

# **SNAP 2021 Question Paper**

**Symbiosis National Aptitude Test or SNAP Test**

# SYMBIOSIS NATIONAL APTITUDE TEST (SNAP)

## SOLVED PAPER - 2021

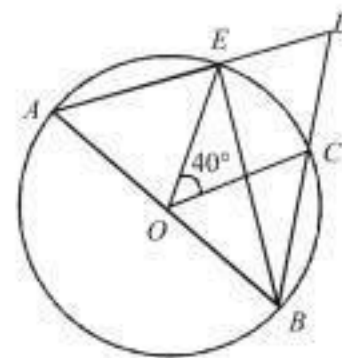
Memory Based

### GENERAL ENGLISH: READING COMPREHENSION, VERBAL REASONING, VERBAL ABILITY

- What is the meaning of the idiom "Don't throw the baby out with the bathwater"?  
(a) To remove something good while removing something bad.  
(b) To be sent away  
(c) To be Angry  
(d) To get Scared extremely
- What is the synonym of Copious?  
(a) Sparse (b) Plentiful  
(c) Sporadic (d) Skimpy
- I shall meet you tomorrow, and I will meet you tomorrow? is any of these sentences American English?  
(a) Will-British English, Shall-American English.  
(b) Meet you- Both American and British English.  
(c) Will - American English, shall - British English.  
(d) None
- Jack fell down and broke his crown and Jill came tumbling after. What is the conjunction here?  
(a) Came (b) and  
(c) Fell down (d) after
- What is the correct spelling?  
(a) Nuclei (b) Nucia  
(c) Nuclea (d) Nucliai
- What is the synonym of Horde?  
(a) Small group (b) Throng  
(c) Streak (d) Camarilla
- What is the meaning of "cut some slack"?  
(a) Tell something briefly  
(b) Don't be so critical  
(c) Avoid saying what you mean, usually because it is uncomfortable  
(d) Doing something poorly in order to save time or money
- Today student should be reconciled \_\_\_\_\_ the way things are changing.  
(a) for (b) at  
(c) with (d) to
- Identify the figure of speech in the following sentence. the landlady said "I've told you to a thousand times to put a leash on this barbaric dog of yours."  
(a) Hyperbole (b) Simili  
(c) Personification (d) Metaphor
- A \_\_\_\_\_ of Japanese artists stepped off the coach amidst warm welcome.  
(a) bank (b) gang  
(c) troop (d) troupe
- Which one of the following is compound word?  
(a) waistcoat (b) notebook  
(c) fireman (d) All of the above
- Identify the figure of speech in the following sentence. With a sweet sorrow in her heart, he bid them good-bye.  
(a) Synecdoche (b) hyperbole  
(c) oxymoron (d) Metaphor
- it took the child a long time to recover \_\_\_\_\_ the shock  
(a) over (b) from  
(c) under (d) above
- She was relieved to hear from the doctor that the tumor was not malignant; it was \_\_\_\_\_.  
(a) benign (b) sizeable  
(c) exposed (d) discovered
- Choose the correctly spelt word?  
(a) Satellite (b) Satelite  
(c) Sattellite (d) Sattellite

### QUANTITATIVE, DATA INTERPRETATION AND DATA SUFFICIENCY

16.  $AB$  is a diameter and  $O$  is center. Find  $\angle EDC = ?$



- (a)  $80^\circ$  (b)  $70^\circ$   
(c)  $50^\circ$  (d)  $90^\circ$
17. 2 alloys weighing 30 kg and 60 kg contain copper in different proportions. A piece of equal size is broken off from both alloys and first part of first alloy is mixed with second part of second alloy and same is true for the other two parts. Now both the newly formed alloys have same purity of Copper. Find the size of the alloy broken off  
(a) 20 Kg (b) 25 Kg  
(c) 10 Kg (d) 15 Kg

18. Class  $A$ ,  $B$  and  $C$  have average scores of 83, 76 and 85 respectively. Average of Class  $A$  and  $B$  is 79. Average of Class  $B$  and  $C$  is 81. Find combined average of all classes  $A$ ,  $B$  and  $C$

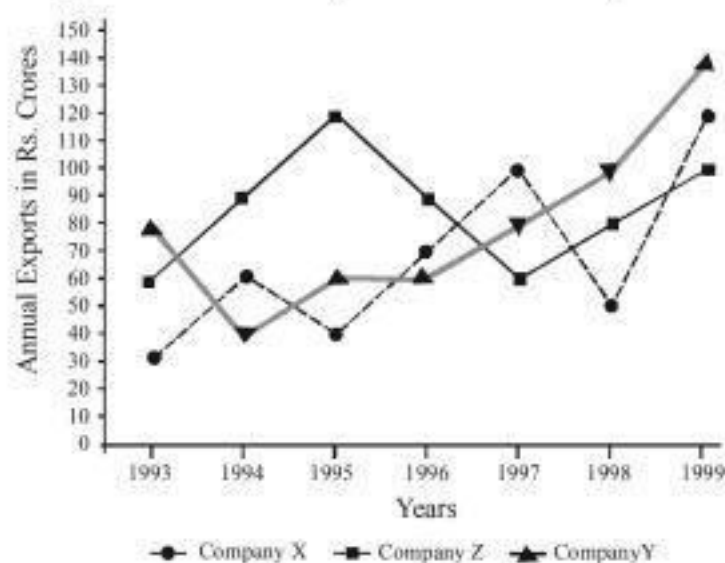
(a) 78.6  
(b) 80.2  
(c) 81.5  
(d) 82

19.  $\log_{10} 3 + \log_{10} (4x+1) = \log_{10} (x+1)$ . Find  $x$

(a)  $\frac{7}{2}$  (b) 4  
(c)  $\frac{5}{3}$  (d) None of these

20. Study the following line graph and answer the question.

Exports from Three Companies Over the Years (in Rs. crore)



Average annual exports during the given period for Company  $Y$  is approximately what percent of the average annual exports for Company  $Z$ ?

(a) 87.12% (b) 89.64%  
(c) 91.21% (d) 93.33%

21.  $(10^{99} - 1) + (10^{17} + x)$  is entirely divisible by 9. Find  $x$

(a) 1 (b) 8  
(c) 11 (d) 6

22. 50% of journey at 25 kmph, 40% of the journey at 20 kmph and rest at 10 kmph. Find average speed

(a) 22 Km/hr  
(b) 21.5 Km/hr  
(c) 20 Km/hr  
(d) 24 Km/hr

23. How many numbers bigger than 2000 and smaller than 7000 can be made using 0, 1, 2, 4, 5, 6, 7, 9. Digits cannot be repeated

(a) 840 (b) 720  
(c) 1080 (d)  $7! \times 6! \times 5!$

24. A leak in the tank can empty it in 12 min and another leak can empty it in 18 min. In what time will they together empty the tank?

(a) 8 min (b) 7.2 min  
(c) 8.6 min (d) 6.9 min

25.  $(2p-1)x^2 + (2p+1)x + C = 0$ ;

$$(q+1)x^2 + (4q+1)x + 3C = 0.$$

If the above equation have same roots, find  $p+q$

(a) 9 (b) 5 (c) 7 (d) 3

26.  $A$  and  $B$  speak truth 70% and 80% of the time respectively. What is the probability they will contradict each other?

(a) 0.42 (b) 0.45 (c) 0.38 (d) 0.36

27.  $(6x-3)^9 = a_1x^9 + a_2x^8 + a_3x^7 + a_4x^6 + \dots + a_0$ . Find the value of  $a_0$ .

(a) 6561 (b) -19683  
(c) -6561 (d) 19683

28. A seller uses faulty scales that he cheats by 300 gm both at the time of buying and selling and he buys and sells only in packet sizes of 5 kg. If he claims to sell on cost, what is his actual profit percentage.

(a) 12.77% (b)  $13\frac{1}{3}\%$   
(c) 14.25% (d) 12.67%

29.  $A$ ,  $B$  and  $C$  are relatively coprime.  $A * B = 551$ ,  $B * C = 1073$ . Find  $A + B + C$ ?

(a) 87 (b) 79 (c) 91 (d) 85

30.  $x$  people can do a job in 5 days. Starting from second day, 3 people were fired every alternate day. Starting from 3rd day, 2 people were hired every alternate day and the work was done in 7 days. Find  $x$ ?

(a) 7 (b) 9 (c) 8 (d) 6

31. Triangle  $A$  and  $B$  are similar and sides of  $B$  are three times that of  $A$ . By what percent is  $B$ 's area greater than that of  $A$ ?

(a) 300% (b) 500%  
(c) 800% (d) 450%

32. Raju has a hollow cylindrical toy which has a surface area of 4620  $\text{cm}^2$  and the area of the base ring is 115.5  $\text{cm}^2$  height is 7 cm. Find the thickness of the toy?

(a)  $\frac{5}{17}$  (b)  $\frac{6}{13}$

(c)  $\frac{7}{19}$  (d)  $\frac{8}{15}$

33. A ball bounces back to  $\frac{4}{5}$ th of the height it was dropped from each time. If it is dropped from a height of 300 m, how far will it travel before coming to rest?

(a) 2100m (b) 1900m  
(c) 2400m (d) 2700m

34. An isosceles triangle has sum of 2 sides as 12. If all sides are integral, how many such triangles are possible?

(a) 14 (b) 16  
(c) 18 (d) None of these

35. 6% of students attempting the exam were from Gujarat and from the state of Assam, same number of people appeared in the exam. 7% of the people cleared the exam which was 80 more than those from Gujarat. How many people from Assam and Gujarat appeared in the paper?
- (a) 960 (b) 846  
(c) 780 (d) None of these

### ANALYTICAL AND LOGICAL REASONING

36. On 8th December, 2007 Saturday falls. What day of the week was it on 8th December, 2006?
- (a) Sunday (b) Thursday  
(c) Tuesday (d) Friday
37. Look at this series : 7, 10, 8, 11, 9, 12 .... What number should come next?
- (a) 07 (b) 10 (c) 12 (d) 13
38. Which word does NOT belong with the others?
- (a) Parsley (b) Basil  
(c) Dill (d) Mayonnaise
39. Which word does NOT belong with the others?
- (a) Inch (b) Ounce  
(c) Centimeter (d) Yard

**DIRECTIONS (Qs. 40-41):** In these series, you will be looking at both the letter pattern and the number pattern. Fill in the blank of the series.

40. QAR, RAS, SAT, TAU, \_\_\_\_\_
- (a) UAV (b) UAT  
(c) TAS (d) TAT
41. ZA5, Y4B, XC6, W3D, \_\_\_\_\_
- (a) E7V (b) V2E (c) VE5 (d) VE7
42. On what dates of April, 2001 did Wednesday fall?
- (a) 1st, 8th, 15th, 22nd, 29th  
(b) 2nd, 9th, 16th, 23rd, 30th  
(c) 3rd, 10th, 17th, 24th  
(d) 4th, 11th, 18th, 25th
43. Find "7" in 3, 31, 131, 351, 739, ?
- (a) 1342 (b) 1243  
(c) 1346 (d) None of these
44. Three series were given and the wrong number has to be selected : 9, 27, 81; 16, 64, 256; 5, 125, 625.
- (a) 81 (b) 64  
(c) 5 (d) None of these
45. Find the degree between 10 am and 4 pm.
- (a)  $180^\circ$  (b)  $168^\circ$   
(c)  $157^\circ$  (d) None of these
46. Today is Saturday, then the day after 69th day will be
- (a) Saturday (b) Friday  
(c) Thursday (d) Sunday
47. Join these parts to make a meaningful sentence :  
1. I, 2. Immediately, 3. Salary, 4. My, 5. Want
- (a) 43152 (b) 15432  
(c) 25143 (d) 42351
48. Find the correct alternative to fill in the blank space :  
PHONE : RJQPG :: QUOTE : \_\_\_\_\_

- (a) ERPVP (b) RVJG  
(c) RVPSF (d) SWQVG
49. If DOOR = 25, LOWER = 37, TOWER = 18, then OVER = ?
- (a) 81 (b) 45  
(c) 60 (d) 06

**DIRECTIONS (Qs. 50-51):** In each question below is given a statement followed by two courses of action numbered I and II. You have to assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the suggested courses of action logically follow(s) for pursuing.

Give answer

- (a) If only I follows  
(b) If only II follows  
(c) If neither I nor II follows  
(d) If both I and II follow.
50. **Statement:** Since its launching in 1981, Vayudoot has so far accumulated losses amounting to Rs 145 crore.
- Courses of Action:**
- I. Vayudoot should be directed to reduce wasteful expenditure and to increase passenger fare.  
II. An amount of about Rs 280 crore should be provided to Vayudoot to make the airliner economically viable.
51. **Statement:** The sale of a particular product has gone down considerably causing great concern to the company.
- Courses of Action:**
- I. The company should make a proper study of rival products in the market.  
II. The price of the product should be reduced and quality improved.

**DIRECTIONS only for the question 52 to 53:** In each of the following questions, 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. Read both the statements in each question and mark your answer as:

- (a) If statement I is the cause and statement II is its effect;  
(b) If Statement II is the cause and statement I is its effect;  
(c) If both the statements I and II are independent causes;  
(d) If both the statements I and II are effects of independent causes;
52. I. The employees of the biggest bank in the country have given an indefinite strike call starting from third of the next month.  
II. The employees of the Central Government have withdrawn their week long demonstrations.
53. I. The life today is too fast, demanding and full of variety in all aspects which at times leads to stressful situations.  
II. Number of suicide cases among teenagers is on increase.



**DIRECTION (Qs. 54-55):** Read the questions carefully and choose the correct option.

54. **Statement:** Food poisoning due to the consumption of liquor is very common in rural areas  
**Assumption I:** There are more illegal and unauthorised shops selling liquor in villages and rural areas  
**Assumption II:** The ratio of people drinking liquor in villages is much more than that in towns  
 (a) Both Assumption I and II follow  
 (b) Neither Assumption I nor Assumption II follows  
 (c) Only Assumption I follows  
 (d) Assumption II follows but Assumption I does not follow
55. **Statement :** The school has decided to cancel the summer camp this year  
**Assumption I:** No entries have been received by the Institution for students willing to join the summer camp  
**Assumption II:** It is being cancelled because the weather is too hot  
 (a) Only Assumption I follows  
 (b) Only Assumption II follows  
 (c) Neither Assumption I nor Assumption II follows  
 (d) Either Assumption I or Assumption II follows
56. A's mother is sister of B and daughter of C. D is daughter of B and sister of E. How is C related to E?  
 (a) Father  
 (b) Grandfather  
 (c) Grandmother  
 (d) Either Grandfather or Grandmother
57. Read the question carefully and mark the correct option.  
 Statements: All Samosas are Jalebi. All Jalebis are Tikki. All Tikkis are Barfi  
**Conclusion:**  
 I. All Jalebis are Barfi  
 II. All Tikkis are Samosas  
 III. All Samosas are Barfi  
 IV. All Barfi are Jalebi  
 (a) Only I and II follow  
 (b) Only I and III follow  
 (c) Only II and III follow  
 (d) All follow
58. In a certain code language,  
 '134' means 'good and tasty';  
 '478' means 'see good pictures' and  
 '729' means 'pictures are faint'.

Which of the following digits stands for 'see'?

- (a) 9 (b) 2  
 (c) 1 (d) 8

**DIRECTION (Q.59):** A word & number arrangement machine when given an input line of words & numbers rearranges them following a particular rule in each step. The following is an illustration of an input & its rearrangement.

**Input:** live 26 life 19 king 38 size 42 aim 67 my 71

**Step 1** 67 live 26 life 19 king 38 size 42 my 71 aim

**Step 2** 38 67 live 26 life 19 size 42 my 71 aim king

**Step 3** 26 38 67 live 19 size 42 my 71 aim king life

**Step 4** 19 26 38 67 size 42 my 71 aim king life live

**Step 5** 42 19 26 38 67 size 71 aim king life live my

**Step 6** 71 42 19 26 38 67 aim king life live my size

**Step 6** is the last step of the above input as per rules followed in the above steps.

Following is the input which needs to be rearranged as per the above logic.

**Input:** dream 25 dare 64 enjoy 18 smile 23 spread 47 joy 70

59. In which of the following steps "spread 70 dare" is seen in the same sequence for the first time?  
 (a) Step 1 (b) Step 2  
 (c) Step 3 (d) Step 4

**DIRECTION (Q. 60):** Study the following information carefully and answer the questions given below:

Eight persons – Doly, Lali, Mona, Joya, Pinu, Usha, Chaya and Tara, are sitting in a straight line but not necessarily in the same order such that some of these persons are facing south while some are facing north.

Doly faces north. Mona sits third to the left of Usha. Pinu sits third to the right of Mona. Joya sits to the immediate right of Pinu. Joya does not sit at any of the extreme ends of the line. Only one person sits between Chaya and Lali. Pinu sits second to the left of Chaya. Tara sits second to the right of Joya. Both the immediate neighbours of Mona face the opposite direction. Tara faces the same direction as Joya and Doly faces the same direction as Chaya. Usha sits at one of the extreme ends of the line.

60. How many person(s) sit between Joya and Doly?  
 (a) Three (b) Two  
 (c) One (d) None

# ANSWERS WITH EXPLANATIONS

1. (a) "to remove something good while removing something bad" is the closest in meaning to the idiom **Don't throw the baby out with the bath water**.
2. (b) "plentiful" is the closest in meaning to the word given in question; **Meaning-** existing in or yielding great quantities; abundant.  
**Sparse-** scanty; in short supply.  
**Sporadic-** occurring at irregular intervals or only in a few places; scattered or isolated  
**Skimpy-** providing or consisting of less than is needed; meagre.  
**Copious-** abundant in supply or quantity
3. (c) the use of "will" in the sentence is **American English**; American English, sometimes called United States English or U.S. English, is the set of varieties of the English language native to the United States. While the use of "shall" in the sentence is **British English**; British English or Anglo-English is the standard dialect of "English as used in Great Britain, as distinct from that used elsewhere." Variations exist in formal, written English in the United Kingdom.
4. (b) "and" is the **conjunction** in the sentence as it connects two independent sentences and a principle clause with a subordinate clause.
5. (a) **NUCLEI- is the correct spelling.**
6. (b) "throng" is the closest in meaning to the word given in question; meaning- a large, densely packed crowd of people or animals.  
**Streak-** a long, thin line or mark of a different substance or colour from its surroundings  
**Camarilla-** a small group of people, especially a group of advisers to a ruler or politician, with a shared purpose.  
**Horde-** a large group of people.
7. (b) "Don't be so critical" is the closest in meaning to the idiom **cut some slack**.
8. (d) "to" it is preposition.
9. (a) **Hyperbole** uses exaggeration for emphasis or effect. A **simile** is a comparison between two unlike things using the words "like" or "as."  
**Personification** gives human qualities to non-living things or ideas.  
A **metaphor** makes a comparison between two unlike things or ideas.
10. (d) **noun: troupe;** refer to a group of dancers, actors, or other entertainers who tour to different venues.
11. (d) **all of the above;** When two words are used together to yield a new meaning, a compound is formed. Compound words can be written in three ways: as open compounds (spelled as two words, e.g., ice cream), closed compounds (joined to form a single word, e.g., doorknob), or hyphenated compounds (two words joined by a hyphen, e.g., long-term).
12. (c) **oxymoron;** An oxymoron is two contradictory terms used together.

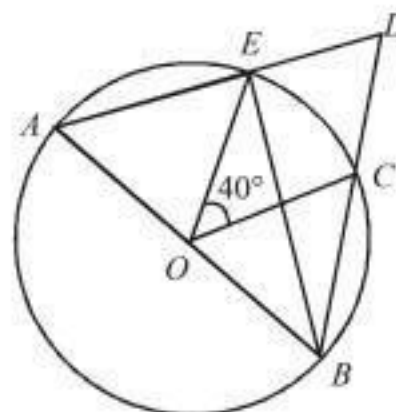
**Synecdoche** occurs when a part is represented by the whole or, conversely, the whole is represented by the part.

An **oxymoron** is two contradictory terms used together.

A **metaphor** makes a comparison between two unlike things or ideas

13. (b) "from" (**preposition**) fits the blank appropriately.
14. (a) "benign" is the appropriate answer; meaning- not harmful in effect.
15. (a) correct spelling- **SATELLITE**

16. (b)



$\angle AEB = 90^\circ$  (Angle made in half circle)

$$\angle EBC = \frac{\angle EOC}{2} = \frac{40}{2} = 20^\circ$$

(Angle made by same chord on center is double the angle made on circumference)

Now, in  $\triangle BOE$ ,

$$\angle BED + \angle EBD + \angle EDB = 180^\circ$$

$$\Rightarrow 90^\circ + 20^\circ + \angle EDC = 180^\circ$$

$$\Rightarrow \angle EDC = 180^\circ - 110^\circ = 70^\circ$$

17. (a) Let size of the alloy broken off is  $x$  Kg. According to question,

$$\frac{x}{30-x} = \frac{60-x}{x}$$

$$\Rightarrow x^2 = 1800 - 30x - 60x + x^2$$

$$\Rightarrow 90x = 1800 \Rightarrow x = \frac{1800}{90} = 20 \text{ Kg.}$$

18. (c) A      B      B      C

$$\begin{array}{cc} 83 & 76 \\ & \swarrow \quad \searrow \\ & 79 \\ & \swarrow \quad \searrow \\ 3 & 4 \end{array} \quad \begin{array}{cc} 76 & 85 \\ & \swarrow \quad \searrow \\ & 81 \\ & \swarrow \quad \searrow \\ 4 & 5 \end{array}$$

Hence required combined average

$$= \frac{3 \times 83 + 4 \times 76 + 5 \times 85}{3+4+5} = \frac{978}{12} = 81.5.$$

19. (a)  $\log_{10} 3 + \log_{10} (4x+1) = \log_{10} (x+1) + \log_{10} 10$

$$\Rightarrow \log_{10} 3 \times (4x+1) = \log_{10} (x+1) \times 10$$

$$\Rightarrow 3(4x+1) = 10(x+1)$$

$$\Rightarrow 12x+3 = 10x+10$$

$$\Rightarrow 2x = 7 \Rightarrow x = \frac{7}{2}$$

20. (d) Average annual exports for company Y

$$= \frac{80+40+60+60+80+100+140}{7} = \frac{560}{7} = 80$$

Average annual exports for company Z

$$= \frac{60+90+120+90+60+80+100}{7} = \frac{600}{7}$$

Hence, required percentage

$$= \frac{80}{\frac{600}{7}} \times 100 = \frac{80 \times 7}{6} = 93.33\%$$

21. (b)  $\frac{(10^{99}-1)}{9} + \frac{(10^{17}+x)}{9}$

$$= \frac{(1)^{99}-1}{9} + \frac{(1)^{17}+x}{9} = \frac{1-1}{9} + \frac{1+x}{9} = \frac{1+x}{9}$$

So, for  $x=8$

$$\Rightarrow \frac{1+8}{9} = \frac{9}{9} \text{ entirely divisible.}$$

Hence,  $x=8$ .

22. (c) Let total distance is 100 Km.

Time taken in 50% journey at 25 Km/hr =  $\frac{50}{25} = 2$  hrs.

Time taken in 40% journey at 20 Km/hr =  $\frac{40}{20} = 2$  hrs.

Time taken in remaining journey at 10 Km/hr =  $\frac{10}{10} = 1$  hr.

Hence, average speed =  $\frac{100}{5} = 20$  Km/hr

23. (a)  $2 \dots \dots \dots = 7 \times 6 \times 5 = 210$

$$4 \dots \dots \dots = 7 \times 6 \times 5 = 210$$

$$5 \dots \dots \dots = 7 \times 6 \times 5 = 210$$

$$6 \dots \dots \dots = 7 \times 6 \times 5 = 210$$

Hence, total numbers =  $210+210+210+210 = 840$ .

24. (b) Capacity of tank = LCM of (12, 18) = 36 units

Efficiency of Ist leak =  $\frac{36}{12} = 3$

Efficiency of IInd leak =  $\frac{36}{18} = 2$

Hence, they together will empty the tank in

$$= \frac{36}{5} = 7.2 \text{ minutes}$$

25. (d) General equation =  $ax^2 - bx + c = 0$

According to question,

$$\frac{1}{(2p-1)} = \frac{3}{(q+1)}$$

$$\Rightarrow (q+1) = 3(2p-1) \quad \dots(i)$$

$$\Rightarrow q+1 = 6p-3$$

$$\Rightarrow 6p = q+4 \quad \dots(ii)$$

And,  $\frac{(2p+1)}{(2p-1)} = \frac{(4q+1)}{(q+1)}$

From Eq. (i),

$$\frac{(2p+1)}{(2p-1)} = \frac{(4q+1)}{3(2p-1)}$$

$$\Rightarrow 4q+1 = 3(2p+1)$$

$$\Rightarrow 4q+1 = 6p+3$$

From Eq. (ii),

$$\Rightarrow 4q+1 = q+4+3 \Rightarrow 3q = 6 \Rightarrow q = 2$$

Put  $q$ 's value in Eq. (ii),

$$6p = 2+4 = 6 \Rightarrow p = 1$$

Hence,  $p+q = 1+2 = 3$ .

26. (c) Probability of A speaks truth =  $70\% = 0.7$

Probability of A does not speak truth =  $30\% = 0.3$

Probability of B speaks truth =  $80\% = 0.8$

Probability of B does not speak truth =  $20\% = 0.2$

Hence, probability that they both will contradict each other =  $0.7 \times 0.2 + 0.8 \times 0.3 = 0.14 + 0.24 = 0.38$ .

27. (b)  $(6x-3)^9 = (6x-3)^3 \times (6x-3)^3 \times (6x-3)^3$

So,  $a_0 = (-3)^3 \times (-3)^3 \times (-3)^3$   
 $= -27 \times -27 \times -27 = -19683$ .

28. (a) Let cost price of 100x.

According to question,

$$\text{Selling price} = 100x \times \frac{5000}{4700} \times \frac{5300}{5000} = 112.77x$$

Hence, profit percentage =  $\frac{12.77x}{100x} \times 100 = 12.77\%$ .

29. (d)  $A * B = 551 = 576 - 25 = (24)^2 - (5)^2$

$$\Rightarrow A * B = (24+5) \times (24-5) = 19 \times 29$$

And,  $B * C = 1073 = 1089 - 16 = (33)^2 - (4)^2$

$$\Rightarrow B * C = (33+4) \times (33-4) = 29 \times 37$$

$\therefore A = 19, B = 29$  and  $C = 37$ .

Hence,  $A + B + C = 19 + 29 + 37 = 85$ .

30. (b) Total work =  $5 \times x = 5x$

According to question,

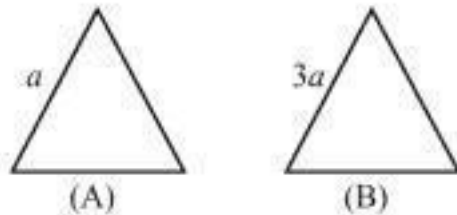
$$x + (x-3) + (x-3+2) + (x-4)$$

$$+ (x-2) + (x-5) + (x-3) = 5x$$

$$\Rightarrow 7x - 18 = 5x \Rightarrow 2x = 18 \Rightarrow x = 9 \text{ people.}$$



31. (c)



$$\frac{\text{Area of } \Delta(A)}{\text{Area of } \Delta(B)} = \frac{(a)^2}{(3a)^2} = \frac{1}{9}$$

$$\text{Hence, required percentage} = \frac{8}{1} \times 100 = 800\%.$$

32. (c)  $2\pi(R^2 - r^2) + 2\pi(R + r)h = 4620$ 

$$\text{And, } \pi(R^2 - r^2) = 115.5 \quad \dots(i)$$

$$\Rightarrow 2 \times 115.5 + 2\pi h(R + r) = 4620$$

$$\Rightarrow 2\pi h(R + r) = 4620 - 231 = 4389$$

$$\Rightarrow 2 \times \frac{22}{7} \times 7 \times (R + r) = 4389$$

$$\Rightarrow (R + r) = \frac{4389}{44} = \frac{399}{4}$$

From Eq. (i),

$$\pi(R + r)(R - r) = 115.5$$

$$\Rightarrow (R - r) = \frac{115.5}{\frac{399}{4} \times \frac{22}{7}} = \frac{115.5 \times 2}{57 \times 11} = \frac{10.5 \times 2}{57}$$

$$\Rightarrow (R - r) = \frac{21}{57} = \frac{7}{19}$$

33. (d) Ball will travel before coming to rest

$$= 300 + 2 \left[ \frac{\frac{4}{5} \times 300}{1 - \frac{4}{5}} \right] = 300 + 2 \left[ \frac{240}{\frac{1}{5}} \right]$$

$$= 300 + 480 \times 5 = 300 + 2400 = 2700 \text{ m.}$$

34. (b) Total number of possible isosceles triangles are 16 and that are:

$$(a, b, c) = (11, 11, 1), (10, 10, 2), (9, 9, 3), (8, 8, 4), (7, 7, 5), (6, 6, 1), (6, 6, 2), (6, 6, 3), (6, 6, 4), (6, 6, 5), (5, 5, 7), (6, 6, 7), (6, 6, 8), (6, 6, 9), (6, 6, 10) \text{ and } (6, 6, 11).$$

35. (a) Let total number of students attempt =  $x$ Then, number of students attempt the exam from Gujarat = Same number from Assam =  $(0.06)x$ .

$$\text{ATQ, } 0.07x - 0.06x = 80$$

$$x = 8000.$$

Hence, people from Assam and Gujarat appeared

$$= 8000 \times \left( \frac{6+6}{100} \right) = 960.$$

36. (d) As year 2007 is not a leap year. Hence number of odd days between 8th December, 2006 and 8th December 2007 = 1 day.

Hence, 8th December 2006 was Friday.

$$37. (b) \begin{array}{ccccccc} 7 & 10 & 8 & 11 & 9 & 12 & 10 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ +1 & +1 & +1 & +1 & +1 & +1 & +1 \end{array}$$

38. (d) Except Mayonnaise, all other are types of herb.

39. (b) Ounce is a unit of weight, while Inch, Centimeter and Yard are units of length.

$$40. (a) \begin{array}{ccccccc} QAR & RAS & SAT & TAU & UAV \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ +1 & +1 & +1 & +1 & +1 \end{array}$$

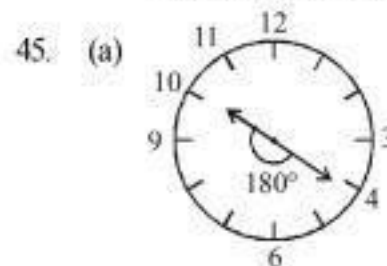
$$41. (d) \begin{array}{ccccccc} ZA5 & Y4B & XC6 & W3D & VE7 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ -1 & -1 & -1 & -1 & -1 \end{array}$$

42. (d) 1st April, 2001 was Sunday. Hence, Wednesday was fallen on 4th, 11th, 18th and 25th April, 2001.

$$43. (d) \begin{array}{ccccccc} 3 & 31 & 131 & 351 & 739 & 1343 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ (1)^3 + 2 & (3)^3 + 4 & (5)^3 + 6 & (7)^3 + 8 & (9)^3 + 10 & (11)^3 + 12 \end{array}$$

$$44. (c) \begin{array}{ccccccc} 9 & 27 & 81 & 16 & 64 & 256 & 25 & 125 & 625 \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ (3)^2 & (3)^3 & (3)^4 & (4)^2 & (4)^3 & (4)^4 & (5)^2 & (5)^3 & (5)^4 \end{array}$$

Hence, wrong number is 5.



45. (a) In the clock, number 4 and 10 are just opposite to each other. Hence, angle between 4 PM and 10 AM = 180°.

46. (b) Today is Saturday. Then on  $(1 + 9 \times 7)$  days i.e. 64 days is also Saturday.

Hence, after 69th days, it will be Friday.

47. (b) The meaningful order is:

I, want, my, salary, immediately  $\Rightarrow (1) (5) (4) (3) (2)$ .

$$48. (d) \begin{array}{ccccc} P & H & O & N & E \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ +2 & +2 & +2 & +2 & +2 \\ R & J & Q & P & G \end{array}$$

Similarly,

$$\begin{array}{ccccc} Q & U & O & T & E \\ \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ +2 & +2 & +2 & +2 & +2 \\ S & W & Q & V & G \end{array}$$

49. (d) Add positions of alphabets and then reverse the result

$$\text{DOOR} = 4 + 15 + 15 + 18 = 52 = \text{reverse } 52 \text{ to give } = 25$$

Similarly,

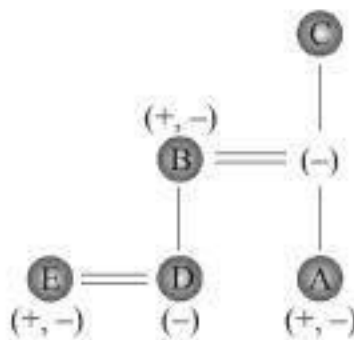
$$\text{OVER} = 15 + 22 + 5 + 18 = 60 = \text{reverse } 60 \text{ to give } = 06$$

50. (a) Clearly, for better economic gain, losses should be reduced and income increased. So, only course I follows.



51. (a) Clearly, a study of rival products in the market will help assess the cause for the lowering down of sales and then a suitable action can be taken. Thus, I follow.
52. (d) The employees of a bank going on strike and the government employees calling off their protest seem to be two independent events that might have been triggered by individual causes.
53. (a) Stress in everyday life is a major cause of frustration among the youth and is bound to lead them to take harsh steps as suicide.
54. (c) Only Assumption I follows  
The statement is talking about food poisoning due to liquor so the number of people consuming liquor in towns or villages is not the main concern here. That is why the only assumption I follow
55. (a) **Only Assumption I follows**  
Because the school was not receiving any student entries for participation in the summer camp, that is why it was cancelled. The second option is not implicit because the camp is being conducted in summers, so the weather is expected to be hot.

56. (d)



Hence, C is either grand father or grand mother of E.

57. (b)



58. (d) In the first and second statements, the common code digit is '4' and the common word is 'good'. So, '4' stands for 'good'.

In the second and third statements, the common code digit is '7' and the common word is 'pictures'.

So, '7' means 'pictures'.

Thus, in the second statements, '8' means 'see'.

59. (d) Input: dream 25 dare 64 enjoy 18 smile 23 spread 47 joy 70  
Step 1 47 dream 25 64 enjoy 18 smile 23 spread joy 70 dare  
Step 2 64 47 25 enjoy 18 smile 23 spread joy 70 dare dream  
Step 3 25 64 47 18 smile 23 spread joy 70 dare dream enjoy  
Step 4 18 25 64 47 smile 23 spread 70 dare dream enjoy joy  
Step 5 23 18 25 64 47 spread 70 dare dream enjoy joy smile  
Step 6 70 23 18 25 64 47 dare dream enjoy joy smile spread

**Change in word:** The words are placed at the extreme right end as they appear in the dictionary i.e. the word that appears first in the dictionary will come first to the extreme left end of the step, then comes the second word as per dictionary order to the extreme right end and so on.

**Change in number:** The numbers are considered as per the product of their digits. The number with the highest product is chosen first and placed at the extreme left end, then the number with the second highest product is taken and placed at extreme left end and so on.

The operation is performed first on words and then on numbers but within the same step.

From the common explanation it is clear that "spread 70 dare" is seen for the first time in the same sequence in step 4.

Step 4 18 25 64 47 smile 23 **spread 70 dare** dream enjoy joy

60. (a)

