priya told Dilip that he always had that plan in his mind.

#### Instructions [9]

Choose the part of the sentence that contains a grammatical error.

9. Banished from their own house (1)/, they gathered there belongings (2)/ and walked down the street (3)/ with eyes full of shame (4).

- A 1

- B 2
- C 3
- D 4

10. Identify the word which is similar to the meaning of the word given in capital letters.

SUBLIME

- A creativity
- B dispiriting
- C astonishing
- D difficult



VIDEO SOLUTION



### Instructions [11]

In each sentence below four words have been printed in bold which are denoted by (a), (b), (c), (d) and (e). One of these words may be misspelt or inappropriate in the context of the sentence. Find out the wrongly spelt or inappropriate word.

11. (a) When we consider the **native** (b) **genius** of the Greeks, and their (c) **marvellous** achievements in philosophy, literature, and art, (d) we are surprised that they were so inferior to the Romans in **juresprudence** (e) No error

- A d
- B c
- C b
- D e

12. Identify the source of the phrase given below.

"De Facto"

- A French
- B Spanish
- C Latin
- D Portuguese

13. Fill in the blanks with the most appropriate word from the options given.

My boss let me \_\_\_\_ time off work.

- A took
- B to took
- C to take
- D take



## SNAP Syllabus PDF



### Instructions [14]

Fill in the blanks with the appropriate words.

14. The government has ruled out the possibility of including the petroleum products \_\_ GST.

- A on
- B in
- C under
- D over

15. The sentences given with blanks are to be filled with an appropriate word(s). Choose the correct alternative out of the four options.

Seema got used \_\_\_\_\_ on the right hand side as she had been living in the US for 5 years

- A to driving
- B to drive
- C in driving
- D for driving



## SNAP Crash Course



## SNAP 2022 Analytical & LR

- 16.** In the question given below a statement along with three assumptions are given. An assumption is something supposed to be taken for granted. Find out which assumptions are implicit in the given statement.

Statement: Newly inducted ministers were advised to comment carefully so that public doesn't question the abilities of the government.

Assumption:

- I - Public have no trust in the government.
- II - Commenting carefully will help win next elections.
- III - The newly inducted ministers were inexperienced.

- A** I and II are implicit.
- B** Only III is implicit
- C** II and III are implicit
- D** None of these



### Instructions [17]

Each question contains a statement followed by an inference/conclusion. Find if each one of them is an implicit inference based on the statement.

- 17.** Mumbai is a very congested city and to overcome this problem, government had built a new city "Navi Mumbai" near to the Mumbai city in 1972.
- I. The population density in Mumbai has not reduced much even after the creation of Navi Mumbai.
  - II. Navi Mumbai currently is less populated than Mumbai

- A** Only inference I is implicit
- B** Only Inference II is implicit
- C** Either statement I or II is implicit
- D** Neither statement I or II is implicit

### Instructions [18]

For the next two questions, two statements are provided per question. Read the statements carefully and determine if the two statements are independent causes, effects of independent causes or a common cause.

- 18.** Statement 1: Ramesh is throwing a party to his friends.  
Statement 2: Ramesh recently got a promotion.

- A** Statement 1 is the cause and statement 2 is the effect.
- B** Statement 2 is the cause and statement 1 is the effect.
- C** Both are independent causes.
- D** Both are effects of independent causes.

19. Below each question are given two statements I and II. These statements may be either independent causes or may be effects of independent causes or a common cause. One of these statements may be the effect of the other statement. Read both the statements and decide which of the following answer choice correctly depicts the relationship between these two statements.

I: The electricity bills for households have increased.

II: The government raised the tariffs for electricity consumption by 10%.

- A Statement I is the cause and statement II is the effect.
- B Statement II is the cause and statement I is the effect.
- C Both statements are independent causes.
- D Both I and II are effects of some independent causes



20. Three inferences are given based on the following statement. Decide which inferences are valid and accordingly choose the correct option.

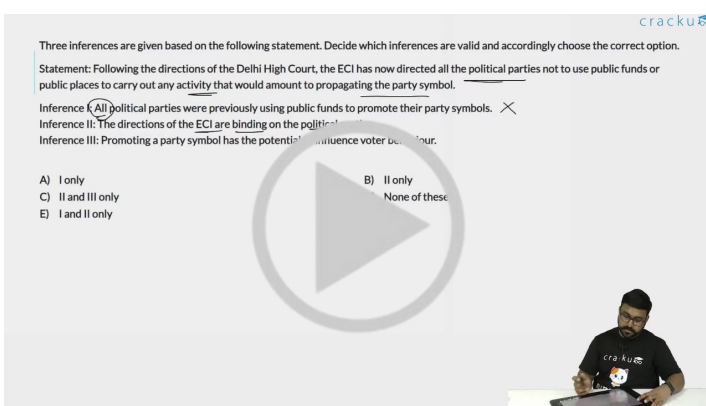
Following the directions of Delhi High Court, the ECI has now directed all the political parties not to use public funds or public place to carry out any activity that would amount to propagating the party symbol

Statement I: Earlier all parties used to use public funds for propagating party symbols.

Statement II: The directions of the ECI are binding on the political parties.

Statement III: Propagating party symbol influences the voters.

- A I only
- B II only
- C II and III only
- D None of these



VIDEO SOLUTION

21. Statement: Over consumption of coke has been linked to many unpleasant side effects, including hair loss. Which of the following, if true, does the most to weaken the author's claim?



24. In each of the following questions, a statement is followed by two courses of action. A course of action is taken for redressal, follow up, etc. Read the statement carefully and choose the correct answer accordingly.  
Statement: The residents of Anna colony are complaining about the menace caused by the excessive number of street dogs.

Conclusion I: The city corporation should cull the street dogs.

Conclusion II: The city corporation must neuter the street dogs and relocate them to animal shelters.

- A Only I follows
- B Only II follows
- C Both I and II follow
- D Either I or II follow

25. A machine codes EAT as 100 and CAT as 60. Which of the following words will be coded as 40320?

- A BAIN
- B PAINT
- C HIGH
- D RAISE



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26. In a certain coded language "PHYSICS" is written as "OIXTHDR" and "HORSE" is written as "GPQTD". How will "SNIPE" be written in this coded language.

- A TMJOE
- B ROHDQ
- C ROHQD
- D TMJOF

In a certain coded language "PHYSICS" is written as "OIXTHDR" and "HORSE" is written as "GPQTD". How will "SNIPE" be written in this coded language.

A) TMJOE  
B) ROHDQ  
C) ROHQD  
D) TMJOF  
E) None of these

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VIDEO SOLUTION

27. Pointing to a photograph, Monica(female) said 'The man in the photograph is the only son of my father's only brother's daughter'. How is Monica related to the person in the photograph?

- A Niece
- B Cousin
- C Sister in law
- D Aunt

**Instructions [28]**

Read the information carefully and answer the given questions.

A, K, P, D, R, S and T are members of a family such that:

- 1) A is the husband of T
- 2) K is the son of R
- 3) P is the daughter of A
- 4) D is the wife of S who is the brother of P
- 5) R is married to P

28. How is K related to S?

- A son
- B niece
- C son-in-law
- D nephew



**Instructions [29]**

Identify the missing term in each of the following sequences.

29. 3, 11, 31, 69, 131, ?

- A 213
- B 223
- C 243
- D 343

**Instructions [30]**

What should come in place of question mark (?) in the following number series?

30. -1, 2, 7, 14, 23, ?

- A 36
- B 37
- C 34

D 33

31. Which of the following options follow the same rule as the terms given below:

HD, RI, TJ, ?

A ZM

B LG

C KE

D XM



32. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

SB, UZ, WX, ?

A UA

B UY

C YV

D UX

33. In each of the following questions, find the odd word/letters/number pair from the given alternatives.

A BD

B DU

C EY

D CI

34. In the question two statements are given, followed by two conclusions, I and II. You have to consider the statements to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements.

Statement 1: All Circles are Rectangles

Statement 2: No Circle is Triangle

Conclusion I: Some Rectangles being Triangles is a Possibility

Conclusion II: All Triangles are Rectangles

A Only Conclusion I follows

B Both Conclusion I and II follows

C Only Conclusion II follows

D Neither Conclusion I nor Conclusion II follows



35. It has been 25 days since Sofu first met her friend, Kitto. Kitto had promised to meet her today, but when Sofu called, he said they could only meet on a Wednesday, 10 days from now. On which day of the week did they first meet?

- A Monday
- B Wednesday
- C Thursday
- D Tuesday

36. Question: In a village, there are three types of people: Knights, Knaves, and Jokers. Knights always tell the truth, Knaves always lie, and Jokers can either tell the truth or lie. You encounter three villagers, A, B, and C. Each of them belongs to one of the three types. They make the following statements:

A: "B is a Knight."

B: "C is a Knave."

C: "A and B are of the same type."

Determine the types of A, B, and C.

- A A is a Knight, B is a Knave, C is a Joker.
- B A is a Knave, B is a Knight, C is a Joker.
- C A is a Knight, B is a Joker, C is a Knave.
- D A is a Joker, B is a Knight, C is a Knave.

37. At what time, between 3 and 4 o'clock, will the hands of a clock be together?

- A (160/11) minutes past 3
- B (170/11) minutes past 3
- C (180/11) minutes past 3
- D (190/11) minutes past 3



38. Find the time shown by the clock if the hour hand is between 8 and 9 and the minute hand is pointing in the exact opposite direction of the hour hand.

- A  $10\frac{10}{11}$  minutes past 8
- B  $11\frac{4}{7}$  minutes past 8
- C  $13\frac{7}{13}$  minutes past 8

D  $12\frac{11}{13}$  minutes past 8

**Instructions [39]**

Six friends - P, Q, R, S, T, and U, not necessarily in the same order are standing in a line, facing north. There are as many people between U and S as there are between R and T. S and T are not neighbors. R sits second to the right of S. U and R are neighbors. T sits at one of the ends. P and Q are not neighbors.

39. Which of the following cannot be true?

- A P is the neighbor of S
- B There are two persons between Q and U.
- C Q is the neighbour of T
- D Q is the neighbour of S

**Instructions [40]**

A machine rearranges word and numbers as shown in the steps below.

Input: goose fun everyone 18 36 25 ail 66

Step 1: ail goose fun everyone 18 36 25 66

Step 2: ail 66 goose fun everyone 18 36 25

Step 3: ail 66 everyone goose fun 18 36 25

Step 4: ail 66 everyone 36 goose fun 18 25

Step 5: ail 66 everyone 36 fun goose 18 25

Last Step: ail 66 everyone 36 fun 25 goose 18

Using this information, answer the questions below:

40. cat 80 disc 12 44 33 too much

If the above is the step 3, what will be step 6?

- A cat 80 disc 44 33 12 too much
- B cat 80 disc 44 12 33 too much
- C cat 80 disc 44 much 33 12 too
- D No such step



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**SNAP 2022 QA & DI**

41. Praveen who has a furniture shop sold a table at 20% profit. If he had sold the table for 500 rupees less, he would have incurred a loss of 20%. What is the actual cost of the table ?

- A Rs.1500
- B Rs.1000
- C Rs.4000
- D Rs.1250



42. 5 men working together can finish a piece of work in 10 days. 10 women can finish the same piece of work in 7.5 days. If 3 men and 3 women work together than how much time will it take to complete the work?
- A 15 days  
B 10 days  
C 12 days  
D 18 days
43. Ram takes 30 minutes to reach office from home by car. One day, due to heavy traffic he drove his car at  $(4/5)$ th of original speed for  $(1/3)$ rd of total distance and remaining distance at  $(2/5)$ th of the original speed. Find out the time taken by Ram on that day?
- A 67.5 minutes  
B 75 minutes  
C 65 minutes  
D 62.5 minutes
44. A two digit number increases by 75% when it's digits get reversed. Find the original number when the difference between the digits of the two-digit number is 3?
- A 63  
B 36  
C 30  
D 69



45. The largest 4 digit number that leaves the same remainder when divided by 2, 3, 4 and 5 is
- A 9960  
B 9999  
C 9997  
D 9961
46. Find the number of ways of arranging the letters of the word IMPORTANT such that "IMP" are always together in any order.
- A  $7!$   
B  $2 \cdot 7!$

C  $3 \times 7!$

D  $8!$

### Instructions [47]

A bag contains some yellow marbles, red marbles and green marbles. The probability of drawing a green marble from the box is  $\frac{1}{5}$ . There are twice as many yellow marbles as green marble. The number of red marbles in the box are 10.

47. What is the total number of marbles in the box?

A 50

B 60

C 20

D 25



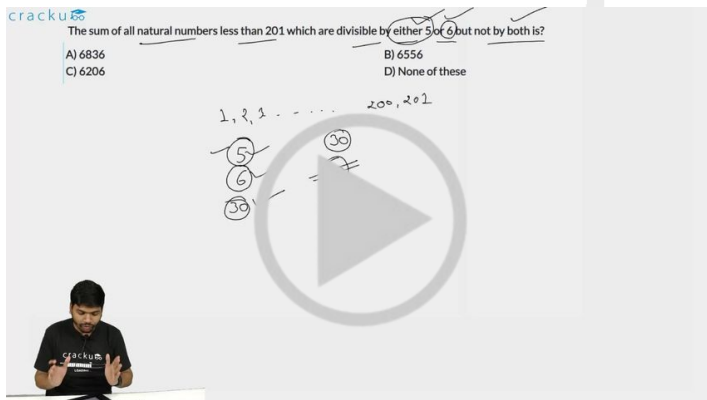
48. The sum of all natural numbers less than 201 which are divisible by either 5 or 6 but not by both is?

A 6836

B 6556

C 6206

D None of these



VIDEO SOLUTION

49. In a college consisting of 200 students, 112 students took the Maths Olympiad, 160 students took the Physics Olympiad and 128 students took the Chemistry Olympiad. If each student in the college takes at least one of the three exams, what is the minimum number of students who took all the three exams?

A 0

B 10

C 15

D 20

50. If the radius and height of a solid cone are increased by 10% and 20% respectively. By what percentage the volume of the cone is increased?

A 47.20 percent

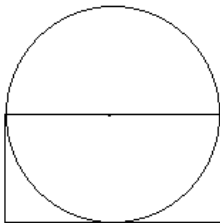
B 48.75 percent

C 58.15 percent

D 45.20 percent



51. The area of the circle is  $616 \text{ m}^2$ . What is the area of the rectangle? (\* or 'dot' indicates centre of the circle the.)



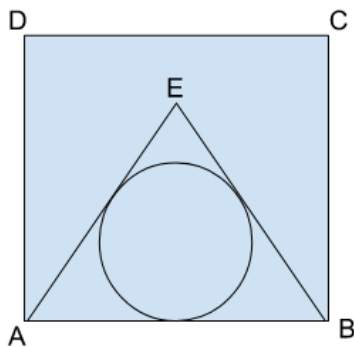
A  $784 \text{ cm}^2$

B  $196 \text{ cm}^2$

C  $392 \text{ cm}^2$

D Cannot be determined

52. In the given diagram, ABCD is a square of area  $300 \text{ sq. cm}$ . If triangle ABE is an equilateral triangle. what is the radius of the circle shown in the figure ?



A 4 cm

B 6 cm

C 5 cm

D 3 cm

### Instructions [53]

The table represents the data about the number of students studying in Delhi Public School. Further, it is known that a total of 2000 students are studying in the school from Class 5th to Class 10th.

	Students	Boys	Girls
Class 10	30%	80%	20%
Class 09	20%	75%	25%
Class 08	15%	70%	30%
Class 07	13%	70%	30%
Class 06	12%	60%	40%
Class 05	10%	55%	45%

53. What is the ratio of the number of boys studying in class 9th to the number of the girls studying in class 10th and class 5th combined?

- A 10 : 7
- B 7 : 10
- C 14 : 11
- D 11 : 14



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### Instructions [54]

The revenue and the operating expenses as a percentage of revenue of five companies - A, B, C, D and E is given in the following table. (The revenue is given in crores)

Company	Revenue	Operating Expenses
A	120	70%
B	65	
C	35	60%
D		75%
E	80	85%

Profit = Revenue - operating expenses.

54. What is the average profit of companies A and E (in crores)?

- A 48
- B 56

C 24

D 28

The revenue and the operating expenses as a percentage of revenue of five companies - A, B, C, D and E is given in the following table. (The revenue is given in crores)

Company	Revenue	Operating Expenses
A	120	70%
B	65	
C	35	60%
D		75%
E	80	85%

Profit = Revenue - operating expenses.

Handwritten notes on the right side of the table:

	Revenue	op Exp %	op Exp
A	120	70%	84
B	65		
C	35	60%	21
D		75%	
E	80	85%	68

VIDEO SOLUTION

### Instructions [55]

Instructions: Each of the following questions consists of a question followed by three statements I, II and III. You have to study the question and the statements and decide which of the statement (s) is/are necessary to answer the question.

55. What is the speed of boat in still water?

- I. The boat covers 12 km in 2 hours in downstream.
- II. The boat covers same distance in 4 hours in upstream.
- III. The speed of stream is one third of that of boat in still water.

- A Both I and II
- B I and either II or III
- C All I, II and III
- D Question cannot be answered even with the information in all three statements

56. If  $x_1$  and  $x_2$  are the roots of the equation  $x^2 - 4x - c = 0$  and  $5x_1 - x_2 = 38$ , which of the following statements is true?

- A  $c = 21$
- B  $x_1 = -7, x_2 = 3$
- C  $x_1 = 6, x_2 = -2$
- D None of these



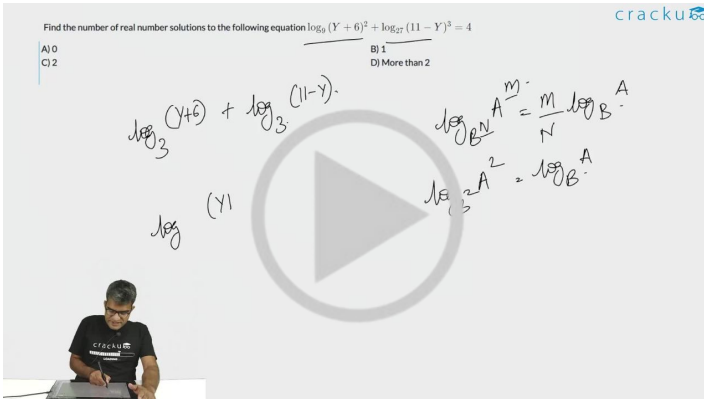
57. Find the number of real number solutions to the following equation  $\log_9 (Y + 6)^2 + \log_{27} (11 - Y)^3 = 4$

- A 0
- B 1
- C 2
- D More than 2

Find the number of real number solutions to the following equation  $\log_3 (Y+6)^2 + \log_3 (11-Y)^2 = 4$

A) 0  
B) 1  
C) 2  
D) More than 2

*Handwritten notes on the video screen:*  
 $\log_3 (Y+6) + \log_3 (11-Y)$   
 $\log_3 (Y)$   
 $\log_3 A^m = \frac{m}{N} \log_3 A$   
 $\log_3 A^2 = \frac{2}{1} \log_3 A$



VIDEO SOLUTION

58. 16 Girls take 5 days to complete a work. 15 Women take 4 days to complete the same work. If 10 Girls and 9 Women work 'x' days to complete the same work. What is the value of x ?
- A 39/11 days
  - B 40/11 days
  - C 41/11 days
  - D 42/11 days
59. Find the ratio in which a shopkeeper mixed two types of rice of cost 32/- per kg and 38/- per kg, if he sold the mixed rice for 42/- per kg at 20% profit ?
- A 1:2
  - B 2:1
  - C 1:1
  - D cannot be determined



60. Three friends Priya, Veena and Seema went to a restaurant together. Seema paid 40% of the bill and Priya and Veena split the remaining bill in the ratio 2 : 3. If the total bill amount was Rs 2400, then what is amount paid by Veena?
- A Rs 1200
  - B Rs 245

C Rs 864

D Rs 576



## Answers

SNAP 2022 VA

1.C	2.D	3.B	4.D	5.C	6.A	7.C	8.C
9.B	10.C	11.A	12.C	13.D	14.C	15.A	

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16.D	17.D	18.B	19.B	20.D	21.A	22.A	23.D
24.B	25.B	26.C	27.D	28.D	29.B	30.C	31.A
32.C	33.B	34.A	35.B	36.D	37.C	38.A	39.B
40.C							

SNAP 2022 QA &amp; DI

41.D	42.B	43.D	44.B	45.D	46.C	47.D	48.C
49.A	50.D	51.C	52.C	53.A	54.C	55.B	56.A
57.A	58.B	59.C	60.C				

# Explanations

## SNAP 2022 VA

### 1. C

"Should" is used to give advice or recommendations. This question is asking for advice on whether the person should consult or see their doctor about a persistent cough.

### 2. D

Among the options, "Quilling" refers to the activity of rolling and shaping strips of paper to make designs.

Hence, the answer is option D.

### 3. B

The prefix "de-" is added to the word "scend" to form the word "descend," which indicates to go down.

### 4. D

'Conflagration' means an extensive fire. 'Inferno' is the word which is closest in meaning to 'conflagration'.

Hence, option D is the correct answer.

### 5. C

The word "Wow" is an interjection. Interjections are words or phrases used to express strong emotions or reactions and are typically followed by an exclamation mark. In this case, "Wow" expresses surprise or admiration for the incredible performance.



### 6. A

The figure of speech used here is a simile. A simile is a figure of speech that compares two unlike things and uses the words "like" or "as".

A is the answer.

### 7. C

In the original sentence, "The car was driven by John to the mechanic for repairs," the sentence is in the passive voice because the subject (the car) is receiving the action, and the doer of the action (John) comes after the verb.

To convert the sentence into the active voice, we need to make John the subject of the sentence and have him perform the action. The original sentence is in simple past tense, so the tense should be maintained. We see that only option C has simple past tense.

### 8. C

'Said to' must be changed to 'told'. 'this plan' must be changed to 'that plan'. First person pronouns must be changed to third person pronouns.

Also, the given sentence is in the simple past tense. 'Had' has been used to indicate possession. Therefore, the reported form must be in the past perfect tense.

"Priya told Dilip that she always had had that plan in her mind" is the correct answer. Hence, option C is the right answer.

### 9. B

In part 2, the pronoun that should be used to refer to the collective belongings is 'their'.

### 10. C

Sublime means causing wonder or astonishment. Hence, Option D is the correct answer.



## SNAP Syllabus PDF



11. **A**

The 'jurisprudence' has been misspelt in the part d of the sentence. 'Jurisprudence' means rules, regulation or legislation. In the given context, the author is trying to imply that Greeks were so good in other fields that it made it difficult to believe that they were inferior to romans in legislations. Hence option A is the correct answer.

12. **C**

The phrase "De Facto" means "in fact".

It has its origins in the Latin language.

The answer is option C.

13. **D**

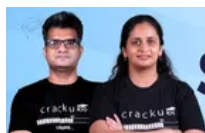
'Take time off' means to take a break. Also, only 'take' is grammatically correct in the sentence. Option D) is the correct answer.

14. **C**

The preposition which fits the given context is 'under'. 'Having' is grammatically incorrect which 'in', 'on' and 'over' are wrong usages of the prepositions. Hence, option C is the correct answer.

15. **A**

The correct word to be filled will be "to driving" as the continuous form of the verb is used with "used to". Hence, the correct option is A



## SNAP Crash Course



### SNAP 2022 Analytical & LR

16. **D**

Based on the given statements we cannot assume that public has no trust in government. Also, we cannot assume whether commenting carefully helps in winning elections. Further experience level of the ministers also cannot be assumed. Thus all the three assumptions are not implicit.

Thus, D is the correct choice.

17. **D**

From the given statement we cannot infer the success of Navi Mumbai in reducing the congestion in Mumbai. Thus, statement I cannot be inferred.

We also do not have any data form the given statement comparing the current population of Mumbai and Navi Mumbai. Thus, statement II also cannot be inferred.

18. **B**

Since Ramesh got a promotion, he is throwing a party to his friends. So, 2 is the cause and 1 is the effect.

19. **B**

In this scenario, it can be inferred that the increase in electricity bills for households (Statement I) is caused by the government raising the tariffs for electricity consumption by 10% (Statement II). When the government increases the tariffs, the cost of electricity per unit consumed by households goes up. As a result, the electricity providers charge higher rates to the consumers, leading to an increase in electricity bills.

Thus, Statement I (increase in electricity bills) is the effect, and Statement II (government raising the tariffs) is the cause of this effect. Therefore, the correct answer is Option B.

20. **D**

On the orders of the high court, the ECI has directed the parties to stop using public funds for propagating party symbol.

This does not mean that all parties used to practice this. Hence statement I is not a valid inference.

The ECI has directed the parties to follow this. However from the given amount of information, we do not know if this is binding on the parties or not. Hence inference II is also not valid.

There is no mention of the voters in the given statement. There might be other reasons due to which the court might has ordered parties not to use public funds for propagating their symbols.

Hence inference III is also not valid.

 VIDEO SOLUTION



21. **A**

If A is true, then the French fries that people consume along with coke must be the reason for hair fall which people must have mistakenly assumed to be caused by coke. This weakens the author's claim.

Sentence B and C strengthens the author's claim rather than weakening it. Option D is irrelevant to the argument. Thus, A is the correct answer.

22. **A**

While financial incentives may provide short-term motivation, they are not always effective in addressing deeper employee engagement and turnover issues. Relying solely on financial incentives may create a culture of short-term motivation rather than long-term commitment. It is essential to focus on developing leadership skills and creating a supportive work environment to address the underlying causes of low engagement and high turnover.

By implementing a leadership development program, the organization invests in its senior executives' growth and professional development. This program can include training, mentoring, and coaching sessions to strengthen their leadership abilities, enhance engagement, and improve job satisfaction. Developing effective leaders can positively impact employee engagement and reduce turnover rates.

By choosing Option 2, the organization recognizes the importance of investing in leadership development as a long-term solution to enhance employee engagement and reduce turnover rates among senior executives.

23. **D**

Both courses of action can be considered as feasible steps to address the problem of increased crime rate in the city. Course of Action I focuses on immediate law enforcement measures to deter criminals and maintain public safety. By increasing police presence and implementing stricter measures, potential criminals may be deterred from committing crimes, leading to a decrease in the crime rate. Course of Action II, on the other hand, aims to address the root causes of crime by fostering community engagement and building stronger relationships between residents and law enforcement agencies. This approach can contribute to preventing crime through proactive measures such as education, awareness campaigns, and community cooperation. Implementing both courses of action in conjunction could lead to a comprehensive strategy for combating crime and ensuring the safety and well-being of the city's residents.

24. **B**

Since the number of street dogs is causing a problem in the locality, the corporation should neuter them and shift them to a animal shelter.

Culling them is inhumane and is not a solution to the problem.

25. **B**

The numerical position of E is 5, A is 1 and T is  $20 - 5 \times 1 \times 20 = 100$ .

The numerical position of C is 3, A is 1 and T is  $20 - 3 \times 1 \times 20 = 60$ .

$$\text{BAIN} = 2 \times 1 \times 9 \times 14 = 252.$$

$$\text{PAINT} = 16 \times 1 \times 9 \times 14 \times 20 = 40320.$$

$$\text{HIGH} = 8 \times 9 \times 7 \times 8 = 4032.$$

$$\text{RAISE} = 18 \times 1 \times 9 \times 19 \times 5 = 15390.$$

As we can see, PAINT will be coded as 40320. Therefore, option B is the right answer.



26. C

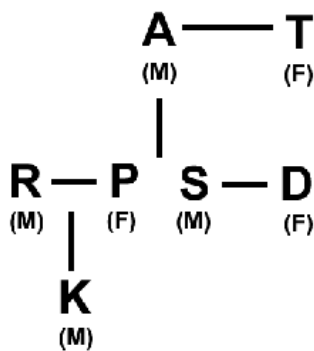
The coding is based on the following rule. The first word is replaced by the word preceding it, the second word is replaced by the word succeeding it, the third word is replaced by the word preceding it and so on. Only option c satisfies this condition.

VIDEO SOLUTION

27. D

Father's brother's daughter will be Monica's cousin. Thus, Monica will be the Aunt of this cousin's son. Hence, option D is the correct answer.

28. D



K is the son of P. P is the sister of S. So K is the nephew of S.

29. B

The pattern in the given series is

$$1^3 + 2 = 3$$

$$2^3 + 3 = 11$$

$$3^3 + 4 = 31$$

$$4^3 + 5 = 69$$

$$5^3 + 6 = 131$$

Hence the next term will be

$$6^3 + 7 = 223$$

30. C

$$1 \times 2 - 3 = -1$$

$$2 \times 3 - 4 = 2$$

$$3 \times 4 - 5 = 7$$

$$4 \times 5 - 6 = 14$$

$$5 \times 6 - 7 = 23$$

$$6 \times 7 - 8 = 34$$



31. **A**

H - 8

D -  $8/2=4$

R - 18

I -  $18/2=9$

Using the same logic,

Z - 26

M -  $26/2 = 13$

Hence, option A is the right answer.

32. **C**

The logic followed here is,

$S + 2 = U$ ,  $U + 2 = W$ ,  $W + 2 = Y$ . All the letters are added by 2.

$B - 2 = Z$ ,  $Z - 2 = X$ ,  $X - 2 = V$ . All the letters are subtracted by 2.

Hence, the correct option is C.

33. **B**

The place values of B and D are 2 and  $2^2 = 4$

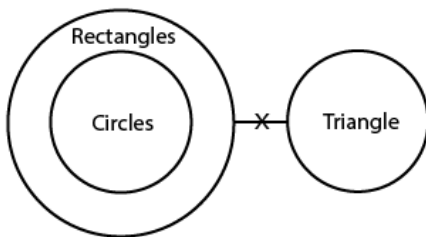
The place values of E and Y are 5 and  $5^2 = 25$

The place values of C and I are 3 and  $3^2 = 9$

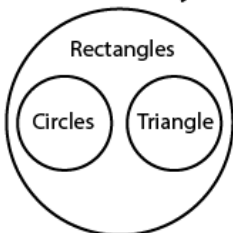
But the place values of D and U are 4 and 21. Hence, Option B is correct answer.

34. **A**

Basic



Possibility



All Triangles are Rectangle is not always true. All Triangle being Rectangle is a possibility. Hence, only Conclusion I follows. Option A is correct.

35. **B**

To determine the day of the week when Sofu and Kitto finally met, we need to calculate the total number of days between their initial meeting and the day they were supposed to meet.

Sofu met Kitto 25 days ago. Let's denote this day as Day 1.

Kitto informed Sofu that they would meet after 10 days from today, which is a Wednesday. Let's denote this day as Day 2.

To find the day of the week when they finally met, we need to add the number of days between Day 1 and Day 2 and determine the resulting day of the week.

The number of days between Day 1 and Day 2 is calculated as follows:

25 days + 10 days = 35 days.

Since there are 7 days in a week, we divide 35 by 7 to determine the remainder.

$35 \text{ days} \div 7 = 5 \text{ weeks}$  with no remainder.

This means that after 5 weeks, the day of the week will remain the same.

Since Day 1 was a Wednesday, and 5 weeks have passed, the day of the week when Sofu and Kitto finally met is also a Wednesday.

Therefore, they met on a Wednesday.



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**36. D**

Let's assume A is a knight, which implies A always tells the truth, implying B is a knight, which is not possible (Since only one knight is there).

Now if A is a knave, which implies B is surely not Knight, which implies B is a joker  $\Rightarrow$  C is the knight (which is impossible since C's statement is definitely false.)

Therefore, A must be a joker, which implies C is a knave and B is a knight.

The correct option is D.

**37. C**

When the time of the clock is 3 o'clock, the hour hand is at 3, and the minute hand is at 12, making an angle of 90 degrees. We know that the relative velocity of the minute hand w.r.t the hour hand is 5.5 degrees per minute.

Hence, it will take  $(90/5.5)$  minutes to make the angle between the hands 0 degrees. (the hands will be together)

$(90/5.5) = (180/11)$  minutes past 3.  $\Rightarrow 16 \frac{4}{11}$  minutes past 3.

The correct option is C.

**38. A**

The hour hand covers 30 degrees in 1 hour or 0.5 degrees / min

The min hand covers 360 degrees in 1 hour of 6 degrees/ min

Hence, we can say that the the minute hand gains  $6 - 0.5 = 5.5$  degrees on hour hand, every minute.

At 8 pm the the hour hand will be ahead of minute hand by  $30 \times 8 = 240$  degrees.

Hence, the minute hand will have to cover 60 degrees more w.r.t the hour hand for them to point in opposite direction/ for the angle between them to be 180 degrees.

let x be the number of minutes taken by the minute hand to do the same.

$$5.5x = 60$$

$$x = 60/5.5 = 120/11 = 10 \frac{10}{11}$$

**39. B**

Given, R sits second to the right of S.

1

2

3

4

5

6

The possible cases are (S, R) are (4, 6), (3, 5), (2, 4) and (1, 3)

If (S, R) sit at (4, 6), U has to sit at 5 as U and R are neighbors. Since the number of people between S and U is same as the number of people between R and T, T has to sit at 3. But T sits at one of the ends, which is not

possible.

If (S,R) sit at (3, 5), U can sit at 6 or 4. If U sits at 6, T should sit at 2 as the number of people between S and U is same as the number of people between R and T. This is not possible as T should sit at one of the ends. If U sits at 4, T has to sit at 6. This is not possible as P and Q should not be neighbors.

If (S, R) sit at (2, 4), U can sit 3 or 5. If U sits at 3, T has to sit at 5, which is not possible as T sits at one end. If U sits at 5, T has to sit at 1, but T and S are not neighbors, hence this case is not possible.

If (S, R) sit at (1, 3), U can sit at 2 or 4. U cannot sit at 2 because then T has to sit at 4, which is not possible. If U sits at 4, T has to sit at 6. P, Q can sit at either 2 or 5 in any order.

Thus, 2 cases are possible:

Case 1:

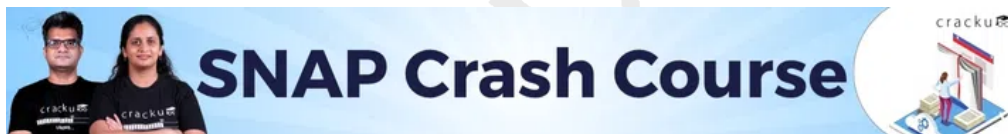
<u>S</u>	<u>P</u>	<u>R</u>	<u>U</u>	<u>Q</u>	<u>T</u>
1	2	3	4	5	6

Case 2:

<u>S</u>	<u>Q</u>	<u>R</u>	<u>U</u>	<u>P</u>	<u>T</u>
1	2	3	4	5	6

40. C

Option c is step 6 by given description of the machine.



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41. D

Let x be the actual cost of the table.

Selling price of the table when sold at 20% profit =  $1.2x$  - (i)

Selling price of the table when sold at 20% loss =  $.8x$  - (ii)

Given, the difference between the two is Rs.500. Thus,  $1.2x - .8x = 500$

$\Rightarrow x = 500 / .4x = \text{Rs.}1250$

42. B

5 men working together can finish the work in 10 days. Let each man does x units of work in 1 day. So total work to be done =  $50x$

Now 10 women finish the work in 7.5 days. Hence, if y is the amount of work done by 1 women in 1 day then total work =  $10 \times 7.5 = 75y$

$50x = 75y$

$\Rightarrow x/y = 3/2$

So, let  $y = 2x/3$

When 3 men and 3 women work, then the amount of work done by them in 1 day =  $3x + 2x = 5x$

Hence it will take 10 days to complete 50 units of work.

43. D

Let the distance between Ram's office and home =  $150d$

Then his original speed =  $\frac{150d}{30} = 5d$

Distance that Ram covered at  $(1/3)$ rd of original distance =  $\frac{150d}{3} = 50d$

$(4/5)$ th of original speed =  $\frac{4}{5} * 5d = 4d$

Time taken by Ram to cover this distance =  $\frac{50d}{4d} = 12.5$  minutes

Remaining distance =  $150d - 50d = 100d$

$(2/5)$ th of original speed =  $\frac{2}{5} * 5d = 2d$

Time taken by Ram to cover the remaining distance =  $\frac{100d}{2d} = 50$  minutes

Hence total time taken by Ram =  $12.5 + 50 = 62.5$  minutes

44. **B**

Let the two digit number be  $10x$  and  $y$ .

ATQ,

$(10y+x) = (100+75)\%$  of  $(10x+y)$

$10y+x = 7/4 (10x+y)$

$10y - 7y/4 = 35x/2 - x$

$33y/4 = 33x/2$

$y = 2x$  ---- (a)

And from the question it says that the difference between the digits of the number is 3 so

$y-x = 3$  ----(b)

So from eq (a) and (b)

We get,  $y = 6$  and  $x = 3$

So the original number is 36.

45. **D**

We know that the number leaves the same remainder when divided by 2,3,4 and 5.

Therefore, the number should be of the form  $\text{LCM}(2,3,4,5) + k$ .

LCM of 2,3,4,5 is 60.

The largest multiple of 60 below 10,000 is 9960.

2 can leave a remainder of 0 or 1.

Therefore, the largest possible value of  $k$  is 1.

The largest 4 digit number that leaves the same remainder when divided by 2, 3, 4 and 5 is  $9960 + 1 = 9961$ .

Therefore, option D is the right answer.



46. **C**

When IMP are always together, consider them as one group.

Number of ways of arranging IMP and other letters =  $7!/2! = 7!/2!$

IMP can be arranged in  $3!$  ways.

Total number =  $3! * 7!/2! = 3 * 7!$

47. **D**

Probability of drawing a green marble from the box is  $\frac{1}{5}$

We know that the number of yellow marbles are twice as many as green marbles. Hence the probability of yellow marbles would be  $\frac{2}{5}$

Since there are only 3 types of marbles in the box, so the probability of red marbles would be  $1 - \frac{1}{5} - \frac{2}{5} = \frac{2}{5}$

Let the total number of marbles be  $k$ , then we have

$$\frac{10}{k} = \frac{2}{5}$$

$$\Rightarrow k = 25$$

48. **C**

Natural numbers less than 201 and divisible by 5 are 5, 10, ... 200. Here,  $5+200 = 10+195 \dots = 100+105$ . Hence, there are  $40/2 = 20$  pairs totalling 205.

Sum of all natural numbers less than 201 divisible by 5 is  $20 * 205 = 4100$

Similarly, natural numbers less than 201 and divisible by 6 are 6, 12, ... 198.  $6+198 = 12+192 = \dots = 96+108$  and 102. Hence, there are  $\lfloor 201/6/2 \rfloor = 16$  such pairs and 102.

Sum of all natural numbers less than 201, divisible by 6 is  $16 \times 204 + 102 = 3366$

Similarly, Sum of all natural numbers divisible by both 5 and 6 is  $6 \times 210/2 = 630$ . These numbers have been summed in both the above totals. Hence, we need to deduct 2 times 630.

So, required total is  $4100 + 3366 - 2 \times 630 = 6206$

 VIDEO SOLUTION

49. **A**

Let the number of students who took exactly one exam be 'x'.

The number of students who took exactly two exams be 'y' and the number of students who took exactly three exams be 'z'.

So,  $x + y + z = 200$

$x + 2y + 3z = 112 + 160 + 128 = 400$

From these two equations, we get,  $y + 2z = 200$

To minimize 'z', we have to maximize 'y'. If  $z = 0$ ,  $y = 200$ . In this case,  $x = 0$

So, the minimum number of students who took all the three tests is 0.

50. **D**

Let  $r$  and  $h$  be the radius and height of the cone.

Initial volume =  $\frac{1}{3} * \pi * r^2 * h$

Final volume =  $\frac{1}{3} * \pi * (1.1r)^2 * (1.2h)$

Therefore, final volume =  $1.452 * \frac{1}{3} * \pi * r^2 * h$

Therefore, percentage increase =  $\frac{1.452 * \frac{1}{3} * \pi * r^2 * h - \frac{1}{3} * \pi * r^2 * h}{\frac{1}{3} * \pi * r^2 * h} * 100 = 45.20\%$

Hence option D is the correct answer.



51. **C**

The area of the circle is 616.

So, the radius of the circle is  $\sqrt{\frac{616}{\pi}} = 14$

Hence, the length of the rectangle is  $14 \times 2 = 28$  and the breadth equals 14

So, the area of the rectangle is  $14 \times 28 = 392$  sq m

52. **C**

Let us assume that the radius of the circle is  $r$  cm and the side of the triangle ABE is  $a$  cm.

Then, side of triangle ABE,

$\Rightarrow r = \frac{\Delta}{S}$  (Where  $\Delta$  = Area of triangle and  $S$  = semi-perimeter of triangle)

$\Rightarrow r = \frac{(\frac{\sqrt{3}}{4}) \times a^2}{\frac{3a}{2}}$

$\Rightarrow r = \frac{a}{2\sqrt{3}}$

$\Rightarrow a = 2\sqrt{3} \times r$

We are given that the area of square ABCD = 300 sq. cm.

$\Rightarrow a^2 = (2\sqrt{3} \times r)^2$

$\Rightarrow 300 = 12r^2$

$\Rightarrow r = 5\text{cm}$

Hence, option C is the correct answer.

53. **A**

Total number of students in Class 10th =  $\frac{30}{100} \times 2000 = 600$

Out of these 600 students, the number of boys students in class 10th =  $\frac{80}{100} \times 600 = 480$

The number of girls students in class 10th =  $\frac{20}{100} \times 600 = 120$

In similar way we can calculate number of boys and girls in each class. Tabulating the same data

	Students	Boys	Girls
Class 10	600	480	120
Class 09	400	300	100
Class 08	300	210	90
Class 07	260	182	78
Class 06	240	144	96
Class 05	200	110	90
Total	2000	1426	574

From the table we can see that,

The number of boys studying in class 9th = 300

Sum of the number of the girls studying in class 10th and class 5th =  $120 + 90 = 210$

Hence, the required ratio =  $300 : 210 = 10 : 7$

Therefore, option A is the correct answer.

54. **C**

From the given table,

Revenue of A = 120 crores

Operating expenses = 70% of 120 = 84 crores

Profit =  $120 - 84 = 36$  crores

Similarly, calculating and tabulating the values for other companies,

Company	Revenue	Operating Expenses	Profit
A	120	84	36
B	65		
C	35	21	14
D			
E	80	68	12

Average profit of companies A and E =  $48/2 = 24$  crores

 VIDEO SOLUTION

55. **B**

Downstream = boat + stream =  $\frac{12}{2} + \text{stream} = 6$  km/hr

Upstream = boat - stream =  $\frac{12}{4} - \text{stream} = 3$  km/hr

Solving the above equations we get boat = 4.5 km/hr and stream =  $6 - 4.5 = 1.5$

Speed of the stream =  $\frac{1}{3}$ rd of that of the boat in still river = 1.5

56. A

$x_1 + x_2 = 4$  and  $5x_1 - x_2 = 38$ . So,  $x_1 = 7$  and  $x_2 = -3$ . Hence,  $c = 21$

57. A

$$\log_9 (Y + 6)^2 + \log_{27} (11 - Y)^3 = \log_3 (Y + 6) + \log_3 (11 - Y) = \log_3 (66 + 5Y - Y^2)$$

$$\text{So, } 66 + 5Y - Y^2 = 3^4 = 81$$

$$\text{Or, } Y^2 - 5Y + 15 = 0$$

This equation has no real roots

 VIDEO SOLUTION

58. B

Total work in terms of girl days i.e only girls working is  $16 \times 5 = 80$  GD

Total work in terms of Women days i.e only women working is  $15 \times 4 = 60$  WD

Therefore  $80 \text{ GD} = 60 \text{ WD}$

$$1 \text{ WD} = \frac{4}{3} \text{ GD}$$

So total work in terms of given people is  $10x \text{ GD} + 9x \text{ WD} = 80 \text{ GD}$

$$10x \text{ GD} + 12x \text{ GD} = 80 \text{ GD}$$

$$22x = 80$$

$$x = \frac{40}{11} \text{ days}$$

59. C

Let the ratio =  $m:n$

Let CP of the mixture per kg =  $k$

$$(1.2)k = \text{SP} = 42$$

$$k = \frac{42}{1.2} = 35/-$$

$$32(m) + 38(n) = (35)(m+n)$$

$$32m + 38n = 35m + 35n$$

$$3m = 3n$$

$$m/n = 1$$

Hence the ratio is  $m:n = 1:1$

So the answer is option C.

60. C

The amount paid by Veen and Priya =  $2400 - \text{Seema's share} = 2400 - 40\% \text{ of } 2400 = \text{Rs } 1440$

Thus, the amount paid by Veena =  $\frac{3}{5} \times 1440 = \text{Rs } 864$



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