

Answer Key to SSC MTS Live Leak Based on Expected Pattern 2017

| | | | | | | | | | |
|------|---|------|---|------|---|------|---|------|---|
| 1. | 1 | 2. | 1 | 3. | 2 | 4. | 3 | 5. | 3 |
| 6. | 1 | 7. | 1 | 8. | 1 | 9. | 1 | 10. | 4 |
| 11. | 1 | 12. | 2 | 13. | 1 | 14. | 3 | 15. | 2 |
| 16. | 1 | 17. | 2 | 18. | 1 | 19. | 1 | 20. | 4 |
| 21. | 2 | 22. | 1 | 23. | 4 | 24. | 4 | 25. | 2 |
| 26. | 3 | 27. | 1 | 28. | 3 | 29. | 1 | 30. | 1 |
| 31. | 1 | 32. | 4 | 33. | 4 | 34. | 3 | 35. | 4 |
| 36. | 3 | 37. | 1 | 38. | 4 | 39. | 1 | 40. | 4 |
| 41. | 4 | 42. | 1 | 43. | 3 | 44. | 4 | 45. | 3 |
| 46. | 1 | 47. | 3 | 48. | 4 | 49. | 1 | 50. | 1 |
| 51. | 2 | 52. | 4 | 53. | 2 | 54. | 2 | 55. | 2 |
| 56. | 4 | 57. | 1 | 58. | 3 | 59. | 2 | 60. | 2 |
| 61. | 3 | 62. | 3 | 63. | 3 | 64. | 1 | 65. | 3 |
| 66. | 3 | 67. | 3 | 68. | 2 | 69. | 1 | 70. | 4 |
| 71. | 2 | 72. | 3 | 73. | 3 | 74. | 1 | 75. | 4 |
| 76. | 4 | 77. | 3 | 78. | 2 | 79. | 4 | 80. | 3 |
| 81. | 4 | 82. | 2 | 83. | 4 | 84. | 1 | 85. | 1 |
| 86. | 3 | 87. | 1 | 88. | 1 | 89. | 4 | 90. | 1 |
| 91. | 4 | 92. | 3 | 93. | 4 | 94. | 1 | 95. | 3 |
| 96. | 1 | 97. | 1 | 98. | 4 | 99. | 1 | 100. | 4 |
| 101. | 1 | 102. | 1 | 103. | 4 | 104. | 1 | 105. | 1 |
| 106. | 2 | 107. | 4 | 108. | 3 | 109. | 2 | 110. | 2 |
| 111. | 1 | 112. | 3 | 113. | 3 | 114. | 4 | 115. | 2 |
| 116. | 2 | 117. | 1 | 118. | 3 | 119. | 4 | 120. | 2 |
| 121. | 3 | 122. | 2 | 123. | 4 | 124. | 1 | 125. | 3 |
| 126. | 4 | 127. | 3 | 128. | 4 | 129. | 3 | 130. | 2 |
| 131. | 2 | 132. | 1 | 133. | 1 | 134. | 4 | 135. | 1 |
| 136. | 2 | 137. | 1 | 138. | 2 | 139. | 2 | 140. | 3 |

| | | | | | | | | | |
|------|---|------|---|------|---|------|---|------|---|
| 141. | 4 | 142. | 3 | 143. | 4 | 144. | 2 | 145. | 1 |
| 146. | 2 | 147. | 2 | 148. | 3 | 149. | 3 | 150. | 1 |

SOLUTIONS:

1. The correct sentences would be, “kindly help me in my work, I request you earnestly.” Or “please help me in my work, I request you earnestly.” Thus the correct option is 1.

This is because the adverbs ‘kindly’ and ‘please’ cannot be used together. We should use either ‘kindly’ or ‘please’. Moreover, as a side note, there is a difference in the use of the two.

When we talk to our seniors or superiors, we use *kindly*; when we talk to our equals or juniors, we use *please*.

2. The error lies in part 1 of the sentence as the adverb ‘enough’ has been placed incorrectly. The adverb should be placed after the adjective here. The sentence should be ‘she is intelligent enough..’.

3. The correct tense of the verb should be “murdered” as the action has already occurred in the past tense by a certain doer (hunter). So the verb should be in the simple past as denoted by the use of ‘was’ in a passive voice. Thus, the error is in part 2.

4. The error lies in part 3 of the sentence as an incorrect preposition has been used here. ‘in’ should be replaced with ‘of’. This is because we are talking about the ‘climate’ of certain region. Thus option 3 is the correct answer.

5. Here, we need a determiner to tell about a place. Thus, ‘there’ must be used instead of ‘their’. ‘their’ is a possessive pronoun and is wrongly used here. Thus, the error lies in part 3.

6. The phrase type of, ‘sort of, kind of’ do not follow an article ‘a’ or ‘an’. Thus the error lies in option 1 and it is the correct answer.

7. The correct sentence would be, “ I am very glad to see you working hard.” ‘Too’ is usually placed at the end of a clause to mean ‘also’ e.g. They all wanted to go to the cinema, so I went too.

Too when used before adjectives and adverbs means to a higher degree or more than is allowed, very, extremely e.g. This dish is just too delicious.

But with the adjectives *beautiful* and *glad* it is better to use *very* instead of *too* to convey a higher degree. Thus the right option is 1.

8. When comparing two nouns either “like” is used or “as...as” is used. But they are not used together. *E.g. He fought like a brave lion.*
E.g. He is as brave as a lion. Also, words like ‘similar’ is used with preposition ‘to’. *E.g. His voice is similar to that of Arijit Singh’s.* Thus, option 1 is the correct answer.

9. Only ‘Camaraderie’ is which means ‘mutual trust and friendship among people’. Hence, the correct answer is 1.

The correct spellings of the remaining words are:

Carouse

Cavort

Circumlocution

10. Only abrogate is which means ‘repeal or do away with’ is correctly spelled. Hence, the correct answer is 4.

The correct spellings of the remaining words are:

Aberration

Abnegation

Abscond

11. The correct statement will be “*If I were a tiger, I would live in the forest*”. We have 3 forms according to which we write sentences using ‘if’ clause.

Conditional 1: ‘if+simple present, will-future’

E.g. If i find her address, I’ll send her an invitation.

Conditional 2: ‘if+simple past, conditional 1(=would+infinitive)’

E.g. If I found her address, I would send her an invitation.

Conditional 3: ‘if+past perfect, conditional 2 (=would+have+past participle)’

E.g. If I had found her address, I would have sent her an invitation.

Hence, the error is in part 1.

12. The two objects of the main verb 'blame' are ‘the female lead’ and ‘I’. The pronoun ‘I’ is not used as the object of a verb. It should be replaced by the pronoun ‘me’. Thus part 2 of the sentence needs correction.

13. The present tense is used for activities that happen at a scheduled time. The part **should read 'The bus that comes at 10 am'**. Hence we need to correct part 1.
14. The teachers asked her to participate in the competition. It follows that the performance of student **must have been good**. Use of 'admired' in passive voice is not suitable and also 'mised' which means 'betrayed' and 'motivated' are unfit in the context. Option 3 is the correct alternative.
15. The act of vacating the house is being talked about. **It's likely that this was** commanded to the people living in the house. Thus, Option 2 is the best alternative.
16. The sentence talks about illustration of concepts by teachers through practical examples. **To 'Quote' means to mention or cite**. Thus, option 1 is the correct answer.
17. The answer needs to refer to a time, dependent on another work. Hence, option 3 and the question phrase are not suitable. Between options 1 and 2, the latter is preferred as it points out to the duration of time with the use of 'by' when the other action will be completed. Also note that option 1 states the point of time which is not necessary here. Hence, 2 is the correct option.
18. Carrion: The decaying flesh of dead animals.

Hygienic: conducive to maintaining health and preventing disease, especially by being clean; sanitary.

Immaculate: free from spot or stain; spotlessly clean

Spruce: *Spruce* is a verb that *means* you pay special attention to your personal appearance, especially your grooming and clothing.

Carrion means a dead body not properly disposed of when it decomposes and rots. It gives out a very foul smell specifically refers to the expression mentioned in the question. Thus, option 1 is the best-fit answer.

19. the correct spellings are as follows:

2. Mentored
3. Targeted
4. Foreign

Thus, the correctly spelt word is 'career'.

20. The correct spellings are as follows:

1. Accommodation
2. Camaraderie
3. Revelry

Thus, the correctly spelt word is 'chivalry'.

21. Inebriated means 'drunk or intoxicated.' Hence, intoxicated is the correct answer. The other words are not synonyms of 'inebriated.'

22. The word 'affair' means 'a matter that is a particular person's concern or responsibility'.

E.g. *What she does after work is her personal affair.*

Thus, the correct synonym for 'affair' would be 'concern'.

E.g. *What I eat for lunch is none of your concern.*

'Care' means to feel concern or interest.

E.g. *I care for her deeply.*

'Life' means 'existence of human or animal matter'.

E.g. *The patient's life was in danger.*

'Need' means 'essential requirement'.

E.g. *Humans need oxygen to survive.*

Thus clearly option 1 is the correct answer.

23. The word 'crush' means 'to deform something and make it unrecognisable from its previous state by applying pressure'. Thus, the correct synonym for this would be 'smash'.

'Break' means to separate a single entity into pieces.

E.g. *Shilpa asked Rohan not to break the toys.*

'Crack' refers to 'a line on the surface of something along which it has split without breaking apart'

E.g. *A crack appeared on the ground due to the earthquake.*

'Fragment' refers to 'a small part broken off or separated from something.'

E.g. *She could recollect her dream only in fragments.*

Since 'crush' doesn't necessarily mean to break anything, we settle for option 4, 'smash'. 'To smash' means to 'hit and apply pressure till the object is deformed and flattened.'

E.g. *The restaurant cook used a device to smash together the ingredients for the Pav Bhaji.*

24. 'To retain' is to keep in one's memory.' To forget' is to 'fail to remember'. Hence, option 4 is the correct antonym here. Option 1 is synonymous to 'retain'. 'Memorize' means 'to learn by heart'.

25. 'Evolve' means to 'develop', 'progress' or 'advance'

Withdraw means to 'remove', 'extract' or 'pull out'

Withhold means to 'hold back', 'keep back', 'curb' or 'restrain'

Suspend means 'temporarily prevent from continuing'.

Stop means to 'cease', 'end', 'finish' or 'conclude'

Hence, the word most opposite in meaning to 'evolve' among the options is 'withhold'.

26. 'Polyglots' are one who can speak multiple languages. 'Bibliography' means a list of books typically printed as an appendix of a particular author or publisher. 'Monoglot' is one who can speak only one language. 'Bilingual' is one who can use two languages fluently or something that makes the use of two languages. Thus option 3 is the correct answer.

27. 'Foreigners' means a person in or coming from a country other than one's own. 'Immigrant' means a person who comes to live permanently in a foreign country. 'Tourist' means a person who is travelling or visiting a place for pleasure. 'Aborigines' means a person or plant or animal that has been in a country or region from earliest times. So option 1 is the answer.

28. the correct spellings are as follows:

1. Marxism
2. Orientalism
4. Globalism

Thus, the correctly spelt word is 'cosmopolitanism'.

29. The correct spellings of the words are as follows:

2. Noticeable
3. Occurrence
4. Playwright

Since, 'misspell' has been spelt correctly, option 1 is the correct answer.

30. 'Low down' means 'to receive the full story'. Thus, option 1 is the correct answer.

31. The meanings of the words are:

Cogent: (of an argument or case) clear, logical, and convincing

Congruent: in agreement or harmony; equal in size

Abstruse: difficult to understand; obscure

Obtuse: annoyingly insensitive or slow to understand.

Hence, according to the context of the sentence, 'cogent' is the most appropriate choice.

32. The word 'unbelievably' is the key. Qualities associated with a trained dancer are 'elegance', 'control over body', 'expressions', among many others. As 'unbelievably' is used, the quality of the dancer in the discussion has to be contrary to what is expected. Thus, 'clumsy' is the answer.

33. The speaker is comparing the effect two events have on a person. One is the washing away of his house and the other is the whereabouts of his daughter. The fact that his daughter is missing is of a greater concern to him than his wrecked house. This comparison can only be justified by the usage of word 'bigger'.

Also, take a look at the article before the blank. 'A' cannot be used before an adjective in the superlative degree. We always use 'the' before it.

E.g. *Reena was the smartest girl in class.*

So we can eliminate option 2.

We also cannot use 'a' before 'one' as it would be redundant. So we can eliminate option 3.

The use of the conjunction 'but' to show a contrast also tells us that we cannot simply state that his daughter's whereabouts was only a 'big' concern for him as it does not convey the magnitude of the situation sufficiently.

So we can eliminate option 1 and the correct answer is option 4.

34. There are two people involved in this sentence. If the number of persons involved is two or more, we refer to them as 'they in the third person.'

35. The tense in this sentence is present perfect continuous tense. This is because the speaker is talking about an event that started in the past and is still going on. Thus, 'has been' should be the best fit for the blank.

36. 'Deify' means to worship someone or something as God. Thus, 'worship' and 'revere' are synonyms. 'Devil' is the direct opposite of God and does not refer to any act. The only option which is opposite in meaning is 'demonize'.

37. 'Gleeful' is the right answer as it means the same as triumphantly joyful. 'Glitch' means a sudden, usually temporary malfunction. 'Gladiator' refers to a man trained to fight with weapons with another man or animal and 'glamour' is an attractive quality which appeals to certain people. Thus clearly, option 1 is the correct answer.
38. 'Lifestyle' and 'society' both encompass a wide gamut of objects and arts is a part of them. But they don't singularly encompass all things artistic. 'Passion' is an abstract noun and means a strong uncontrolled desire for something. 'Culture' is the only word that describes the given sentence perfectly.
39. 'Nipped in the bud' means 'to put an end to a potential problem before it grows big'. So, option 1 is the correct answer.
40. 'Hear someone out' means 'to listen to a person without any interruption until they have finished speaking. Hence, 'hear me to the end' is the correct answer.
41. It can be clearly seen that a comparison is drawn here between the modern medical machines and the ones which were older. Therefore, the comparative form of the verb needs to be used, and not the simple or the superlative form. Option 3 can be eliminated since 'elderly' is used in the context of people and not objects. 'Older' is the correct comparative form.
42. The incident of the car crash happened last week in the past. But the effect of the crash that is the shock continues in the present. Thus the correct answer is 'is still in shock'.
43. It can be seen clearly that the sentence contains a verb in the present tense form (are) and a verb in the -ing continuous form (giving). Hence, clearly the sentence is in present continuous tense. According to the rules of grammar, the verbs have to agree with the tense of the sentence. Among the given options, the present continuous form is seen in option 3 making it the right answer.
44. It can be clearly seen from the given sentence that the blank requires a preposition which indicates the relationship between the words 'way' and 'home'. It can also be inferred from the sentence that 'they' are at a place which is distant from their home. We need a preposition which would indicate this separation. Among the given options, 'from' is the option that is used to indicate separation.
- Eg. The distance *from* my school to my home was not very less.
45. Among the given options, options 2 and 4 can be eliminated, since they are grammatically wrong within themselves due to a mismatch between the tense

- of the two verbs. Now, among the remaining two options, clearly option 3 fits in better with the active voice of the sentence. Hence, it is the correct answer.
46. The third line clearly says that the Americans were staying on the second floor.
47. The hotel faces all the things except the café which is located across the square, which is by the side of the war memorial.
48. The passage mentions that one would find an artist with his easel in good weather in the public garden.
49. It is mentioned that the Italians came from a long way to visit the war monument.
50. The last line has mentioned that the waiter looked at the empty square from the doorway of the café.

Reasoning Ability

51. Sand is neither a metal nor a non-metal hence the odd one.
52. 8, 5, 13 are Fibonacci Numbers. (Fibonacci Series 0, 1, 1, 2, 3, 5, 8, 13, 21,)
- In Fibonacci Series: Nth number = (N - 1)th number + (N - 2)th number.
- Hence, 12 is the odd number.

53. In 5 : 24

$$\rightarrow 5 \times 5 = 25 - 1 = 24$$

Similarly;

$$\rightarrow 23 \times 5 = 115 - 1 = 114$$

Hence, 5 : 24 :: 23 : 114

54. The relation between the letters is as follows,

S (+2) \longrightarrow U

N (+1) \longrightarrow O

H (+2) \longrightarrow J

W (+1) \longrightarrow X

Similarly,

D (+2) \longrightarrow F

P (+1) \longrightarrow Q

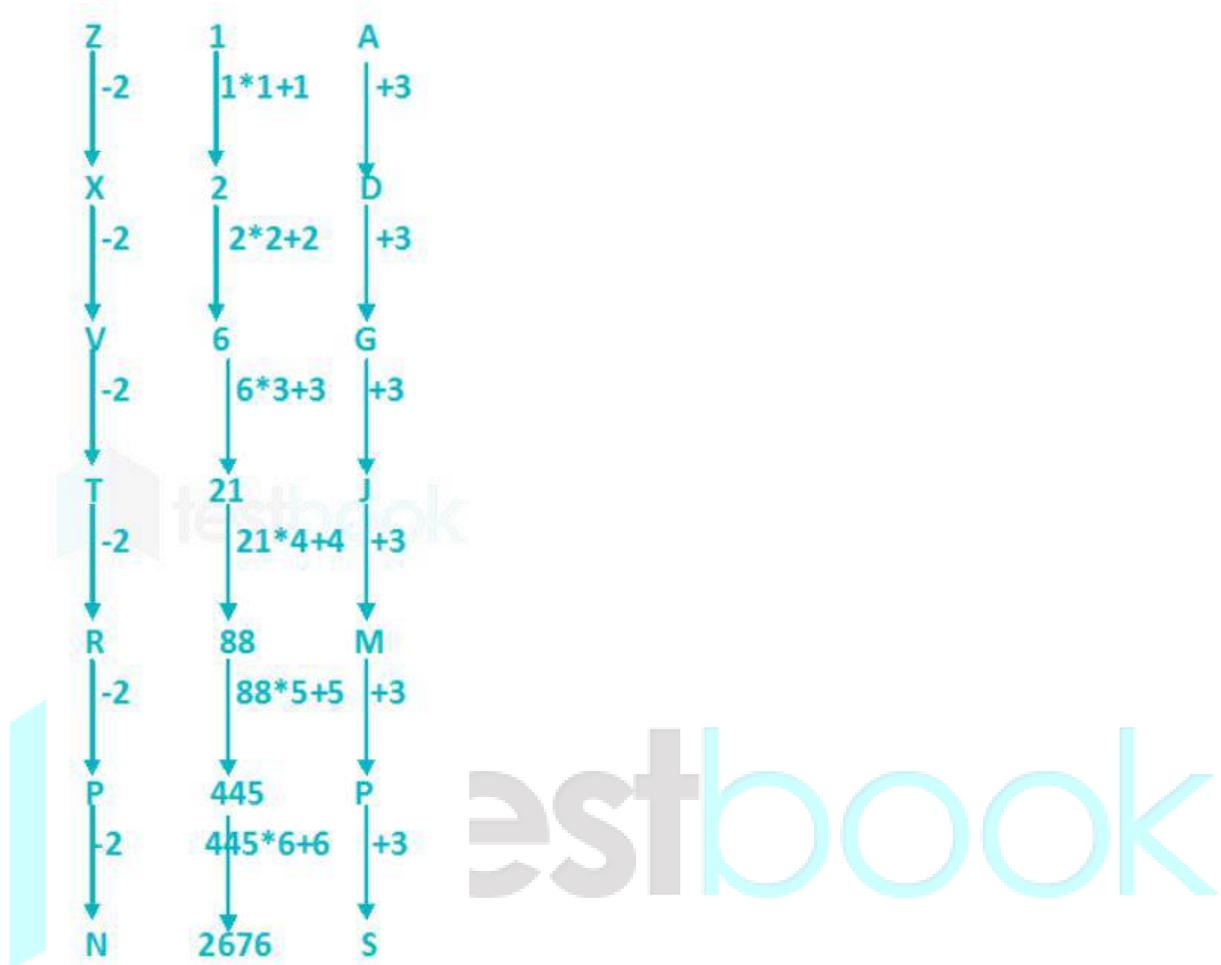
L (+2) \longrightarrow N

T (+1) \longrightarrow U

Hence DPLT is related to FQNU.

55. As never is the antonym of always, seldom is the antonym of often.

56.

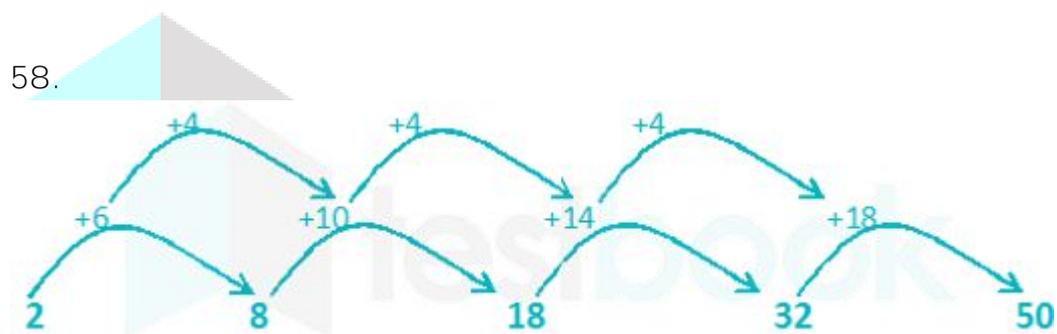


So, the correct option is N2676S

57. Logic:- I V X L C are roman letter.

| Letter | Meaning |
|--------|---------|
| I | 1 |
| V | 5 |
| X | 10 |
| L | 50 |
| C | 100 |

Hence, X is missing term.



So, the next term will be $50 + 22 = 72$

59. Substituting option 1 we get,

cbbb/cgbg/bbcg

Substituting option 2 we get,

cbbg/cbbg/cbbg

Substituting option 3 we get,

cbbg /cbbg/cbcg

Substituting option 4 we get,

gbbb/ccbg/bbbg

Here only option 2 is following a pattern

Hence, c g b c b is correct choice of option among available.

60. The series follows the below pattern:

$$7 + 5 = 12$$

$$12 + 7 = 19$$

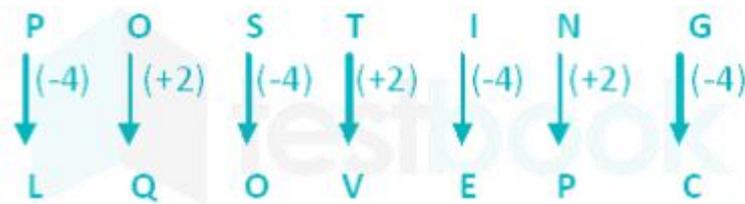
$$19 + 9 = 28 \neq 26$$

$$28 + 11 = 39$$

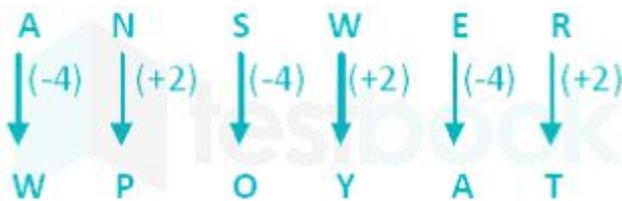
$$39 + 13 = 52$$

Hence, 26 is the wrong number.

61. POSTING is coded as:



Same way, ANSWER is coded as:



Hence ANSWER is coded as WPOYAT.

62. The letters are coded as follows,

| | | | | | | |
|---|---|---|---|---|---|---|
| C | A | L | I | C | U | T |
| 8 | 2 | 5 | 1 | 8 | 9 | 6 |

| | | | | | | |
|---|---|---|---|---|---|---|
| K | O | L | K | A | T | A |
| 3 | 7 | 5 | 3 | 2 | 6 | 2 |

Therefore, from above coding, we can code CUTTACK as,

C → 8

U → 9

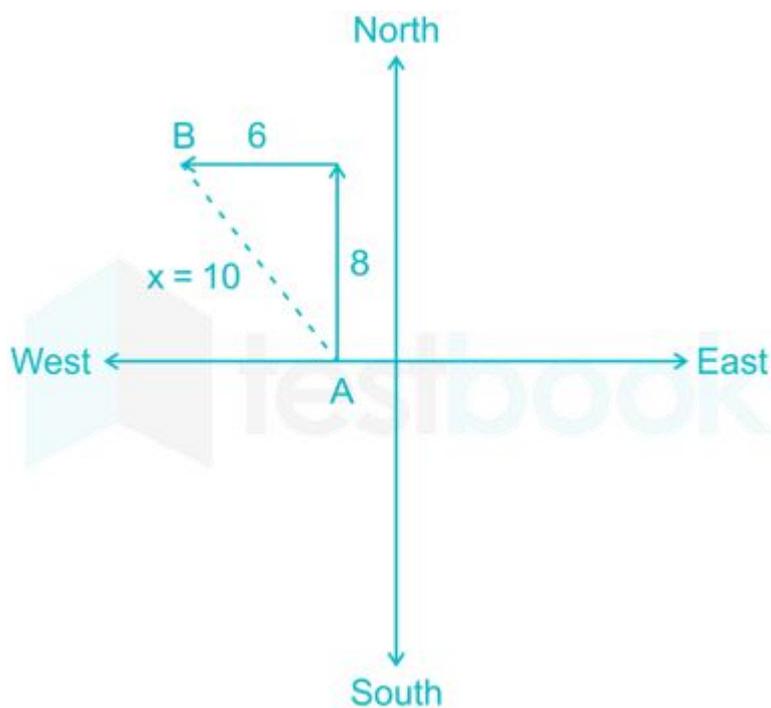
T → 6

A → 2

K → 3

Thus CUTTACK is coded as 8966283.

63. The path followed by Radha is as follows:



Thus we can see, the distance from starting point can be given using Pythagoras theorem

$$\text{Therefore } x^2 = (8^2 + 6^2)$$

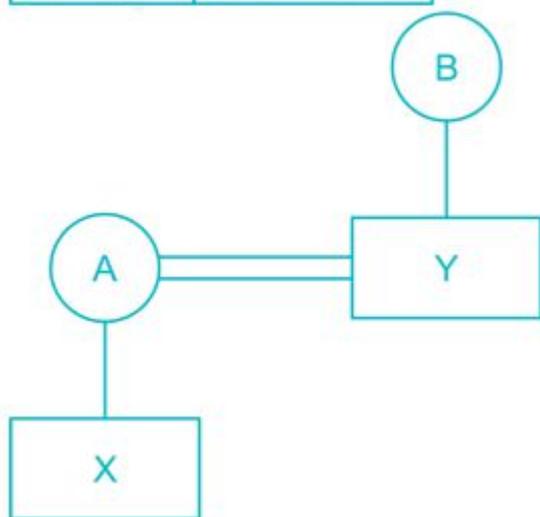
$$\therefore x = 10$$

Hence Radha is 10 km from her starting point.

64. Let the boy be X and Hardik be Y

The family tree is represented in the figure below using the above conditions.

| Symbol in Diagram | Meaning |
|-------------------|----------------------------|
| | Female |
| | Male |
| | Married Couple |
| | Siblings |
| | Difference of A Generation |



Thus we can see that X is son of Y, thus the boy is son of Hardik.

65. Let's check each option,

1) 21, 56, 62, 44 → SNAC

2) 16, 56, 46, 35 → SNAK

3) 21, 23, 54, 52 → SNOW

4) 21, 14, 22, 56 → SIGN

Hence answer is 21, 23, 54, 52.

66. Given word: COMPREHENSION

COMPRISE → Can be formed as COMPREHENSION.

PENSION → Can be formed as COMPREHENSION.

ONIOX → Cannot be formed as X is not there in COMPREHENSION.

PRECH → Can be formed as COMPREHENSION.

Hence only word ONIOX cannot be formed.

67. Since society contains both teachers and students it serves as a super set and here it is represented by a bigger circle. Again since some teachers can be student and some student can be teachers as well they are represented by smaller circles intersecting each other.

68. $6*2 = 12 \Rightarrow$ Reverse number = 21

$21*2 = 42 \Rightarrow$ Reverse number = 24

$24*2 = 48 \Rightarrow$ Reverse number = 84

$84*2 = 168 \Rightarrow$ Reverse number = 861

$861*2 = 1722 \Rightarrow$ Reverse number = 2271

$2271*2 = 4542 \Rightarrow$ Reverse number = 2454

$2454*2 = 4908 \Rightarrow$ Reverse number = 8094

Hence, missing number is 2454.

69. The relation between the numbers is as follows,

In first row: $5 + 2 = 7$; $7 + 4 = 11$

In second row: $16 + 2 = 18$; $18 + 4 = 22$

Thus in third row: $7 + 2 = 9$; $9 + 4 = 13$

Hence the missing number is 9.

70. 3 daily wage workers A, B and C are distributed Rs. 178

$$A + B + C = 178 \quad \dots\dots\dots 4$$

A gets Rs. 4 less than C

$$C - A = 4$$

$$\Rightarrow A = C - 4 \quad \dots\dots\dots 1$$

B gets Rs. 15 more than A

$$B - A = 15$$

$$\Rightarrow A = B - 15 \quad \dots\dots\dots 2$$

Comparing 1 and 2

$$C - 4 = B - 15$$

$$\Rightarrow C = B - 15 + 4$$

$$\Rightarrow C = B - 11$$

C gets Rs. 11 less than B

$$B - C = 11$$

$$\Rightarrow B = C + 11 \quad \dots\dots\dots 3$$

Put values from equation 1 and 3 in 4.

$$A + B + C = 178$$

$$C - 4 + C + 11 + C = 178$$

$$3C = 178 - 7$$

$$C = 171/3$$

$$C = 57$$

Using equation 3

$$B = 57 + 11$$

$$B = 68$$

Using equation 1

$$A = B - 15$$

$$A = 68 - 15$$

$$A = 53$$

$$\text{Hence, } A : B : C = 53 : 68 : 57$$

So, the correct answer is 53:68:57.

71.

| Symbol | Code |
|--------|------|
| + | × |
| - | ÷ |
| × | - |
| ÷ | + |

→ $5 + 45 - 5 \div 5 \times 6$ will be represented as

$$\rightarrow 5 \times 45 \div 5 + 5 - 6$$

$$= 5 \times 9 + 5 - 6$$

$$= 45 + 5 - 6$$

$$= 50 - 6$$

$$= 44$$

So, the correct answer is 44.

72. Kartik is senior of Gyan. Gyan is senior than Appu

$$\rightarrow \text{Kartik} > \text{Gyan} > \text{Appu}$$

Appu is junior of Raju. Raju is junior of Gyan

$$\rightarrow \text{Gyan} > \text{Raju} > \text{Appu}$$

Combining above relations:

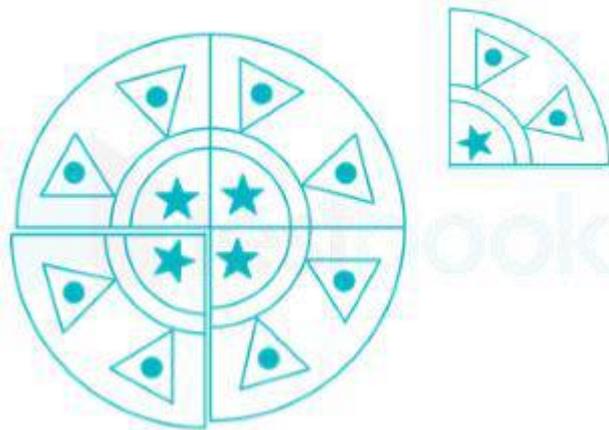
$$\rightarrow \text{Kartik} > \text{Gyan} > \text{Raju} > \text{Appu}$$

Hence, Kartik is the most senior.

73. Clearly, the mirror image is as follows

JUDGEMENT  **JUDGEMENT**

74. Completing the figure,



Hence answer is option 1.

75. Had the book not been available, such a statement could not have been made. Thus assumption I holds.

Since the book is being mentioned as a reference to clear doubts, this points to the assumption that the book must be including the topics that are currently being taught. Hence assumption II holds.

Quantitative Aptitude

76. Let the price of chair be 'a'.

Given, price of 10 chairs is equal to that of 4 tables.

$$\therefore 10 \times a = 4 \times \text{price of table}$$

$$\Rightarrow \text{Price of table} = 2.5a$$

Given, price of 15 chairs and 3 tables together is Rs. 4500

$$\therefore 15a + 7.5a = 4500$$

$$\Rightarrow 22.5a = 4500$$

$$\Rightarrow a = \text{Rs. } 200$$

Price of table = $2.5a = \text{Rs. } 500$

Total price of 12 chairs and 5 tables = $12 \times 200 + 5 \times 500 = \text{Rs. } 4900$

77. The ratio of male to female employees in 2:3.

∴ Let the number of male employees in the company be $2x$, and the number of female employees be $3x$.

∴ Average weight of all employees = $\frac{\text{Sum of weights of all employees}}{\text{Number of employees}}$

⇒ $W = \frac{(\text{total weight of males} + \text{total weight of females})}{5x}$

⇒ Total weight of males + total weight of females = $5Wx$

Now, Average weight of males = $\frac{\text{Total weight of males}}{\text{Number of males}}$

∴ $W + 15 = \frac{\text{Total weight of males}}{2x}$

⇒ Total weight of males = $2x \times (W + 15) = 2Wx + 30x$

∴ total weight of females = $5Wx - (2Wx + 30x) = 3Wx - 30x$

∴ Average weight of females = $\frac{\text{Total weight of females}}{\text{number of females}}$

⇒ Average weight of females = $\frac{(3Wx - 30x)}{3x} = W - 10$

Hence, the average weight of female employees is $(W - 10)$ kgs

78. We know that, formula for simple interest-

$$S.I. = \frac{P \times R \times T}{100}$$

Where,

S.I. = Simple Interest

P= principal

T = Time

Let the number of years = rate% = x

We are given,

$$\frac{4}{9}P = \frac{P \times x \times x}{100} \Rightarrow x^2 = \frac{400}{9}$$

$$\Rightarrow x = \sqrt{400/9} = (20/3) \% \text{ (can't be negative)}$$

Hence, the required rate of interest is $\{6 + (2/3)\} \% \text{ per annum.}$

79. Let Marked price = Rs. x

∴ Cost price is two fifth of its marked price

$$\therefore \text{Cost price} = 2x/5 = 0.40x$$

Discount percent = 10%

$$\therefore \text{Discount} = 0.10x$$

∴ Selling price = Marked price – Discount

$$\therefore \text{Selling price} = x - 0.10x = 0.90x$$

$$\therefore \text{Profit} = \text{Selling price} - \text{Cost price} = 0.90x - 0.40x = 0.50x$$

∴ Profit per cent

$$= (\text{Profit}/\text{Cost price}) \times 100\%$$

$$= (0.50x/0.40x) \times 100\% = 125\%$$

80. \Rightarrow No. of total students Present in the school = 720

Given Boys : Girls = 7 : 5

$$\Rightarrow \text{No. of Boys Present in School} = \frac{7}{7+5} \times 720 = 420$$

$$\text{Similarly No. of Girls Present in School} = \frac{5}{7+5} \times 720 = 300$$

In order to Have girls & boys in equal Ratio no. of girls more required = $420 - 300 = 120$

81. Let the number of rotten eggs be a .

Total number of eggs are 100.

Remaining good eggs = $100 - a$

Now, he gives 80% of the good eggs to his neighbours and he is left out with 36 eggs.

$$\therefore 100 - 80\% \text{ of } (100 - a) = 36$$

$$\Rightarrow 100 - 80 + 0.8a = 36$$

$$\Rightarrow 20 + 0.8a = 36$$

$$\Rightarrow 0.8a = 16$$

$$\Rightarrow a = 20$$

82. Given, M.P. of article = Rs. 640

Let the first discount% be 'a'

Selling price after first discount = $640 - a\%$ of 640

$$\Rightarrow \text{Selling price} = 640 - 6.4a$$

2nd discount% is 12.5%

Selling price after 2nd discount = $(640 - 6.4a) - 12.5\%$ of $(640 - 6.4a)$

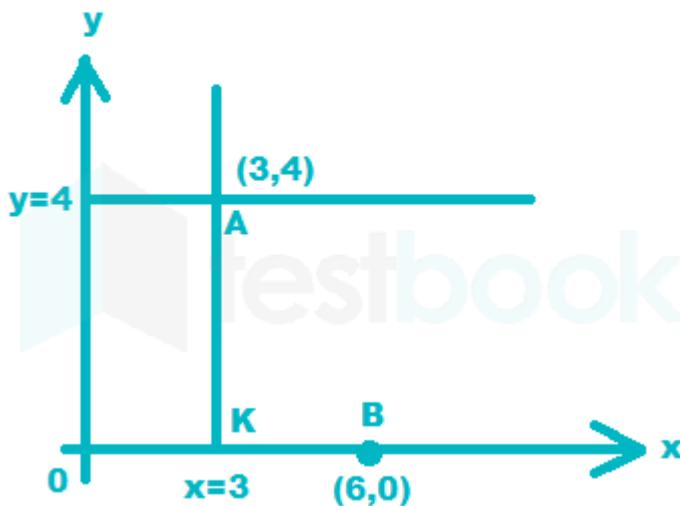
$$\Rightarrow \text{Selling price after 2nd discount} = 560 - 5.6a$$

Given, final selling price is Rs. 448

$$\Rightarrow 560 - 5.6a = 448$$

$$\Rightarrow a = 20\%$$

83.



From the figure, it is clear that the intersecting point of the two lines $x = 3$ and $y = 4$ is $(3, 4)$

Now the question is to find the distance between the two points (3, 4) & (6, 0).

According to the figure the distance is given by AB.

Given the two points (x_1, y_1) and (x_2, y_2) , the distance between these points is given by the formula:

$$D = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

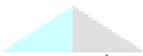
Here, $x_1 = 3, y_1 = 4$ & $x_2 = 6, y_2 = 0$

Putting the values in the formula, we get:

$$D = \sqrt{(3 - 6)^2 + (4 - 0)^2}$$

$$\Rightarrow D = \sqrt{(3^2 + 4^2)}$$

$$\Rightarrow D = \sqrt{25} = 5$$

84. 

$$x = 1 + \sqrt{6} + \sqrt{7}$$

$$x + \frac{1}{x - 1}$$

$$= (1 + \sqrt{6} + \sqrt{7}) + \frac{1}{1 + \sqrt{6} + \sqrt{7} - 1}$$

$$= 1 + \sqrt{6} + \sqrt{7} + \frac{1}{\sqrt{6} + \sqrt{7}} \times \frac{\sqrt{6} - \sqrt{7}}{\sqrt{6} - \sqrt{7}}$$

$$= 1 + \sqrt{6} + \sqrt{7} + \frac{(\sqrt{6} - \sqrt{7})}{6 - 7}$$

$$= 1 + \sqrt{6} + \sqrt{7} + \sqrt{7} - \sqrt{6}$$

$$= 1 + 2\sqrt{7}$$

85. Let the speeds of the two trains be 'a' m/s and 'b' m/s respectively.

When two trains cross each other completely, each travels a distance equal to sum of their lengths.

While traveling in the opposite directions,

relative speed = $(a + b)$ m/s

Also, relative speed = $(338 + 312)/26 = 650/26 = 25$ m/s

$\therefore a + b = 25$ ---(i)

22 | Page

While traveling in the same directions,

$$\text{relative speed} = (a - b) \text{ m/s}$$

$$\text{Also, relative speed} = (338 + 312)/50 = 650/50 = 13 \text{ m/s}$$

$$\therefore a - b = 13 \quad \text{---(ii)}$$

Solving the two equations,

$$\text{We get: } a = 19 \text{ and } b = 6$$

$$\therefore \text{Speed of faster train} = 19 \text{ m/s}$$

$$86. 7^{82} + 7^{83} + 7^{84} + 7^{85} = 7^{82} (1 + 7 + 7^2 + 7^3)$$

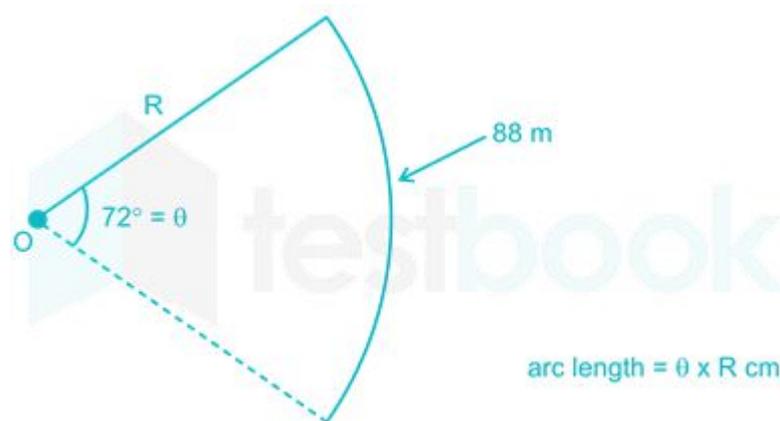
$$= 7^{82} (1 + 7 + 49 + 343)$$

$$= 7^{82} (400)$$

As 400 is completely divisible by 50,

The answer is 50.

87. Let the horse be tied at point O as shown in the figure and let the length of rope is R meters.



Since the rope is always stretched while moving in circular path thus the length of rope is the radius of the circular path.

We know that,

$$\Rightarrow \text{Length of arc traced} = \theta \times \text{radius, where } \theta \text{ is the angle traced by the horse}$$

$$\text{Given, arc length} = 88 \text{ m}$$

⇒ Angle traced, $\theta = 72^\circ$

$$= \frac{72}{180} \times \pi$$

Hence,

$$\Rightarrow 88 = \frac{72}{180} \times \pi \times R$$

$$\Rightarrow R = \frac{88 \times 180 \times 7}{72 \times 22}$$

= 70 m

88. Formulas to be used: -

$$SI, I = (P \times r \times t)/100$$

For CI:

$$A = P\left(1 + \frac{r}{100}\right)^t$$

Where SI is Simple interest,

A is the amount at the end of time t,

P is the principal,

t is time,

r is rate

Given, simple interest on a sum of money for 2 yr at 5% per annum is Rs. 100.

$$\Rightarrow 100 = (P \times 5 \times 2)/100$$

$$\Rightarrow P = \text{Rs. } 1000$$

For CI,

$$A = 1000\left(1 + \frac{5}{100}\right)^2$$

$$\Rightarrow A = 1102.5$$

$$CI = A - P$$

$$\Rightarrow CI = \text{Rs. } 102.5$$

89. Let B be in business for “n” months.

⇒ B joins business “12-n” months after A.

Ratio of investments of A: B = 50000: 30000 = 5: 3 ---(1)

The ratio of profits = (A’s investment × A’s time period): (B’s investment × B’s time period)

⇒ The ratio of profits = (50,000 × 12): (30,000 × n)

⇒ The ratio of profits = (5 × 12): 3n

⇒ The ratio of profits = 20 : n ---(2)

From given data, ratio of profits = 3: 1

⇒ 20: n = 3: 1 (from 2)

⇒ $n = 20/3 = 6\frac{2}{3}$ months

∴ B joined business after $5\frac{1}{3}$ months. ($12 - 6\frac{2}{3} = 5\frac{1}{3}$)

90. Reenu finishes the work in 15 days

∴ Part of work done by Reenu in one day = 1/15

Working together they complete the work in 10 days.

⇒ Part of Work done by both in 1 day = 1/10

∴ Part of Work done by Meenu in 1 day = $1/10 - 1/15 = 1/30$

The wages will be in ratio of their efficiency i.e.

Ratio of wages of Reenu : Meenu = 1/15 : 1/30 = 2 : 1

Share of Reenu = $600 \times 2/3 = \text{Rs } 400$

Share of Meenu = $600 - 400 = \text{Rs } 200$

91. Let the speed of boat be ‘a’ and speed of stream be ‘b’.

Relative speed of boat going upstream = a – b

Relative speed of boat going downstream = a + b

Given, boat goes downstream in one-third the time it takes to go upstream.

Time = distance/speed

Distance is same in both cases.

$$\therefore \frac{d}{a+b} = \frac{1}{3} \times \frac{d}{a-b}$$

$$\Rightarrow 3a - 3b = a + b$$

$$\Rightarrow a = 2b$$

$$\Rightarrow a : b = 2 : 1$$

92. Given, the man travels 226 kms covering c km of the distance by aeroplane and the rest of distance by car.

Distance covered by car = 226 - c

Now, travelling cost is Rs. 11 a kilometer by an aeroplane and Rs. 5 a kilometer by car.

$$\therefore \text{Cost of trip} = 11 \times c + (226 - c) \times 5 = \text{Rs. } (6c + 1130)$$

93. Give, list price is Rs. 2300 and discount is 4%.

Discount = 4% of 2300 = 4 × 23 = Rs. 92

SP = LP - Discount

$$\Rightarrow \text{SP} = 2300 - 92 = \text{Rs. } 2208$$

94. Let the length and width of the given rectangle be l and b respectively.

We know that, perimeter of rectangle = 2 × (length + width)

$$\Rightarrow 160 = 2 \times (l + b)$$

$$\Rightarrow l + b = 80 \text{ m ... (1)}$$

Given, difference of two sides = 48 m

$$\therefore l - b = 48 \text{ ... (2)}$$

Solving above two equations we get,

$l = 64$ meters & $b = 16$ meters

We know that, Area of rectangle = $l \times b$

Let the side of the square be 'a' meters. Thus, according to the question

$\Rightarrow a^2 = l \times b$ [\because Area of square = side²]

$\Rightarrow a^2 = 64 \times 16$

$\Rightarrow a = 32$ meters

95. Given, ratio of monthly incomes of A, B, is 6 : 5 and their monthly expenditures are in the ratio 4 : 3.

Let the monthly incomes of A, B is $6a$ and $5a$ respectively and their monthly expenditures be $4b$ and $3b$ respectively.

Savings = Income – expenditure

Given, each of them saves Rs. 400 per month.

$\therefore 6a - 4b = 400$

$5a - 3b = 400$

Solving these two equations we get $a = b = 200$

\therefore Monthly income of A = $6a =$ Rs.1200

Monthly income of B = $5a =$ Rs. 1000

The sum of their monthly incomes = Rs. (1200 + 1000) = Rs. 2200

96. Let,

Total distance covered = $2x$ km

We know that,

Time required = Distance covered/Speed

Given,

Half of the distance i.e. x km is covered at speed 16 km/hr

\therefore Time required = $x/16$ hours

Next half of the distance i.e. x km is covered at speed 24 km/hr

\therefore Time required = $x/24$ hours

Given,

Total time required = 5 hours

$\therefore x/16 + x/24 = 5$

$$\Rightarrow (3x + 2x)/48 = 5$$

$$\Rightarrow 5x = 48 \times 5$$

$$\Rightarrow x = 48 \text{ km}$$

$$\therefore \text{Total distance covered} = 2 \times 48 \text{ km} = 96 \text{ km}$$

97. Given, pipe A can fill a tank in 4 hours.

\therefore In one hour A can fill $1/4^{\text{th}}$ of the tank.

Pipe B can fill the tank in 6 hours.

\therefore In one hour B can fill $1/6^{\text{th}}$ of the tank.

Given,

They are opened on alternative hours, and pipe A is opened first

After 4 hours, volume of tank filled = $2 \times (1/4) + 2 \times (1/6)$

\Rightarrow After 4 hours, volume of tank filled = $1/2 + 1/3 = 5/6$

Volume of empty tank = $1 - 5/6 = 1/6$

\therefore 4 hours have passed thus it's the turn of pipe A to be opened.

Number of hours taken by pipe A to fill $1/6^{\text{th}}$ of the tank = $\frac{1}{\frac{1}{6} \times 4}$

\Rightarrow Number of hours taken by pipe A to fill $1/6^{\text{th}}$ of the tank = $2/3$

Total time taken to fill the tank = $4 + 2/3$

= $14/3$ hours

= $4\frac{2}{3}$ hours

98. Given, table worth Rs. 300 is offered with 20% and 10% off.

1st Discount: 20% of Rs.300 = 60

After 1st Discount

Selling price = $300 - 60 = \text{Rs. } 240$

2nd Discount: 10% of Rs.240 = 24

After 2nd Discount

Selling price = $240 - 24 = \text{Rs. } 216$

Now an additional discount of 5% is given.

3rd Discount: 5% of Rs.216 = 10.8

After 3rd Discount

Selling price = 216 – 10.8 = Rs.205.2

99. Given, Total number of students = 540

From the pie chart,

Number of students attending the computer class

$$= (120/360) \times 540$$

$$= 540/3 = 180$$

Number of students attending the painting class

$$= (100/360) \times 540$$

$$= 150$$

∴ The ratio of the students attending the computer class to painting class is

$$= 180 : 150 = 6 : 5$$

100. Given, Total number of students = 540

From the pie chart,

The angle of sector representing the number of students attending the paper cutting class

$$= 360 - (120 + 100 + 72 + 18) = 360 - 310 = 50$$

Number of students attending the paper cutting class

$$= (50/360) \times 540$$

$$= 75$$

General Awareness

101. The European Union (EU) is a politico-economic union of 28 member states that are located primarily in Europe.

102. BRICS is the acronym for an association of five major emerging national economies: Brazil, Russia, India, China and South Africa. South Africa joined it in 2010.

103. Insurance Density and Insurance Penetration are the two important indicators, which provide the level of development of insurance sector in an economy. Insurance penetration is defined as the ration of total premium collected to the Gross Domestic Product of an economy. The Insurance Density is defined as the ration of total premium to the total population in the country.

104. Textile Industry of India is not a core industry.

105. Land, labour, capital and organization are the four important factors of production.

106. In economics, Gresham's law is a monetary principle stating that "bad money drives out good". For example, if there are two forms of commodity money in circulation, which are accepted by law as having similar face value, the more valuable commodity will disappear from circulation.

107. Fly ash includes substantial amounts of silicon dioxide (SiO_2), aluminium oxide (Al_2O_3) and calcium oxide (CaO).

108. Chandigarh is well known for its Rock Garden which is made out of recycled things.

109. The country of Bangladesh has the longest international boundary with India.

110. Vishakhapatnam is where the Hindustan Shipyard is located.

111. Helsinki is the capital city of the country of Finland.

112. Taiga vegetation is usually found in the coniferous areas.

113. Badshah Khan was the initial name of Abdul Gaffar Khan. He was also called the **'Frontier Gandhi'**.

114. Bose had been a leader of the younger, radical, wing of the Indian National Congress in the late 1920s and 1930s, rising to become Congress President in 1938

and 1939. he was ousted from Congress leadership positions in 1939 following differences with Mahatma Gandhi and the Congress high command.

115. The rule of Gupta Dynasty is referred to as the Golden Age of Ancient India. It is the period between 4th century CE and 6th century CE.

116. The correct Chronological order is Chandragupta I, Samudragupta, Harshavardhana and Rajendra Chola I.

117. Razia Begum, also known as Razia Sultan, became the first woman ruler of the Sultanate of Delhi. She belonged to the Mamluk Dynasty which was also known as the Slave Dynasty.

118. Painting was patronized by Jahangir.

119. Babur was involved in the first battle of Panipat where he defeated Sikander Lodi. Second battle was fought between Akbar and Hemu where Hemu got defeated. Third battle saw the victory of Ahmed Shah Abdali over Marathas.

120. Though Indian state is Federal in its nature, the word Federal is nowhere mentioned in the constitution. All the other words are mentioned in the Preamble.

121. Dr. Nasim Zaidi is the incumbent Chief Election Commissioner of India. He is a retired I.A.S. officer of 1976 batch from the Uttar Pradesh cadre.

122. Attorney General of India is free to visit any court within the country and attend the proceedings of that court whenever he likes.

123. There are 24 High Courts at the state and union territory level of India which, together with the Supreme Court of India at the national level, comprise the country's judicial system. Each High Court has jurisdiction over a state, a union territory or a group of states and union territories.

124. Bile is a digestive juice produced by the liver which lacks enzymes of any sort but aids digestion.

125. Progesterone is the hormone produced for the implementation of ovum in the ovaries.

126. The Presence of Cell Wall distinguishes a plant cell from an animal cell.

127. Active transport is the movement of molecules across a cell membrane from a region of their lower concentration to a region of their higher concentration in the direction against some gradient or other obstructing factor.

128. In a tape recorder, the sound is recorded in the form of variable magnetic field.

129. The sky appears to be blue due to the scattering of light.

130. The Higgs boson is an elementary particle in the Standard Model of particle physics. The question of the Higgs field's existence has been called by some, "the central problem in particle physics".

131. The hearing frequency of dogs allows them to hear ultrasonic sounds that humans cannot hear.

132. Mercury was discovered by known since ancient times in unknown at not known. Origin of name: named after the planet "Mercury". The origin of the symbol Hg is the Latin word "hydrargyrum" meaning "liquid silver".

133. When water condenses to ice without changing temperature, latent heat is released.

134. Ethylene gas is used in the process of fruit ripening.

135. Methane is the chief constituent of Gobar Gas.

136. Aryabhata was the first experimental satellite to be launched by India in the year 1975. It was named after the famous Indian Astronomer Aryabhata.

137. The IBM Simon was the first phone with a touchscreen in 1992. It's also **referred as the first "smartphone," though the term was not yet coined.**

138. In the year 1972, Dennis Ritchie developed C language for the computer for general use.

139. Mycobacterium is the main cause of leprosy.

140. Zika name comes from the Zika Forest of Uganda, where the virus was first isolated in 1947. Zika virus is related to dengue, yellow fever, Japanese encephalitis, and West Nile viruses.

141. Meghalaya will host the 2022 National Games. Indian Olympic Association, IOA accepted Meghalaya's bid to host the National Games overshadowing four other bidders Andhra Pradesh, Goa, Chhattisgarh and Uttarakhand. Meghalaya will be the third northeastern state after Manipur and Assam to host the National Games. Goa will host the next National Games in November 2017.

142. Atletico De Kolkata scripted history after winning Indian Super League (ISL) football tournament for the second time in three years. Kolkata defeated Kerala Blasters 4-3 in a penalty shootout in Kochi. Both teams were one goal each in the stipulated time. In the penalty shootout, the Kolkata team scored four goals against the three by Kerala Blasters.

143. Paolo Gentiloni has been named as Italy's new Prime Minister following reformist leader Matteo Renzi's resignation. He served as the Foreign Minister under Renzi and was asked by President Sergio Mattarella to form a new centre-left government. He is a loyalist from Mr Renzi's Democratic Party. He faces a banking crisis and a rise in popular support for anti-establishment and eurosceptic parties.

144. Union Ministry of Tribal Affairs in collaboration with UNDP & National **Scheduled Tribes Finance & Development Corporation** will launch “**Vanjeevan**” the National Resource Centre for Tribal Livelihood at Bhubaneswar, Odisha. NRC website and e-knowledge platform will also be unveiled. This will be followed by a workshop on Skill development and entrepreneurship landscape in tribal areas.

145. “Elections are celebrations of democracy. They communicate the will of the **people, which is supreme in a democracy,**” PM said. **The ECI will celebrate the seventh National Voters’ Day across the country today, for enhancing the** participation of the citizens in the electoral process. January 25 is marked as the foundation day of the Election Commission, which came into being in 1950.

146. Natyashastra- a treatise on drama is said to be authored by Bharatmuni, a sage in around 400 BC.

147. Playing It My Way is the autobiography of former Indian cricketer Sachin Tendulkar. It was launched on 5 November 2014 in Mumbai.

148. The two day annual camel festival was held in Bikaner, Rajasthan. The two-day festival was organised by the Rajasthan Tourism Department and the Bikaner district administration. The inaugural ceremony was marked by the performance of the Army band. The festival saw many fun activities including camel safaris, camel dance, milking and fur cutting design competitions and camel races.

149. Operation Raahat is an operation of the Indian Armed Forces to evacuate Indian citizens from Yemen during the 2015 military intervention by Saudi Arabia and its allies in that country.

150. The Cabinet Committee on Economic Affairs (CCEA) has given its approval to implement the World Bank assisted National Watershed Management Project "Neeranchal". Neeranchal is primarily designed to bring about institutional changes in watershed and rain-fed agricultural management practices and through the watershed plus approach, support improved equity, livelihoods, and incomes through forward linkages, on a platform of inclusiveness and local participation. Neeranchal is designed to further strengthen and provide technical assistance to the Watershed Component of PMKSY and to enhance its delivery capacity.

[Live Leak MTS Model Question Paper –
Based on Predicted Pattern](#)

[Official SSC MTS Syllabus 2017](#)