



SNAP 2023 Question Paper

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SNAP 2023 VA

1. Given below are the statements with blanks. You are required to fill in the blanks with the appropriate option so that the sentence has correct tense.

We _____ to the beach when it started raining.

- A went
- B have gone
- C were going
- D had gone



Instructions [2]

In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.:

2. Salt of the earth

- A There's a good aspect to every bad situation
- B Reverse the situation
- C To be practical and sensible.
- D Being honest and good

3. Identify the prefix word in the given sentence:

The multilingual tour guide expertly navigated the group through the crowded streets of the city, providing fascinating historical anecdotes and insights in multiple languages.

- A anecdotes
- B multilingual
- C insights
- D navigated

4. Select the word which is opposite in meaning to the given word.

WHODUNIT

- A conundrum
- B enigma
- C manifest
- D innuendo

5. Identify the correct part of speech of the **highlighted words** in this paragraph

"In the bustling city, cars zoomed past, honking their **horns** impatiently. People **hurriedly** walked along the crowded sidewalks, clutching their umbrellas tightly as rain poured down. Laughter echoed from nearby cafes, filling the air with a cheerful **ambience**. Streetlights illuminated the darkening streets, creating a warm glow."

- A Horns - Verb, Hurriedly - Adverb, Ambience- Adjective
- B Horns - Adverb, Hurriedly - verb, Ambience- Adjective
- C Horns - Verb, Hurriedly - Adverb, Ambience- noun
- D Horns - Noun, Hurriedly - Adverb, Ambience- Noun

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

The alarm clock buzzed at the time I was going to the bathroom.

- A Onomatopoeia
- B Personification
- C Hyperbole
- D Alliteration

7. In the following question, a sentence has been given in Active/Passive Voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active Voice.

The electricity bill was paid by Arjun.

- A Arjun pays the electricity bill.
- B Arjun had paid the electricity bill.
- C Arjun paid the electricity bill.
- D Arjun has paid the electricity bill.

8. In the following question, a sentence has been given in Direct/Indirect speech. Out of the four alternatives suggested, select the one, which best express the same sentence in the Indirect/Direct speech.

They said that they had won the competition.

- A They said, "We won the competition".
- B They said, "We are winning the competition".
- C They said, "We will win the competition".
- D They said, "They had won the competition".

Instructions [9]

Choose the part of the sentence that contains a grammatical error. Choose option 5 if the sentence is grammatically correct as it is. Ignore errors in punctuation.

9. There are degrees of greatness, (1)/ and there is a universal tendency (2)/ to think of the animals that have become extinct (3)/ as much greater than those of the present day. (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.

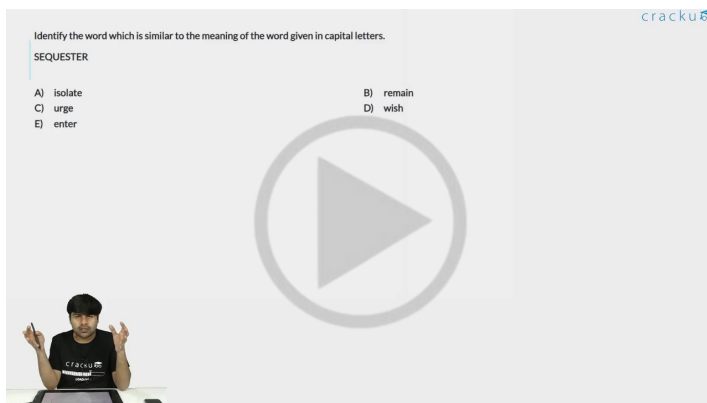
SEQUESTER

A isolate

B remain

C urge

D wish



VIDEO SOLUTION



11. In the following question, four words are given out of which one word is incorrectly spelt. Select the incorrectly spelt word.

A tyranny

B miniature

C visious

D hierarchy

12. Which of the following is the meaning of the word given below?

ipso facto

- A As per the fact
- B In fact
- C by the fact itself
- D in spite of the fact

13. Sachin played ____ matches per year towards the end of his career. That was because he had ____ time on his hands than before.

- A less, lesser
- B fewer, less
- C fewer, fewer
- D lesser, lesser



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Instructions [14]

Fill in the blanks

14. The government's ____ to ban cow slaughter has not ____ down well with certain sections of the society.

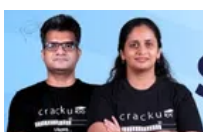
- A decision, gone
- B action, went
- C order, get
- D suggestion, acted

Instructions [15]

Fill in the blanks

15. The butterflies _____ the insects are what the birds are among the higher animals—the most attractive and beautiful members of the great group to which they _____.

- A along, reside
- B among, belong
- C between, exist
- D amid, form



SNAP Crash Course



SNAP 2023 Analytical & LR

16. Read the following passage and choose the option that cannot be said to be an implicit assumption:

The pollution level in the city has skyrocketed in the past few months. The city corporation, in an attempt to curb the pollution, has made it mandatory for all vehicles to be fitted with catalytic converters. Also, it has proposed a policy by which only vehicles of a particular parity (odd or even numbered vehicles) can be driven on a particular day.

- A Pollution from causes other than vehicles is negligible.
- B Restricting the vehicles that can be driven will force people to opt for alternative modes of transport or to pool the resources.
- C Vehicles are one of the major contributors to the pollution in the city.
- D Catalytic converters help to reduce the harmful emissions of the vehicles.



17. Given below is a statement is followed by two assumptions. An assumption is something supposed or taken for granted. You have to consider the statement to be true even though it may seem untrue in the real life and decide which of the assumptions is implied in the statement.

Statement: Watching TV for long hours also causes obesity.

Assumption

1: There are many causes of obesity of which watching TV is one.

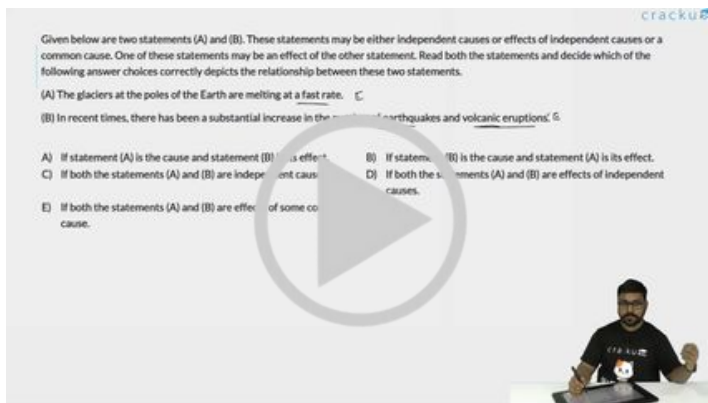
2: Watching TV for short hours doesn't cause obesity.

- A Only assumption 1 is implicit
 - B Only assumption 2 is implicit
 - C Either assumption 1 or assumption 2 is implicit
 - D Neither assumption 1 nor assumption 2 is implicit
18. Given below are two statements (A) and (B). These statements may be either independent causes or may be effects of independent causes or a common cause. One of these statements may be 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.

(A) The glaciers at the poles of the earth are melting at a fast rate.

(B) In recent times there has been a substantial increase in the incidents of earth quakes and volcanic eruptions.

- A If statement (A) is the cause and statement (B) is its effect.
- B If statement (B) is the cause and statement (A) is its effect.
- C If both the statements (A) and (B) are effects of independent causes.
- D If both the statements (A) and (B) are independent causes.



VIDEO SOLUTION

19. In the following question, two statements numbered I and II are given. There may be cause and effect relationship between the two statements. These two statements may be the effect of the same cause or independent causes. These statements may be independent causes without having any relationship.

I. China's economy is experiencing remarkable growth

II. The standard of living in china has been growing since last few years

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



20. Should a terrorist who has killed a large number of people be executed?

Arguments:

I: Yes, since killing him will set a good precedent and prevent any future damage he is likely to cause had he been alive.

II: No, since killing a person is a violation of human rights.

- A Only argument I is strong
- B Only argument II is strong
- C Either of the arguments is strong
- D Neither of the arguments is strong

Instructions [21]

Based on the statement given, classify the arguments as strong or weak. Choose the appropriate option based on the strengths of the argument:

21. Should we ban weed (a plant used for drug production)?

Argument 1: Yes, as weed leads to health problems and mental instability, leading to increase in crime rates.

Argument 2: No, a good chunk of people from hilly terrains depend on weed cultivation for their economic

sustenance.

- A Only argument 1 is strong
- B Only argument 2 is strong
- C Either argument 1 or argument 2 is strong
- D Both arguments 1 and 2 are strong

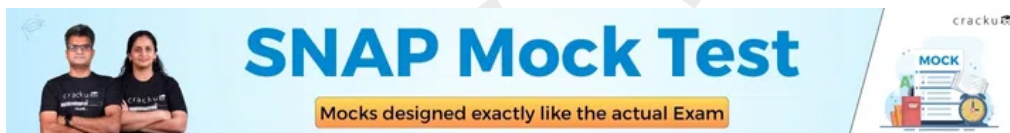
22. In the question below, a statement is given, followed by two courses of action numbered I and II. A course of action is a practicable and feasible step or administrative decision for follow-up, improvement or further action concerning the problem, policy, etc. Based on the information in the statement, you have to assume everything in the statement to be true and decide which of the suggested courses of action logically follow(s) to pursue.

Statement: The pollution levels in a city have reached hazardous levels, posing significant risks to the health and well-being of its residents.

Course of Action I: Implement strict emission control regulations and standards for industries and vehicles to reduce pollution levels.

Course of Action II: Promote and incentivize the use of public transportation and carpooling to decrease the number of vehicles on the road.

- A Only I
- B Only II
- C Neither I nor II
- D Both I and II



Instructions [23]

In each question below a statement is given followed by two courses of action numbered I and II. A course of action is a practicable and feasible step or administrative decision to be taken for follow-up, improvement or further action in regard to the problem, policy, etc. On the basis of the information given in the statement, you have to assume everything in the statement to be true, and decide which of the suggested courses of action logically follow(s) for pursuing.

23. Statement : Chotu was caught by school principal for cheating in exams fourth time this year despite giving warning by the principal.

Courses of action :

I. Since warnings were clearly given earlier, Chotu must be rusticated from school.

II. School authorities must specially start conducting open book exam for children like Chotu.

- A if only I follows.
- B if only II follows.
- C if either I or II follows.
- D if neither I nor II follows.

24. Statement:

Should unauthorized buildings in the city be demolished?

Conclusions:

I. Yes, this will give out a clear message to builders to stop building any such new structures.

II. No, there will be people residing in such buildings.

- A Only argument I is strong
- B Only argument II is strong
- C Either I or II is strong
- D Neither I nor II is strong

Instructions [25]

In a certain code language,

"happy life is forever" is coded as "ky st oi lm"

"match risky is betting" is coded as "le oi pn az"

"key to be happy" is coded as "lm dk kr fc"

"bottle life to match" is coded as "le rc st dk"

Answer following questions based on the given information:

25. "fc" is the code for which of the following?

- A key
- B Happy
- C to
- D Either key or be



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26. In a certain code language, 'CRICKET' is written as 'DTLGPKA' and 'SUNNY' is written as 'TWQRE', then what is the code for 'BANNER'?

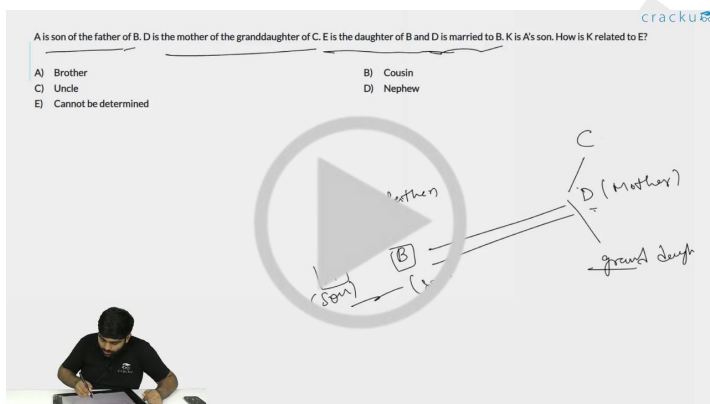
- A DCQRJX'
- B CBQQJX'
- C CCQQJX'
- D CCQRJX



VIDEO SOLUTION

27. A is son of the father of B. D is the mother of the granddaughter of C. E is the daughter of B and D is married to B. K is A's son. How is K related to E?

- A Brother
- B Cousin
- C Uncle
- D Nephew



VIDEO SOLUTION

28. A man goes to a party and meets Rakesh, who is the man's mother's only son's daughter's husband. How is the man related to Rakesh?

- A cousin
- B father-in-law
- C brother
- D son-in-law

A man goes to a party and meets Rakesh, who is the husband of the daughter of the man's mother's only son's daughter. How is the man related to Rakesh?

A) cousin
B) Father-in-law
C) Brother
D) Son-in-law
E) Brother-in-law

The diagram shows a man connected to a woman, who is connected to Rakesh (husband). The woman is the daughter of the man's mother's only son's daughter.

VIDEO SOLUTION



29. A series is given with one missing term. Choose the correct alternative from the given options that will complete the series.

24, 26.5, 21.5, 29, 19, ?

- A 29.5
- B 33
- C 31.5
- D 27.5

Instructions [30]

Each of the following questions has a series of numbers which follow a definite pattern except for one number. Identify the incorrect term of the series.

30. 13, 14, 27, 81, 320, 1605

- A 81
- B 14
- C 27
- D 1605

Instructions [31]

In the given series below, certain trend is being followed in each term. Find the next term in the series which follows the same trend.

31. BYXCDW, CXWDEV, DWVEFU, ?

- A EVUFGT
- B EUVFTG
- C EVGTUF

D EVTGFU



32. Which of the following options follow the same rule as the terms given below:
OEG, RHJ, WMO, ?

- A VKD
- B ZPR
- C XMQ
- D ULP

33. There of the four options are alike in a certain way. Choose the one which does not belong to that group.

- A GMJ
- B MQO
- C KPM
- D DHF

34. In this question three statements are given, followed by two conclusions. You have to consider the statements to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements and select the appropriate option.

Statement I: Some planets are stars.

Statement II: Some stars are satellites.

Statement III: All satellites are meteors.

Conclusion I: All stars are meteors.

Conclusion II: Some planets can be meteors.

- A Conclusion I follows
- B Conclusion II follows
- C Both conclusion I and conclusion II follow
- D Neither conclusion I nor conclusion II follow



35. Today is Saturday. After 243 days, it will be:

- A Monday
- B Tuesday
- C Wednesday

D Thursday

36. P said, "Q likes cricket."

Q said, "I don't like cricket."

R said, "P is lying."

If only one person tells the truth, who are the liars?

A P and R

B Q and R

C P and Q

D None of these

37. What is the angle between the minute and hour hands of the clock at 8:40 PM?

A 10 degree

B 15 degree

C 20 degree

D 18 degree



38. If the angle between 2 hands of a clock is 35 degrees and the hour hand is between 3 and 4, what time does the clock show?

A 10 minutes past 3

B $22\frac{8}{11}$ minutes past 3

C $23\frac{7}{11}$ minutes past 3

D both a and b

Instructions [39]

Read the information given below carefully and answer the questions which follow.

P, Q, R, S, T, U, V and W are six friends who are seated in a row. All of them are facing north. V is second to the right of U. S is third to the left of Q. There are 3 people sitting between P and W and neither P nor W are seated at the end positions. W is to the right of P and there are 4 people between R and T with R being to the left of T. There are 3 people T and U.

39. Four of the following are similar in some way. Pick the odd one out.

A RU

B VT

C ST

D WQ

Instructions [40]

Study the following information carefully and answer the given questions.

A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

Input: peps 56 coke sprite 12 fanta 32 48 rasna 15

Step 1: coke peps sprite 12 fanta 32 48 rasna 15 56

Step 2: coke 12 peps fanta 32 48 rasna 15 sprite 56

Step 3: coke 12 fanta peps 32 rasna 15 48 sprite 56

Step 4: coke 12 fanta 15 peps 32 rasna 48 sprite 56

Step 4 is the final step of the process.

Another input is processed through the same machine.

Input: 68 fly 24 38 pig 91 star 56 eagle air

40. How many steps are required to get the desired output from the given input?

- A 1
- B 2
- C 3
- D 4



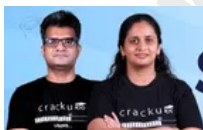
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41. By selling a T-shirt at 25% discount, Ramu manages to earn a profit of 20%. How much above the cost price did he mark the T-shirt?

- A 50%
- B 60%
- C 40%
- D 30%



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42. A local train having speed 36 Km/hr leaves Thane station and after 30 mins Chennai express leaves Thane station at speed of 72km/hr. What will be the time required by Chennai express to completely overtake the local train if both trains do not stop in between?

- A 1550 sec
- B 1600 sec
- C 1800 sec

D 1650 sec

43. A boat takes 4 hours to travel from P to Q upstream. If the distance between P and Q is 20 km and the speed of the boat in still water is 3 times the speed of the stream, then how much time will the boat take to travel from Q to P downstream?
- A 3 hours
B 2 hours
C 90 minutes
D 75 minutes
44. a,b,c,d are 4 distinct even natural numbers less than 10. The highest power of 2 that will definitely divide the product of these 4 numbers is
- A 32
B 64
C 128
D 256



45. It is given that $k^4 + \frac{1}{k^4} = 47$ (where $k > 0$), then find the value of $k^3 + \frac{1}{k^3}$.
- A 18
B 27
C 9
D 12
46. A card is drawn from a pack of 100 cards numbered 1 to 100. Find the probability of drawing a number which is square?
- A $\frac{2}{5}$
B $\frac{3}{15}$
C $\frac{7}{10}$
D $\frac{1}{10}$
47. 5 red, 4 blue and 3 green balls are kept in bag. Two balls are drawn at random from the bag. What is the probability that none of the two balls drawn is red in color?
- A $\frac{7}{12}$
B $\frac{3}{22}$

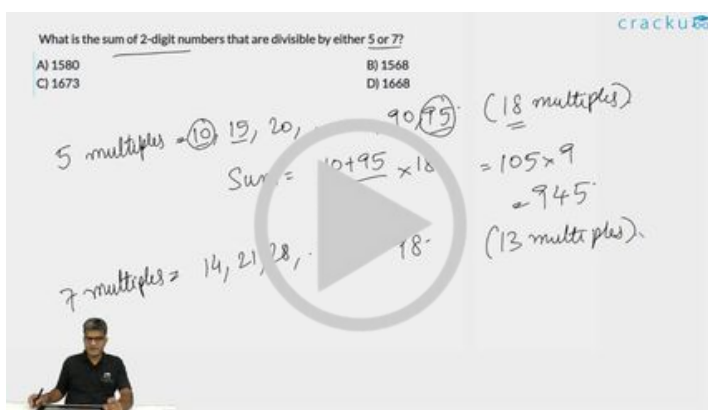
C $\frac{5}{12}$

D $\frac{7}{22}$



48. What is the sum of 2-digit numbers that are divisible by either 5 or 7?

- A 1580
- B 1568
- C 1673
- D 1668



VIDEO SOLUTION

49. According to a survey conducted in a neighbourhood, at least 70% of the people read the Hindu, at least 75% of the people read the Times of India and at least 80% of the people read the Deccan Chronicle. What is the minimum percentage of people in the neighbourhood, who read all three newspapers?

- A 20%
- B 25%
- C 22%
- D 26%

50. Five spheres, each of radius 3 cm, are melted to form a new cylinder of the same radius. What is the height of the cylinder formed?

- A 30 cm
- B 20 cm
- C 75 cm
- D 45 cm



51. If (3,2) is the centroid of a triangle of vertices A(x,1), B(4,6) and C(-1, y) then find the value of (x+y) ?

- A 3
- B -5
- C 5
- D -3

52. Find the radius of the circle that circumscribes an equilateral triangle of side 6 cm.

- A $3\sqrt{2}$ cm
- B $\sqrt{3}$ cm
- C $\sqrt{2}$ cm
- D $2\sqrt{3}$ cm

Instructions [53]

A Movie theatre, J cinemas, screens four movies - W, X, Y and Z. The following table gives the data about the number of viewers of each movie for five days of a particular week.

	W	X	Y	Z
Monday	120	94	136	46
Tuesday	98	87	144	84
Wednesday	110	123	120	88
Thursday	135	140	150	94
Friday	175	160	186	125

53. The total number of viewers on Friday is approximately what percent greater than the number of viewers on Monday?

- A 56%
- B 63%
- C 54%
- D 67%



Instructions [54]

Refer to the table and answer the following questions.

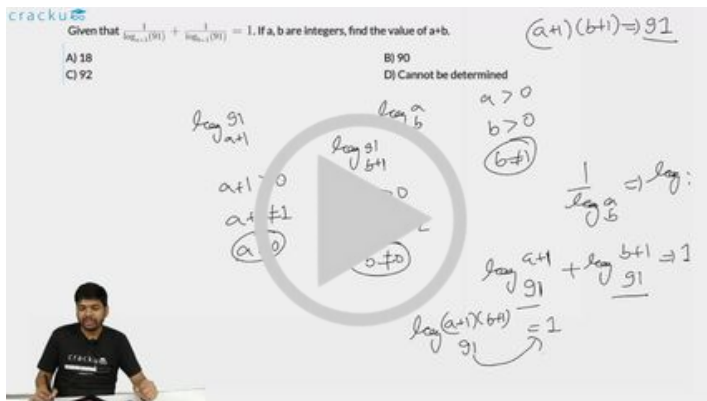
Data related to the students of 5 sections			
Sections	Number of students in the section	Percentage of the students who passed	Ratio of girls who passed to boys who passed
A			2 : 3
B	80	40%	
C		50%	3 : 4
D	90		5 : 6
E	60	90%	

54. In section B, if 20 girls passed what is the ratio of the number of girls who passed to the number of boys who passed?
- A 1 : 2
B 2 : 1
C 5 : 3
D 3 : 5
55. How many pairs of letters are there in the word 'ACADEMICS' which have as many letters between them (both forward and backward directions) as in English alphabetical series?
- A 3
B 2
C 4
D 5
56. A father is thrice as old as his son now. Six years before he was five times the age of his son. What was the age of father at the time of birth of his son ?
- A 36 years
B 24 years
C 22 years
D 30 years



57. Given that $\frac{1}{\log_{a+1}(91)} + \frac{1}{\log_{b+1}(91)} = 1$. If a, b are integers, find the value of a+b.

- A 18
- B 90
- C 92
- D Cannot be determined



VIDEO SOLUTION

58. A and B can complete a work in $40/3$ days. B and C can complete the same work in $80/3$ days. A and C can complete the work in 16 days. How many days can A, B and C together can complete the work ?
- A $80/7$ days
 - B 12 days
 - C $80/9$ days
 - D 13 days
59. A solution A contains alcohol and water in the ratio 1 : 3 and a solution B contains alcohol and water in ratio 4 : 5. If both the solutions are mixed in equal quantities what is the ratio of alcohol and water in the final mixture?
- A 33 : 67
 - B 25 : 47
 - C 44 : 69
 - D 8 : 9

A) 33:67
C) 44:69
E) 6:7

B) 25:47
D) 8:9

alc water

① A ① : ③

② b 4 : 5

water

$\sqrt{14}$

$5\sqrt{9}$

\sqrt{A}

\sqrt{B}

$4\sqrt{a}$

VIDEO SOLUTION

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60. The ratio of Appu and Babu's weights are in the ratio 5:6. If Appu's weight reduces by 10 kilos, the ratio becomes 2:3. What is Babu's weight?

- A 30
- B 40
- C 50
- D 60

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Answers

SNAP 2023 VA

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

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

SNAP 2023 QA & DI

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

Explanations

SNAP 2023 VA

1. **C**

This sentence is in the past continuous tense, indicating an ongoing action in the past. "Were going" fits the context of the sentence, indicating that the action of going to the beach was in progress when it started raining. Option (C)

2. **D**

'Salt of the earth' refers, to be honest, and good at the same time. Therefore, option D is the right answer.

3. **B**

The prefix word here is "multilingual" [prefix: "multi-"]. Option B is the correct choice.

4. **C**

Whodunit is a story dealing with a crime and its solution. The synonyms of this are enigma, mystery, thriller. Conundrum also means a paradoxical problem. Innuendo is an indirect or subtle reference. The only word which is opposite in meaning here is manifest.

5. **D**

1. "horns" - Noun Explanation: "Horns" is a plural noun referring to the loud sound-producing devices on vehicles.
2. "hurriedly" - Adverb Explanation: "Hurriedly" is an adverb that describes the manner in which an action is performed. It modifies the verb "walked" in the sentence.
3. "ambience" - Noun Explanation: "Ambience" is a noun that refers to the atmosphere or mood of a particular place or environment.



6. **A**

The figure of speech used here is onomatopoeia. Onomatopoeia is a language that names something or an action by imitating the sound associated with it.

7. **C**

The given sentence is in passive voice. Hence, to change it into active voice, we have to interchange the subject and object while keeping the same tense. The tense here is 'past tense'. Hence, the active voice is 'Arjun paid the electricity bill'. Hence, option C is the correct answer.

8. **A**

The statement given is indirect speech and is in past perfect tense. So while converting to direct speech, the tense must be simple past tense. Also, 'that' must be removed in direct speech. Hence, the sentence in direct speech will be 'They said, "We won the competition".' Hence, option A is the right choice.

9. **C**

The word in 3rd part should be "become" instead of "became".

10. **A**

Sequester means to set or keep apart from others. Hence the correct answer is Option A.

 VIDEO SOLUTION



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11. **C**

Visious is incorrect. The correct spelling is 'vicious'.
Hence, option C is the correct option.

12. **C**

Ipso facto is a Latin phrase, directly translated as "by the fact itself", which means that a specific phenomenon is a *direct* consequence, a resultant *effect*, of the action in question, instead of being brought about by a previous action. Hence C is the answer.

13. **B**

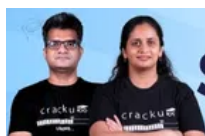
'fewer' is used with countable nouns and 'less' is used with uncountable nouns. So, the correct option in this case is option b).

14. **A**

The first words of all the options make sense for the given blank but only 'gone' fits the second blank. Hence, option A is the correct answer.

15. **B**

The only words that can fit in blank 1 are among and amid. But, form doesn't make any sense in the second blank. Thus, B is the correct answer.



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16. **A**

The steps to curb pollution mainly addresses the vehicular pollution. Therefore, vehicles must be one of the major contributors to pollution level in the city. Since the corporation wants the people to install catalytic converters, we can infer that catalytic converters can reduce the emission levels. Also, the corporation proposes to allow vehicles of only a particular parity on a day. Therefore, the corporation thinks that this will force people to adopt alternative modes of transport to reach their destination. Also, the corporation puts down all the rules with a belief that the citizens will implement it. All options from B, C, D and E are implicit assumptions on which the rule has been made.

Just because the pollution control measures address vehicular pollution, we cannot say that the pollution from other sources are negligible. Vehicular pollution can be the major contributor, but it does not necessarily mean that the other sources will not have significant share. Therefore, option A cannot be said to be an implicit assumption and hence, option A is the right answer.

17. **B**

1- The position of the word "also" implies that watching TV (for long hours) causes many illnesses of which obesity is one. However, no information regarding obesity and its other causes is given. Hence, we cannot say that Assumption 1 is implicit.

2 - The statement clearly mentions long hours. If watching TV for short hours also caused obesity then there would have been no need to specify "long hours". Hence, Assumption 2 is implicit.

18. **C**

There is no relation between glaciers melting and increase in earthquakes and volcanos. So, both the statements (A) and (B) are effects of independent causes.

VIDEO SOLUTION

19. **A**

Statement I is causing Statement II. The growth of economy has improved the standard of living

20. **A**

It has been given in the question that the terrorist has killed a large number of people earlier. Definitely, the terrorist can be termed a potent threat to the society and he must be executed for the greater good. The offence is too heinous to think on humanitarian grounds. Therefore, only argument I is strong and hence, option A is the right answer.



21. **A**

Argument 1 is strong. It talks about the side effects of weed consumption and its correlation with crime rates. The argument provides a strong reason to ban the cultivation of weed.

Argument 2 is not strong. Weed cannot be allowed to be cultivated just because it provides sustenance for a sect of people. Hence, only argument 1 is strong.

22. **D**

Both courses of action can be considered as feasible steps to address the high pollution levels in the city.

Course of Action I focuses on implementing strict emission control regulations and standards for industries and vehicles. By imposing stricter regulations, such as limiting emissions and enforcing rigorous inspections, the city can effectively reduce pollution levels. This course of action aims to hold industries and vehicle owners accountable for their emissions and encourages the adoption of cleaner technologies, ultimately leading to a decrease in pollution.

Course of Action II suggests promoting and incentivizing the use of public transportation and carpooling. By encouraging residents to utilize public transportation systems and carpooling services, the number of vehicles on the road can be significantly reduced. This would subsequently decrease the overall emissions and pollution generated by individual vehicles. Providing incentives, such as discounted fares, dedicated carpool lanes, and improved public transportation infrastructure, can encourage more people to opt for sustainable modes of transportation.

Implementing both of these courses of action in conjunction can lead to a comprehensive approach to address the pollution problem. Course of Action I focuses on reducing emissions at the source, while Course of Action II aims to decrease the overall number of vehicles contributing to pollution. By combining these strategies, the city can make significant strides in mitigating pollution levels and improving the environmental quality for its residents.

23. **D**

Action 1 will be the too extreme step as it may ruin the life of Chotu. Hence action 1 does not follow.

Action 2 encourages special exam for different students which can be unfair for the particular group of students. Hence action 2 does not follow.

Thus, both the actions do not follow.

Hence option D is the correct choice.

24. **A**

Since demolishing unauthorized building will stop builders from constructing new unauthorized buildings. Argument I is strong.

Argument II is not strong, as such people can be relocated to some other places. The important part is that unscrupulous activities of builders will stop.

Hence, option A is the correct choice.

25. **D**

On comparing I and II, we can infer that "is" is the common word where "oi" is the code for it. Similarly, if we compare I and III and I and IV we get the codes for "happy" and "life" as "lm" and "st".

On comparing IV with II and III, we can see that the common words are "match" and "to". The code which is common between them is "le" and "dk". Hence, the code for "match" is "le" and for "to" it is "dk". The remaining code "rc" is for Bottle and "ky" is for "forever".

The codes for the given words are as follows,

Happy - lm

is - oi

match - le

to - dk

life - st

bottle - rc

forever - ky

risky/betting = pn/az

key/be = kr/fc

The code for key/be is kr/fc. fc can be either 'key' or 'be'. Hence, option D is the correct answer.



26. **D**

In the code language, the first letter of the original word is replaced with its next letter in the English alphabet. The second letter is replaced with a letter that is two ahead of the original letter, in the English alphabet and so on. So, the code for 'BANNER' is 'CCQRJX'. Option d) is the correct answer.

VIDEO SOLUTION

27. **B**

A is the son of the father of B. Hence A and B are siblings. D is B's wife. E is B's daughter. Hence, K and E are cousins.

VIDEO SOLUTION

28. **B**

The man's mother's only son would be the man himself and the man's daughter's husband - Rakesh would be his son-in-law. Thus, the man is the father-in-law of Rakesh,

VIDEO SOLUTION

29. **C**

$$24 + 2.5 = 26.5$$

$$26.5 - 5 = 21.5$$

$$21.5 + 7.5 = 29$$

$$29 - 10 = 19$$

$$19 + 12.5 = 31.5$$

Hence, option C is the right answer.

30. **C**

$$14 = 13 \times 1 + 1$$

$$26 = 14 \times 2 - 2$$

$$81 = 26 \times 3 + 3$$

$$320 = 81 \times 4 - 4$$

$$320 \times 5 + 5 = 1605$$

27 is the incorrect term in the given series and hence, option C is the right answer.



31. **A**

The opposite letter of B is Y.

$$Y-1 = X$$

The opposite letter of X is C

$$C+1 = D$$

The opposite letter of D is W

Hence, BYXCDW.

$$B+1 = C.$$

The opposite letter of C is X.

$$X-1 = W$$

The opposite letter of W is D.

$$D+1 = E$$

The opposite letter of E is V.

Similarly, missing term in the series will be

$$D+1 = E$$

The opposite letter of E is V

$$V-1 = U$$

The opposite letter of U is F

$$F+1 = G$$

The opposite letter of G is T

Hence, EVUFGT

32. **B**

$$O(15) - 10 = E(5)$$

$$E(5) + 2 = G(7)$$

$$R(18) - 10 = H(8)$$

$$H(8) + 2 = J(10)$$

Using the same logic,

$$Z(26) - 10 = P(16)$$

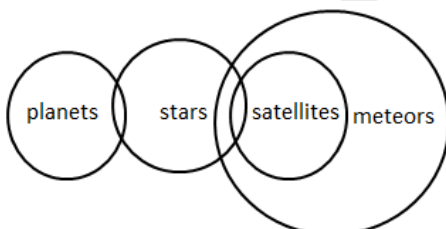
$$P(16) + 2 = R(18)$$

Hence, option B is the right answer.

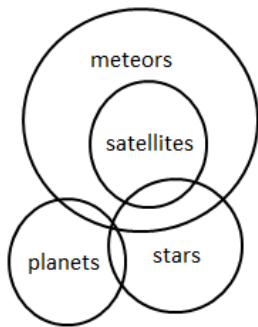
33. **C**

In each of the options the third letter is the letter which lies exactly in the middle of first and second letters in english alphabets. This relationship is not being followed in option E. Hence E is the odd one out.

34. **B**



From the above diagram, we can see that conclusion I does not follow.



From the above venn diagram, we can see that conclusion II is possible.

Hence, option B is the correct answer.

35. D

Since each day repeats after 7 days, which implies we need to check the number of odd days.

Rem $(243/7) = 5$.

Therefore, After 243 days, it will be (Saturday +5) = Thursday.

The correct option is D



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36. B

Assume P tells the truth, which implies Q and R are the liars.

Assume Q tells the truth, which implies P is a liar and R is the truth-teller. (This is not possible since it is given that only one person tells the truth.)

Assume R tells the truth, which implies P is a liar and Q is telling the truth. (This is not possible since it is given that only one person tells the truth.)

Hence, Q and R are the liars.

The correct option is B.

37. C

At 8:00 PM, the hour hand is at 240 degrees from vertical (12 o'clock).

In 40 minutes, the hour hand will move $40 \times (0.5) = 20$ degrees (since the hour hand moves at 0.5 degrees per minute). The hour hand made an angle $(240+20) = 260$ degrees from the vertical.

In 40 minutes, the minute hand will move $40 \times (6) = 240$ degrees from the vertical. (since the minute hand moves at 6 degrees per minute)

Hence, the angle between the hand is $(260-240) = 20$ degrees.

The correct option is C.

38. D

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 3 p.m. the angle between the hands was 90 degrees

Hence there can be two possible cases, the minute hand can form a angle of 35 degrees both before and after the it crosses the hour hand.

Let x be the number of minutes past 3.

case 1

$x = 10$

$$5.5x - 90 = 35$$

Hence the angle between hour hand and minute hand will be 35 degrees at 10 and 22 $\frac{8}{11}$ minutes past 3
39. **B**

Now it is given that there are 4 people between R and T with R being to the left of T. Hence the possible combinations are (1, 6), (2, 7) or (3, 8).

If R is at first position and T is 6th. Now U will have to be at 2nd position. This would mean that V is 4th. S is third to the left of Q. The only possibility for this would be that S is 5th and Q is 8th. P must be 3rd and W must be 7th. So our seating arrangement would be the one shown below.



Let's have a look at the third possibility

R is 3rd and T is 8th. Here U will be 4th and V will be 6th. The only possibility for S to be third to the left of Q would be Q at 5 and S at 2. But in this case there will be 5 people between P and W which is in contradiction to the given information. Hence, this is also not possible. So, only first arrangement is possible. Hence our final arrangement would be



And this process is repeated until words and number are arranged alternatively, such that words are in dictionary order from the left end and numbers are in ascending order

The following is the step-wise process for the given input

Input: 68 fly 24 38 pig 91 star 56 eagle air

Step 1: air 68 fly 24 38 pig star 56 eagle 91

Step 2: air 24 68 fly 38 pig 56 eagle star 91

Step 3: air 24 eagle fly 38 pig 56 68 star 91

Step 4: air 24 eagle 38 fly 56 pig 68 star 91

Step 4 is the last step.



Let the cost price be 100, so he sold the t-shirt for 120

But 120 was after 25% discount

So marked price = $120 / .75 = 160$

So he marked the t-shirt 60% above the cost price.

42. C

Speed of local train = $36 \times 5/18$ m/s = 10 m/s

So distance covered by it in 30 mins = $10 \times 30 \times 60 = 18000$ m

Speed of Chennai express = $72 \times 5/18$ m/s = 20 m/s

Since both travel in same direction, relative speed = $20 - 10 = 10$ m/s

So, time required to overtake = distance / relative speed = $18000 / 10 = 1800$ sec

So C is the right choice.

43. B

Let the speed of the boat be $3x$ and the speed of the stream be x .

Then it is given that

$$20/(3x-x) = 4$$

$$\Rightarrow 2x = 5$$

$$\Rightarrow x = 2.5$$

\Rightarrow Speed of the boat is 7.5 km/hr and speed of the stream is 2.5 km/hr

Now while going downstream, the effective speed would be $7.5 + 2.5 = 10$ km/hr

Hence the required time = $20/10 = 2$ hours.

44. C

We know that a, b, c and d are distinct even natural numbers less than 10. Therefore, they must be 2, 4, 6 and 8.

Product of the 4 numbers = $2 \times 4 \times 6 \times 8 = 2 \times 2 \times 2 \times 2 \times 3 \times 2 \times 2 \times 2 = 2^7 \times 3$

Therefore, $2^7 = 128$ is the highest power of 2 that will definitely divide the product. Hence, option C is the right answer.

45. A

$$k^4 + \frac{1}{k^4} + 2 = 49 \Rightarrow (k^2 + \frac{1}{k^2})^2 = 7^2 \Rightarrow k^2 + \frac{1}{k^2} = 7.$$

$$\text{Similarly, } k^2 + \frac{1}{k^2} + 2 = 9 \Rightarrow k + \frac{1}{k} = 3.$$

$$(k + 1/k)^3 = k^3 + 1/k^3 + 3(k + 1/k) \Rightarrow k^3 + 1/k^3 = 27 - 3 \times 3 = 18.$$



46. D

Here $n(S) = 100$ (As mentioned in the problem)

Favorable cases to get the square cards = $\{1, 4, 9, 16, 25, 36, 49, 64, 81, 100\}$

$n(E) = 10$

Probability = $n(E)/n(S) = 10/100 = 1/10$

47. D

Probability of 1st ball being Non-red $\Rightarrow \frac{7}{12}$

Probability of 2nd ball being Non-red $\Rightarrow \frac{6}{11}$

Since, both the balls being non-red $\Rightarrow \frac{7}{12} \times \frac{6}{11} \Rightarrow \frac{7}{22}$

Option D is correct

48. B

Number of two-digit numbers divisible by 5 = 10, 15, 20, 95

Number of two-digit numbers divisible by 7 = 14, 21, 28, 98

Number of two-digit numbers divisible by 35 = 35, 70

$$\text{Using } S_n = \frac{n}{2} (2a + (n-1)d)$$

$$\text{Sum of the numbers divisible by 5} = \frac{18}{2} (10 + 95) = 9 \times 105 = 945$$

$$\text{Sum of the numbers divisible by 7} = \frac{13}{2} (14 + 98) = 13 \times 56 = 728$$

We need to subtract the numbers divisible by both 5 and 7 = $35 + 70 = 105$.

So total = $945 + 728 - 105 = 1568$

 VIDEO SOLUTION

49. **B**

Let the number of people who read exactly one newspaper be 'a', the number of people who read exactly two newspapers be 'b' and the number of people who read exactly three newspapers be 'c'.

So, $a + b + c = 100\%$

$a + 2b + 3c \geq 70\% + 75\% + 80\% = 225\%$

$\Rightarrow b + 2c \geq 125$

To find the minimum percentage of people who read all three newspapers, we have to minimize 'c'. So, we have to maximize 'b'.

Let $a = 0 \Rightarrow b + c = 100$ and $b + 2c \geq 125$

$\Rightarrow c \geq 25$

So, the minimum value of 'c' is 25. In this case, $b = 75$ and $a = 0$

So, at least 25% of the people in the neighbourhood read all the three newspapers.

50. **B**

Volume of one sphere = $\frac{4}{3}\pi R^3 = 36\pi$

Volume of five spheres = 180π

Therefore, volume of cylinder = 180π

Radius of cylinder = 3 cm

$\pi R^2 H = 180\pi$

$H = 20$ cm

Hence, option B is the correct answer.



51. **C**

Centroid = $\left(\frac{x_1 + x_2 + x_3}{3}, \frac{y_1 + y_2 + y_3}{3} \right)$

$(3, 2) = \left(\frac{x+4-1}{3}, \frac{1+6+y}{3} \right)$

$\frac{x+3}{3} = 3$ and $\frac{7+y}{3} = 2$

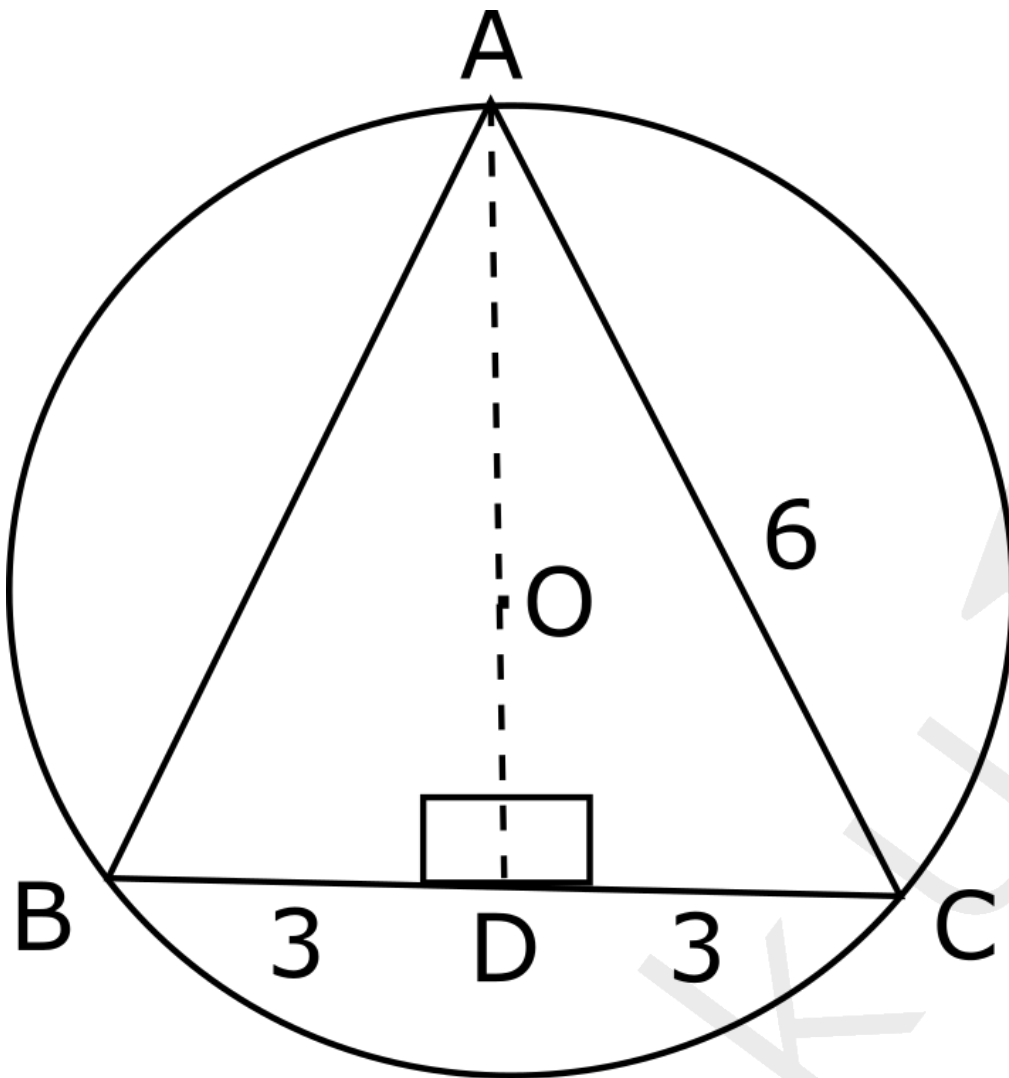
$x+3 = 9$ and $7+y = 6$

$x = 6$ and $y = -1$

$x+y = 6-1 = 5$

So the answer is option C.

52. **D**



We know that in an equilateral triangle, centroid, orthocentre, circumcentre, and incentre are all the same point.

Let's assume O is this point for triangle ABC.

So, AD is perpendicular to BC and bisects it as well. Also, O divides AD in the ratio 2:1.

$$\Rightarrow AD^2 = AC^2 - DC^2 = 36 - 9 = 27.$$

$$\text{So, } AD = 3\sqrt{3}$$

Since, O divides AD in the ratio 2:1, AO will be $2\sqrt{3}$ which is the radius of the circle.

Thus, D is the correct answer.

53. **B**

The given table is:

	W	X	Y	Z	Total
Monday	120	94	136	46	396
Tuesday	98	87	144	84	413
Wednesday	110	123	120	88	441
Thursday	135	140	150	94	519
Friday	175	160	186	125	646
Total	638	604	736	437	2415

The total number of viewers on Monday = 396

The total number of viewers on Friday = 646

Difference = 250

The number of viewers in Friday is $250/396 * 100 = 63.13\%$ greater than Monday, which is approximately 63%.

54. **C**

Given ,

There are 80 students.

40% of them passed, hence 32 students passed.

20 of the students who passed are girls so the rest 12 are boys.

The ratio = $20 : 12 = 5 : 3$

55. **A**

The required pairs of letters are:

ACAD --- ABCD

ACADE --- ABCDE

DE

Hence, There are 3 pairs of letters.



56. **B**

Let F be the age of father and S be the age of he son.

Given, $F = 3S \rightarrow \text{eq (1)}$

and $(F - 6) = 5(S - 6)$

$F - 6 = 5S - 30$

Substituting (1) in the equation

$3S - 6 = 5S - 30$

$\Rightarrow S = 12$

thus, $F = 3S = 36$

the age of the father at the time of birth of his son = $36 - 12 = 24$ years

57. **A**

$\log_{91}(a+1) + \frac{1}{\log_{b+1}(91)} = 1$ can be written as

$\log_{91}(a+1) + \log_{91}(b+1) = 1$

$\Rightarrow (a+1)(b+1) = 91$

$\Rightarrow (a,b)$ can be (90,0), (12,6), (6,12) or (0,90) (Since $a+1, b+1 > 0$).

\Rightarrow But a and b cannot be 0 as the base of the logarithm cannot be 1.

$\Rightarrow a+b = 18$

VIDEO SOLUTION

58. **A**

Given $(1/a) + (1/b) = 3/40$

$(1/b) + (1/c) = 3/80$

$(1/c) + (1/a) = 1/16$

$(1/a) - (1/c) = 3/80$

Adding both the above equations we get

$(2/a) = 1/10$

$a = 20$ days

Substituting in above equation we get $b = 40$ days

$c = 80$ days

Three combinedly can do the total work in x days

$(1/20) + (1/40) + (1/80) = 1/x$

$x = 80/7$ days

59. **B**

Let amount of alcohol in A = x

Thus, total volume of solution A = $x + 3x = 4x$

Amount of alcohol in B = $4k$

Thus, total volume of solution B = $4k + 5k = 9k$

Since, volume of both solutions is equal $4x = 9k$ (1)

Ratio of alcohol in the final solution = $(x + 4k)/(4x + 9k)$

On substituting (1) we get ratio of alcohol in the final solution = 25 : 72

Thus, ratio of alcohol and water in the final solution = 25 : 47

 VIDEO SOLUTION

60. **D**

Let the weights be $5x$ and $6x$. $5x - 10 : 6x = 2 : 3 \Rightarrow 12x = 15x - 30$

So, $x = 10$. Babu's weight = $6x = 60$ kgs.



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