

STAFF SELECTION COMMISSION

COMBINED GRADUATE LEVEL (TIER-I)

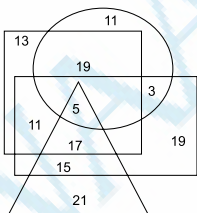
SOLVED PAPER

(4<sup>th</sup> March 2020: Shift-1)

Time Allotted: 1 hour

Max mark: 200

General Intelligence and Reasoning

1. Arrange the following words in the order in which they appear in an English dictionary.  
 1. Gemlike 2. Geminate 3. Gemmier 4. Geminal  
 5. Gemini  
 1. 4, 2, 5, 1, 3 2. 4, 3, 2, 1, 5 3. 3, 5, 4, 1, 2 4. 4, 5, 2, 1, 3
2. Study the given pattern carefully and select the number that can replace the question mark(?) in it.
- |    |     |    |
|----|-----|----|
| 7  | 11  | 14 |
| 53 | 127 | ?  |
| 4  | 6   | 3  |
1. 200 2. 199  
 3. 196 4. 169
3. In a certain code language, STRAIGHT is written as TSARGITH. How will THURSDAY be written in that language?  
 1. UHTDRSYA 2. AYSDURTH  
 3. HTRUDSYA 4. HTRUDSAY
4. Arsh is Shivam's father and Dhruv is the son of Bimla. Eshwar is the father of Arsh. If Shivam is the brother of Dhruv, how is Bimla related to Eshwar?  
 1. Daughter-in-law 2. Sister-in-law  
 3. Mother 4. Wife
5. In a certain code language, LARVAE is coded as 15-1-9-5-1-2. How will INSECT be coded in that language?  
 1. 3 - 13 - 8 - 2 - 14 - 8 2. 9 - 13 - 8 - 22 - 24 - 7  
 3. 18 - 13 - 8 - 2 - 24 - 7 4. 3 - 13 - 8 - 2 - 24 - 7
6. The given Venn diagram represents artists in a circus. The triangle represents clowns, the circle represents acrobats, the rectangle represents males and the square represents ringmasters. The numbers given in the diagram represent the number of persons in that particular category.
- 
- How many male clowns are also ringmasters, but not acrobats?  
 1. 15 2. 5 3. 11 4. 17
7. Which of the following option figures is the exact mirror of the given figure when the mirror is held on the right side?  
 #paV\$ArK@  
 1. ⓄK1A2V69# 2. #b9A2V1KⓄ  
 3. ⓄX1A2V69# 4. #X1A2V6dⓄ
8. Select the option in which the numbers are related in the same way as the numbers in the given set. (109, 114, 139)  
 1. (419, 424, 439) 2. (268, 302, 237)  
 3. (313, 318, 343) 4. (579, 534, 549)
9. Select the correct combination of mathematical signs to sequentially replace the \* signs, to balance the following equation.  
 (12 \* 7 \* 6) \* 13 \* 6  
 1. -, ÷, ×, = 2. ×, =, ÷, -  
 3. ×, -, ÷, = 4. ÷, -, =, ×
10. A recent survey of married couples in Indian metro cities showed that 20% of the couples have one child, 45% of

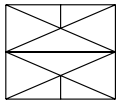
the remaining couples have two children, and the rest of the couples have three or more children. What is the percentage of couples with three or more children?

1. 35% 2. 44% 3. 42% 4. 56%
11. Select the letter-cluster that can replace the question mark (?) in the following series.  
 DAC, GWH, JSM, MOR, ?  
 1. PKW 2. PJV 3. QJW 4. QKV
12. Four words have been given, out of which three are alike in some manner, while one is different. Select the odd word.  
 1. Righteousness 2. Conduct  
 3. Probity 4. Virtue
13. Select the number that can replace the question mark (?) in the series. 17, 20, 15, 22, 13, ?  
 1. 4 2. 2 3. 24 4. 22
14. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

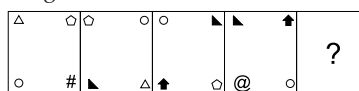
Statements:





1. Some cars are rockets. 2. All rockets are engines.

Conclusions:

- I. Some engines are rockets  
 II. Some engines are cars.  
 1. Only conclusion I follows.  
 2. Both conclusions I and II follow.  
 3. Only conclusion II follows.  
 4. Neither conclusion I nor II follows.
15. Which two signs should be interchanged to make the given equation correct?  
 $225 + 5 \times 3 \div 5 - 7 = 133$   
 1. + and ÷ 2. - and ÷ 3. - and × 4. + and ×
16. Select the set of letter that, when sequentially placed in the blanks of the given letter series, will complete the series.  
 \_SWWS\_WWWS\_SWWWW\_SSS  
 1. W, W, S, S 2. W, S, W, S 3. W, S, S, S 4. W, S, S, W
17. How many triangles are presents in the given figure?
- 
1. 30 2. 22  
 3. 28 4. 26

18. Select the figure that can replace the question mark(?) in the following series.

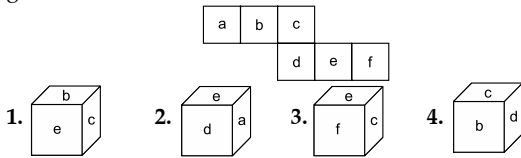


1.  2.  3.  4. 

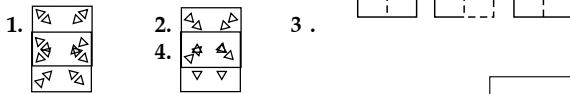
19. Select the option that is related to the third number in the same way as the second number is related to the first number and the sixth number is related to the fifth number.  
 52 : 221 :: 20 : ? :: 64 : 272

1. 170 2. 84 3. 85 4. 255

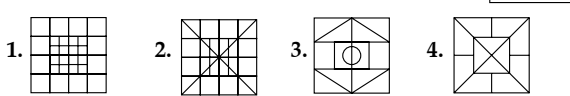
20. Select the box that CANNOT be formed by folding the given unfolded box.



21. The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded?



22. Select the option figure in which the given figure is embedded (rotation is NOT allowed).



23. Select the option that is related to the third word in the same way as the second word is related to the first word.

Jackal : Howl : Rain : ?

1. Hustle 2. Thunder 3. Patter 4. Drops  
 24. Select the option in which the words share the same relationship as that shared by the given pair of words.  
 Hive : Bee  
 1. Eyrie : Bear 2. Stable : Cow  
 3. Sty : Dog 4. Burrow : Hare  
 25. Four letter-clusters have been given, out of which three are alike in some manner, while one is different. Select the odd letter-cluster.  
 1. TSR 2. YXW 3. NML 4. FGH

### General Awareness

26. Lt. General \_\_\_\_\_ took charge as the Chief of Army Staff on 31 December 2019.  
 1. Ravendra Pal Singh 2. Manoj Mukund Naravane  
 3. Anil Chauhan 4. Bipin Rawat  
 27. The Harshacharita is a biography of Harshavardhana, the ruler of Kannauj, composed in Sanskrit by his court poet, \_\_\_\_\_.  
 1. Banabhatta 2. Kamban 3. Dandin 4. Jinsena  
 28. Who was the President of the World Bank Group as of January, 2020?  
 1. Paul Wolfowitz 2. David Malpass  
 3. Jim Yong Kim 4. Robert Zoellick  
 29. The Gol Gumbad (Gumbaz) of \_\_\_\_\_ is the mausoleum of Muhammad Adil Shah.  
 1. Bijapur 2. Delhi 3. Agra 4. Allahabad  
 30. Private ownership of the means of production is a feature of a \_\_\_\_\_ economy.  
 1. socialist 2. dual 3. capitalist 4. mixed  
 31. \_\_\_\_\_ was the capital of Magadha before the 4th century BCE.  
 1. Mathura 2. Pataliputra 3. Varanasi 4. Rajagaha  
 32. Asia's largest wholesale spice market is located in \_\_\_\_\_.  
 1. Delhi 2. Kolkata 3. Ahmedabad 4. Bengaluru  
 33. The Vedic Civilisation in India flourished along the river \_\_\_\_\_.  
 1. Godavari 2. Saraswati 3. Tapi 4. Narmada  
 34. The 14th Dalai Lama resides in \_\_\_\_\_.  
 1. Gangtok 2. Kalimpong  
 3. Dharamsala 4. Shillong  
 35. In May 2019, the International Monetary Fund agreed to bail out \_\_\_\_\_ with a fund of \$6 billion.

1. India 2. Bangladesh  
 3. Pakistan 4. Nepal  
 36. In the 4th century BCE, the capital of Magadha was shifted to \_\_\_\_\_.  
 1. Panipat 2. Varanasi 3. Pataliputra 4. Mathura  
 37. The \_\_\_\_\_ lake in Gujarat was an artificial reservoir built during the rule of the Mauryas.  
 1. Pushkar 2. Lonar  
 3. Loktak 4. Sudarshana  
 38. Which of the following is NOT a folk dance belonging to the union territory of Jammu and Kashmir?  
 1. Dhimal 2. Hafiza 3. Dangi 4. Rouf  
 39. The Biraja Temple, the Rajarani Temple and the Samaleswari Temple are all located in \_\_\_\_\_.  
 1. Odisha 2. Tamil Nadu 3. Assam 4. Kerala  
 40. Who among the following is an Indian Olympic archer and Padma Shri winner?  
 1. Balbir Singh Dosanjh 2. Bajrang Punia  
 3. Limba Ram 4. Kidambi Srikanth  
 41. King Harshavardhana ascended the throne of Thaneshwar and Kannauj on the death of his brother, \_\_\_\_\_.  
 1. Rajyavardhana 2. Chandravardhana  
 3. Indravardhana 4. Suryavardhana  
 42. Planetary scientists call the thin gaseous envelope around the Moon as the \_\_\_\_\_.  
 1. lunar endosphere 2. lunar thermosphere  
 3. lunar stratosphere 4. lunar exosphere  
 43. Xerophthalmia is caused due to the deficiency of vitamin \_\_\_\_\_.  
 1. A 2. K 3. C 4. D  
 44. Which Article of the Indian Constitution prohibits discrimination on the grounds of religion, race, caste, sex and place of birth?  
 1. Article 25 2. Article 19 3. Article 23 4. Article 15  
 45. Article 17 of the Constitution of India deals with the abolition of \_\_\_\_\_.  
 1. slavery 2. sati  
 3. titles 4. untouchability  
 46. In April 2019, scientists in \_\_\_\_\_ produced the world's first 3D printed heart using human tissue.  
 1. Ethiopia 2. Israel 3. Kenya 4. Croatia  
 47. \_\_\_\_\_ expansion makes the Eiffel Tower taller during summers.  
 1. Chemical 2. Thermal  
 3. Gravitational 4. Gradient  
 48. According to the United Nations' World Economic Situation and Prospects Report, 2019, the Indian economy is expected to expand by \_\_\_\_\_ in 2020.  
 1. 7.8% 2. 7.6% 3. 7.2% 4. 7.1%  
 49. The major component of modern Olympic gold medals is \_\_\_\_\_.  
 1. Silver 2. Copper 3. Bronze 4. Gold  
 50. In biological terms, \_\_\_\_\_ is a relationship between two organisms in which one organism benefits and the other is unaffected.  
 1. Amensalism 2. Commensalism  
 3. Parasitism 4. Mutualism

### Quantitative Aptitude

51. The given table represents the number of computers sold by four dealers A, B, C and D during the first six months of 2016. Study the table carefully and answer the question that follows.

Month \ Dealer	A	B	C	D
January	102	92	95	107
February	94	96	104	106
March	85	94	100	90
April	108	97	99	96
May	98	102	100	89
June	95	108	102	91

The number of months, in which the number of computers sold by dealer B was less than the average number of computers sold by dealer C over six months, was:

1. 5      2. 4      3. 2      4. 3
52. The average of twelve numbers is 45.5. The average of the first four numbers is 41.5 and that of the next five numbers is 48. The 10<sup>th</sup> number is 4 more than the 11<sup>th</sup> number and 9 more than the 12<sup>th</sup> number. What is the average of the 10<sup>th</sup> and 12<sup>th</sup> numbers?  
1. 46.5      2. 47.8      3. 46      4. 47
53. In  $\Delta ABC$ ,  $\angle A = 90^\circ$ , M is midpoint of BC and D is a point on BC such that  $AD \perp BC$ . If  $AB = 7$  cm and  $AC = 24$  cm, then  $AD : AM$  is equal to:  
1. 168 : 275      2. 24 : 25      3. 32 : 43      4. 336 : 625
54. The circumference of the base of a conical tent is 66 m. If the height of the tent is 36 m, what is the area (in m<sup>2</sup>) of the canvas used in making the tent? (Take  $\pi = \frac{22}{7}$ )  
1. 1155      2. 1237.5      3. 1171.5      4. 1254
55. If  $2x + 1$ , 2 and 5 are in proportion, then what is the mean proportional between  $3.5(1 - x)$  and  $8(1 + x)$ ?  
1. 5.5      2. 4.25      3. 5.25      4. 4.5
56. A trader allows a discount of 18% on the marked price of an article. How much percentage above the cost price must he mark it so as to get a profit of 6.6%?  
1. 30      2. 28      3. 25      4. 24
57. When 732 is divided by a positive integer  $x$ , the remainder is 12. How many values of  $x$  are there?  
1. 19      2. 20      3. 18      4. 16
58. In  $\Delta ABC$ ,  $\angle B = 68^\circ$  and  $\angle C = 32^\circ$ . Sides AB and AC are produced to point D and E, respectively. The bisectors of  $\angle DBC$  and  $\angle BCE$  meet at F. What is the measure of  $\angle BFC$ ?  
1.  $55^\circ$       2.  $39^\circ$       3.  $50^\circ$       4.  $65^\circ$
59. If  $a + b + c = 11$ ,  $ab + bc + ca = 3$  and  $abc = -135$ , then what is the value of  $a^3 + b^3 + c^3$ ?  
1. 823      2. 929      3. 925      4. 827
60. If  $5x + \frac{1}{3x} = 4$ , then what is the value of  $9x^2 + \frac{1}{25x^2}$ ?  
1.  $\frac{174}{125}$       2.  $\frac{144}{125}$       3.  $\frac{114}{25}$       4.  $\frac{119}{25}$
61. The value of  $\frac{7 - [4 + 3(2 - 2 \times 2 + 5) - 8] \div 5}{2 \div 2 \text{ of } (4 + 4 \div 4 \text{ of } 4)}$  is:  
1. 26      2.  $25\frac{1}{2}$       3.  $8\frac{1}{2}$       4. 24
62. ABCD is a cyclic quadrilateral in which  $AB = 16.5$  cm,  $BC = x$  cm,  $CD = 11$  cm,  $AD = 19.8$  cm, and BD is bisected by AC at O. What is the value of  $x$ ?  
1. 12.4 cm      2. 13.8 cm      3. 13.2 cm      4. 12.8 cm

63. If  $\sec \theta - \tan \theta = \frac{x}{y}$ , ( $0 < x < y$ ) and  $0^\circ < \theta < 90^\circ$ , then  $\sin \theta$  is equal to:  
1.  $\frac{x^2 + y^2}{2xy}$       2.  $\frac{2xy}{x^2 + y^2}$       3.  $\frac{y^2 - x^2}{x^2 + y^2}$       4.  $\frac{x^2 + y^2}{y^2 - x^2}$

64. If  $5 \sin^2 \theta + 14 \cos \theta = 13$ ,  $0^\circ < \theta < 90^\circ$ , then what is the value of  $\frac{\sec \theta + \cot \theta}{\operatorname{cosec} \theta + \tan \theta}$ ?

1.  $\frac{9}{8}$       2.  $\frac{31}{29}$       3.  $\frac{21}{28}$       4.  $\frac{32}{27}$

65. In  $\Delta ABC$ ,  $AB = AC$ . A circle drawn through B touches AC at D and intersects AB at P. If D is the mid point of AC and  $AP = 2.5$  cm, then AB is equal to:

1. 9 cm      2. 7.5 cm      3. 12.5 cm      4. 10 cm

66. The given table represents the number of computers sold by four dealers A, B, C and D during the first six months of 2016. Study the table carefully and answer the question that follows.

Month \ Dealer	A	B	C	D
January	102	92	95	107
February	94	96	104	106
March	85	94	100	90
April	108	97	99	96
May	98	102	100	89
June	95	108	102	91

What is the ratio of the total number of computers sold by dealer A in February, April and May to the total number of computers sold by dealer D in March, May and June?

1. 15 : 13      2. 10 : 9      3. 20 : 27      4. 6 : 5

67. A can complete a certain work in 30 days. B is 25% more efficient than A and C is 20% more efficient than B. They all worked together for 3 days. B alone will complete the remaining work in:

1. 15 days      2. 12 days      3. 20 days      4. 18 days

68. The value of  $\frac{\tan 30^\circ \operatorname{cosec} 60^\circ + \tan 60^\circ \sec 30^\circ}{\sin^2 30^\circ + 4 \cot^2 45^\circ - \sec^2 60^\circ}$  is:

1.  $\frac{2}{3}$       2.  $\frac{32}{3}$       3.  $\frac{8}{3}$       4.  $\frac{32}{99}$

69. On simplification,

$$\frac{x^3 - y^3}{x[(x + y)^2 - 3xy]} \div \frac{y[(x - y)^2 + 3xy]}{x^3 + y^3} \times \frac{(x + y)^2 - (x - y)^2}{x^2 - y^2}$$

is equal to:

1. 4      2. 1      3.  $\frac{1}{2}$       4.  $\frac{1}{4}$

70. The given table represents the number of computers sold by four dealers A, B, C and D during the first six months of 2016. Study the table carefully and answer the question that follows.

Month \ Dealer	A	B	C	D
January	102	92	95	107
February	94	96	104	106
March	85	94	100	90
April	108	97	99	96
May	98	102	100	89
June	95	108	102	91

The total number of computers sold by dealer B in April, May and June is what percentage of the total number of computers sold by all the dealer in February and April?

1.  $50\frac{7}{8}$       2.  $43\frac{6}{7}$       3.  $48\frac{5}{7}$       4.  $38\frac{3}{8}$

71. The given table represents the number of computers sold by four dealers A, B, C and D during the first six months of 2016. Study the table carefully and answer the question that follows.

Month \ Dealer	A	B	C	D
January	102	92	95	107
February	94	96	104	106
March	85	94	100	90
April	108	97	99	96
May	98	102	100	89
June	95	108	102	91

The total number of computers sold by dealer A during February to June is what percentage more than the total number of computers sold by all the dealers in June? (correct to one decimal place)

1. 17.5      2. 25.3      3. 24.4      4. 21.2
72. A person buys 5 tables and 9 chairs for ₹ 15,400. He sells the tables at 10% profit and chairs at 20% profit. If his total profit on selling all the tables and chairs is ₹ 2,080, what is the cost price of 3 chairs?
1. ₹ 1,890      2. ₹ 1,740      3. ₹ 1,800      4. ₹ 1,860
73. A boat can go 3 km upstream and 5 km downstream in 55 minutes. It can also go 4 km upstream and 9 km downstream in 1 hour 25 minutes. In how much time (in hours) will it go 43.2 km downstream?
1. 4.8      2. 5.4      3. 3.6      4. 4.4
74. Sonu saves 15% of her income. If her income increases by 20% and she still saves the same amount as before, then what is the percentage increase in her expenditure? (correct to one decimal place)
1. 22.8      2. 23.5      3. 23.8      4. 24.2
75. What is the compound interest on a sum of ₹ 12,000 for  $2\frac{5}{8}$  years at 8% p.a., when the interest is compounded annually?
1. ₹ 2,697      2. ₹ 2,654      3. ₹ 2,712      4. ₹ 2,642

### English Comprehension

76. Select the most appropriate meaning of the given idiom. Back to square one
1. Neglect something      2. Draw a square  
3. Move ahead      4. Come to the original point
77. Select the most appropriate word to substitute the underlined word of the given sentence. If substitution is not required, select 'No improvement'.  
To fight on the battlefield for the sake of one's country needs a great strongness.
1. a lots of strength      2. great courage  
3. No improvement      4. the greatest strongness
78. Select the wrongly spelt word.
1. Consumation      2. Chronology  
3. Compromise      4. Competence
79. Select the correct active form of the given sentence. This beautiful story was written by Maya.
1. Maya writes this beautiful story.

2. Maya wrote this beautiful story.  
3. Maya is writing this beautiful story.  
4. Maya was writing this beautiful story.
80. Select the antonym of the given word.  
Liberty
1. Convenience      2. Independence  
3. Deliverance      4. Dependence
81. Select the wrongly spelt word.
1. Tamarind      2. Trespure      3. Turmoil      4. Truthful

### Comprehension:

In the following passage, some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank.

'A stitch in time saves nine'. This wise saying suggests that an (1) \_\_\_\_\_ action taken on time to rectify an error rules (2) \_\_\_\_\_ the possibility of accumulation of such errors and future (3) \_\_\_\_\_. Wisdom, therefore lies in correcting the error as soon as it is (4) \_\_\_\_\_. There is no point in allowing the (5) \_\_\_\_\_ to grow and then take hasty actions to set things right.

82. Select the most appropriate option for blank number 1.
1. superficial      2. appropriate  
3. wrong      4. opposite
83. Select the most appropriate option for blank number 2.
1. for      2. out      3. in      4. at
84. Select the most appropriate option for blank number 3.
1. damages      2. advantages      3. facilities      4. qualities
85. Select the most appropriate option for blank number 4.
1. managed      2. invented      3. proposed      4. discovered
86. Select the most appropriate option for blank no. 5.
1. remedy      2. parody      3. melody      4. malady
87. Select the most appropriate word to fill in the blank. She \_\_\_\_\_ on paying the bill at the restaurant.
1. suggested      2. insisted      3. requested      4. offered
88. Select the synonym of the given word. Prevent
1. Avert      2. Allow      3. Construct      4. Provoke
89. Select the most appropriate meaning of the given idiom. Dead heat
1. Strong opposition to one's ideas  
2. Close contest that ends in a tie  
3. A deadly blast of hot air      4. A strong heat wave
90. Given below are four jumbled sentences. Out of the given options, pick the one that gives their correct order.
- A. "We are going to the market," declared Reetu and Geetu.  
B. "Where are you going?" the father asked.  
C. "Take your umbrella, it is going to rain," the mother said.  
D. "Yes, definitely. We will," replied the two..
1. DCAB      2. BCDA      3. ABDC      4. BACD
91. Select the most appropriate segment to substitute the underlined segment of the given sentence. If substitution is not required, select 'No improvement'.  
The animal resembled with a cat.
1. No improvement      2. resembled by  
3. resembled to      4. resembled
92. Select the correct direct form of the given sentence. The teacher commanded the students not to shout.
1. The teacher told to the students, "You must not shout."  
2. The teacher said to the students, "Don't shout."  
3. The teacher says to the students, "Do not shout."  
4. The teacher said to the student, "You should not shout."
93. In the sentence, identify the segment which contains the grammatical error.  
The boy which stole the money was caught by the police.

1. stole the money                      2. by the police  
 3. was caught                            4. The boy which
94. In the sentence, identify the segment which contains the grammatical error.  
 Saraswati college has maintained its reputation as one of the best college in the country.  
 1. one of the best college    2. in the country  
 3. Saraswati college has maintained  
 4. its reputation as
95. Select one word for the following group of words.  
 Morals that govern one's behaviour  
 1. Psychology   2. Ethics    3. Attitude   4. Intuition
96. Select the synonym of the given word.  
 Revere  
 1. Respect    2. Repeat    3. Enjoy    4. Condemn
97. Select the most appropriate word to fill in the blank.

- The groom stood before the \_\_\_\_\_ for the wedding ceremony at the church.  
 1. altar    2. alter    3. atlas    4. attic
98. Select one word for the following group of words.  
 Open refusal to obey orders  
 1. Obedience   2. Defiance   3. Compliance   4. Adherence
99. Given below are four jumbled sentences. Out of the given options, pick the one that gives their correct order.  
 A. Eventually, she overcame adversities and achieved.  
 B. She engaged herself in 'earn while you learn', finance scheme in her college.  
 C. She needed financial support to complete her graduation.  
 D. Rama was a very poor girl.  
 1. DCBA    2. CBDA    3. ADCB    4. ABCD
100. Select the antonym of the given word.  
 Broad  
 1. Wide    2. Large    3. Long    4. Narrow

## Answer Key

1. (1)	2. (2)	3. (3)	4. (1)	5. (4)	6. (4)	7. (3)	8. (3)	9. (3)	10. (2)	11. (1)	12. (2)	13. (3)	14. (2)	15. (1)
16. (3)	17. (2)	18. (3)	19. (3)	20. (1)	21. (1)	22. (2)	23. (3)	24. (4)	25. (4)	26. (2)	27. (1)	28. (2)	29. (1)	30. (3)
31. (4)	32. (1)	33. (2)	34. (3)	35. (3)	36. (3)	37. (4)	38. (3)	39. (1)	40. (3)	41. (1)	42. (4)	43. (1)	44. (4)	45. (4)
46. (4)	47. (2)	48. (4)	49. (1)	50. (2)	51. (2)	52. (1)	53. (4)	54. (2)	55. (3)	56. (1)	57. (2)	58. (3)	59. (4)	60. (3)
61. (2)	62. (3)	63. (3)	64. (2)	65. (4)	66. (2)	67. (1)	68. (2)	69. (1)	70. (4)	71. (4)	72. (3)	73. (3)	74. (2)	75. (1)
76. (4)	77. (2)	78. (1)	79. (2)	80. (4)	81. (2)	82. (2)	83. (2)	84. (1)	85. (4)	86. (4)	87. (2)	88. (1)	89. (2)	90. (4)
91. (4)	92. (2)	93. (4)	94. (1)	95. (2)	96. (1)	97. (1)	98. (2)	99. (1)	100. (4)					

## Answers with Explanations

### General Intelligence and Reasoning

**1. Option (1) is correct.**

We have to arrange the word according to the English alphabetical order.

First three letters are the same in all words; now the fourth letter of 1<sup>st</sup> is L, 2<sup>nd</sup> is I, 3<sup>rd</sup> is M, 4<sup>th</sup> is I, 5<sup>th</sup> is I. So, the order of these alphabets in English will be IILMM. Now, since I comes before L and M, from this, 1<sup>st</sup>, 3<sup>rd</sup> and 5<sup>th</sup> cannot be the first word. Now, we have only 2<sup>nd</sup> and 4<sup>th</sup>. Now, we will check the 5<sup>th</sup> letter of 2<sup>nd</sup> and 4<sup>th</sup>, which are N and N, so here we cannot decide because both letters are the same. Now, we will check the 6<sup>th</sup> letter of 2<sup>nd</sup> and 4<sup>th</sup>, which is A and A, which is also the same, and now check the 7<sup>th</sup> letter, which is T and L, so the word having the 7<sup>th</sup> letter L will be the first word, which is 4<sup>th</sup>, and also with this option, 3 will get eliminated.

Now, check the 2<sup>nd</sup> word, which obviously will be 2<sup>nd</sup> word because we have already discussed above that the word having I as the 5<sup>th</sup> letter will be either at the first or at the 2<sup>nd</sup>. Hence, the arrangement must be 4, 2, which is the only option 1. (NOTE: All the other options will be eliminated.)

**2. Option (2) is correct.**

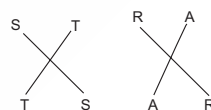
Taking column wise we get, 1<sup>st</sup> term<sup>2</sup> + 3<sup>rd</sup> term = 2<sup>nd</sup> term  
 $7^2 + 4 = 53$   
 $11^2 + 6 = 127$   
 $14^2 + 3 = 199$   
 Hence, 199 is the missing number.

**3. Option (3) is correct.**

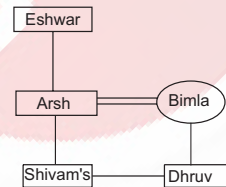
Given that

In the same way, TH will be HT and UR will be RU, etc.

In the given options, 1<sup>st</sup> and 2<sup>nd</sup> will be eliminated, and the last two letters AY should be written as YA, which is in option 3<sup>rd</sup>.



**4. Option (1) is correct.**



Rectangle represents males and circle represents females. Hence, Bimla is the Daughter-in-law of Eshwar.

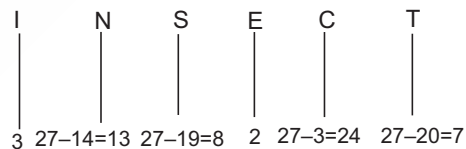
**5. Option (4) is correct.**

Consonants are coded according to their reverse position value in the English alphabetical series. For example, L is placed at 12<sup>th</sup> and its reverse positional value is  $27 - 12 = 15$ <sup>th</sup>.

And, vowels are A, E, I, O, U

A → 1, E → 2, I → 3, O → 4, and U → 5

Therefore INSECT can be written as



Hence, 3, 13, 8, 2, 24, 7 is the correct answer.

**6. Option (4) is correct.**

Given that: Diagram of different categories of persons.

To Find: Male clowns Ringmasters.

In the given diagram, triangle represents clowns, rectangle represents male and square represents ringmasters.

From the diagram, first we will find males which are in the rectangle viz. 3, 19, 17, 5, 11, 15. Now, the persons in the category of clowns are 5, 17, 15, 21. Now, check for ringmaster 13, 19, 5, 11, 17.

Now, from all three finding the common people are 5,17, 5 which will not be included because 5 is also in a circle in which acrobat cannot be included .

Hence, the only number 17 is common in all three which is the correct answer.

7. **Option (3) is correct.**

When the mirror is placed on the right side of the image, then all the objects positioned on the left side will appear on the right side, and object placed at right side, will appear on the left side.

8. **Option (3) is correct.**

Given that: 109, 114, 139

The pattern followed here is:

1<sup>st</sup> term + (5)<sup>1</sup> = 2<sup>nd</sup> term & 2<sup>nd</sup> term + (5)<sup>2</sup> = 3<sup>rd</sup> term.

$$109 + 5 = 114$$

$$114 + 25 = 139$$

Similarly, upon checking option (3), we get

$$313 + 5 = 318$$

$$\text{And } 318 + 25 = 343$$

Hence, it is the correct answer.

9. **Option (3) is correct.**

On checking option (3), we get  $(12 \times 7 - 6) \div 13 = 6$

Using BODMAS, rule, LHS =  $\frac{(84 - 6)}{13}$

$$\frac{78}{13} = 6$$

Hence, LHS = RHS

10. **Option (2) is correct.**

Let the total couples = 100

Couples having only one child = 20

Now, remaining couples = 80

Couples with two children =  $\frac{45}{100} \times 80 = 36$

Couples having three or more children = Total couples - (Couples having one children + couples having two children)  $100 - (20 + 36) = 44$

Hence, couples having three or more children are 44%.

11. **Option (1) is correct.**

D	A	C
+3	-4	+5
G	W	H
+3	-4	+5
J	S	M
+3	-4	+5
M	O	R
+3	-4	+5
P	K	W

Hence, PKW is correct answer.

12. **Option (2) is correct.**

Virtue, Probity and Righteousness have the same meaning, which means the quality of having strong moral principles. Whereas Conduct means the manner in which a person behaves in a particular situation.

Hence, 'Conduct' is the correct answer.

13. **Option (3) is correct.**

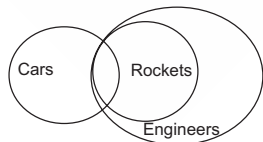
17, 20, 15, 22, 13, ?

This is the double series in which the difference between alternative number is same.

For example,  $17 - 15 = 2$

$15 - 13 = 2$  and  $20 + 2 = 22$  and  $22 + 2$  will be equal to 24.

14. **Option (2) is correct.**



From the given diagram, it clearly shows that both I and II follow.

15. **Option (1) is correct.**

$$\begin{aligned} \text{Using option (1): } & 225 \div 5 \times 3 + 5 - 7 \\ & = 45 \times 3 + 5 - 7 \\ & = 135 + 5 - 7 \\ & = 133 \end{aligned}$$

Hence, LHS = RHS.

16. **Option (3) is correct.**

WSWWSSWWWSWSWWWWWSSSS

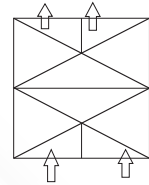
From option 2: WSWWSWWWWWSSSSWWWWWSSSS

From option 3: WS WWSS WWWSSS WWWWWWSSSS

In this, a proper pattern is followed.

17. **Option (2) is correct.**

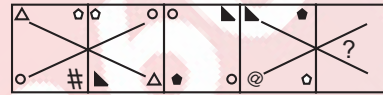
Each rectangle having two diagonals consists of  $2 \times 4 = 8$  triangles and there are 2 rectangles having total of 16 triangles and then count randomly which is shown in the below diagram.



Hence, there will be a total 22 triangles.

18. **Option (3) is correct.**

The triangle is rotated by 180° and circle is also rotated by 180°, in the same, highlighted triangle must be rotated by 180°, similarly, @ should be rotated by 180°.



19. **Option (3) is correct.**

The pattern is as follows:

$$(\text{First number} \times 4) + \frac{(\text{First number})}{4} = \text{Second number}$$

$$52 \times 4 = 208$$

$$\frac{52}{4} = 13$$

$$208 + 13 = 221$$

$$20 \times 4 = 80$$

$$\frac{20}{4} = 5$$

$$80 + 5 = 85$$

Similarly,

20. **Option (1) is correct.**

'a' is facing opposite 'c'. 'b' is facing opposite 'e' and 'd' is facing opposite 'f'.

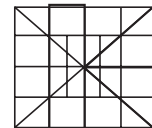
The figure that cannot be formed is 1 because b is facing c, not adjacent.

21. **Option (1) is correct.**

In the given pattern, there are two triangles in each rectangle, there are 4 rectangles, and if we unfold the paper, then left will be right and right becomes left and bottom becomes top and top becomes bottom.

22. **Option (2) is correct.**

It actually depends upon the visibility power that will come from practicing similar questions.



23. **Option (3) is correct.**

Jackal is the sound of Howl, in the same way, Patter is the sound of Rain.

24. **Option (4) is correct.**

Hives are the structures inside bee colonies. Similarly, Burrow is a hole where Hare lives.

**25. Option (4) is correct.**

From option 1:	T	-1	S	-1	R
From option 2:	T	-1	S	-1	R
From option 3:	N	-1	M	-1	L
From option 4:	F	+1	G	+1	H

---

**General Awareness**


---

**26. Option (2) is correct.**

On December 31, 2019, Lt. Gen. Manoj Mukund Naravane assumed command as the Chief of Army Staff. As the 28th Chief of Army Staff, General Manoj Mukund Naravane assumed command. After three years as Army Chief, General Bipin Rawat retired, and he took his place. General Mukund Naravane was named Vice-Chief of Army Staff on September 1 before becoming Chief of Army Staff. Before that, he was in charge of the Army's Eastern Command, which looks after India's almost 4,000 km border with China.

**27. Option (1) is correct.**

The Harshacharita is a biography of Harsha-varadhana in Sanskrit, the monarch of Kannauj, written by his court poet, Banabhatta. The works of Banabhatta titled Harsacharita ("The Deeds of Harsha") are the main source of information on Harsha. The painting portrays the court and era of the northern Indian Buddhist ruler Harsha. The biography of Harsha by Bana offers insightful details about the time period, but with some exaggeration in the emperor's favour. The work has a great deal of liveliness and a wealth of finely observed detail. It is written in the ornate kavya style, which involves extraordinarily long constructs, detailed descriptions and poetic tropes. Harsha, a poet in his own right, wrote the Sanskrit poetry pieces Nagananda, Ratnavali and Priyadarsika.

**28. Option (2) is correct.**

As of January 2020, David Malpass was the President of the World Bank Group. On April 5, 2019, the Board of Executive Directors of the World Bank Group selected David R. Malpass as its 13th president. He was given a five-year imprisonment on April 9. Prior to this, Mr Malpass worked for the United States as Under Secretary of the Treasury for International Affairs. The World Bank is a type of cooperative made up of 189 members countries. The Board of Governors is the top decision-makers of the World Bank.

**29. Option (1) is correct.**

The Gol Gumbad (Gumbaz) in Bijapur is Muhammad Adil Shah's mausoleum. The well-known landmark of Vijayapura or Bijapur is Gol Gumbaz. Yaqut of Dabul, an architect, built this mausoleum for Mohammed Adil Shah in 1656. The heavy bracketed cornice below the parapet and the seven-story octagonal spires of its four corners are its most striking characteristics. It is only surpassed in size by St. Peter's Basilica in Rome as the largest dome ever constructed. The central chamber of this monument, where each sound is amplified seven times, is particularly captivating.

**30. Option (3) is correct.**

A capitalist economy includes private ownership of the means of production. Capitalism is an economic system in which productive firms are owned by individuals. The production of goods and services is based on supply and demand forces of market, and thus it is known as a market economy, as opposed to a planned economy or command economy. The desire to make profit is fundamental feature of capitalism. The state owns the means of production in socialism, state-owned enterprises seek to maximise social welfare rather than profits.

**31. Option (4) is correct.**

Before the 4th century BCE, Rajgir or Rajgriha was the capital of Magadha. Around 600 BCE, the capital of the Magadha kingdom was known as 'Rajgriha' in Sanskrit and 'Rajagaha' in

Pali. This city was surrounded by mountain rings. According to the Ramayana, this capital was founded by King Vasu and was thus known as Vasumati. Around the time of Buddha, Rajgriha was the capital of Magadh king Bimbisara and was known for its wealth and grandeur. When the capital of the Magadha kingdom was relocated to Pataliputra, the present-day Patna, Rajgir's political importance declined. Mahavira is said to have spent 14 rainy seasons in Rajgir and Nalanda between 527 and 497 BCE. On Vipula hill, he delivered his first sermon.

**32. Option (1) is correct.**

Delhi is a centre of Asia's largest wholesale spice market. Khari Baoli in Delhi is Asia's largest spice market. Every day, a wide variety of both local and exotic spices can be found trading here. It is situated at the western end of Chandni Chowk, near the Red Fort and the Jama Masjid. It first appeared in the 17th century, during the Mughal era. The saltwater step-well inspired the name Khari Baoli, where Khari stands for salty and Baoli stands for step-well. The stepwell was dedicated during the reign of Islam Shah, Sher Shah Suri's son.

**33. Option (2) is correct.**

The Vedic Period is thought to have lasted between 1500 and 500 BC. The time period is divided into two parts: the Early Vedic Period (1500 BC – 1100 BC) and the Later Vedic Period (1100 BC – 500 BC). After the end of the Indus-Valley Civilisation, the period is supposed to flourish. The Vedic civilization thrived along the Saraswati River. The Vedas, Hindu sacred texts from which the civilization is traced, give rise to the period's name. The civilisation is thought to be a collection of various tribes. The Bharata tribe lived in the upper reaches of the Saraswati River, while the Puru tribe lived to the south.

**34. Option (3) is correct.**

Dharamsala is residence of the 14th Dalai Lama. The 14th Dalai Lama is Tenzin Gyatso. He is Tibet's spiritual leader. He was born on July 6, 1935, to a farming family in Taktser, Amdo, north-eastern Tibet. Chinese troops crushed the Tibetan national uprising in Lhasa in 1959. As a result, the Dalai Lama was forced to flee to India and live in exile. Since then, he resides in Dharamsala, India. Tibetan Buddhists consider the Dalai Lamas to be manifestations of Avalokiteshvara or Chenrezig. Chenrezig, also known as Avalokiteshvara, is the patron saint of Tibet and the Bodhisattva of Compassion.

**35. Option (3) is correct.**

The International Monetary Fund agreed to bail out Pakistan with a \$6 billion bailout fund in May 2019. The International Monetary Fund approved a \$6 billion bailout package to help Pakistan's economy "return to sustainable growth" on July 3, 2019. The agreement would be the 13th bailout since the late 1980s. Inflation reaching more than 8%, the rupee losing a third of its value in a year, and foreign exchange reserves barely enough to cover two months of exports forced Pakistan to seek assistance from the IMF. Pakistan already owes the institution \$5.8 billion from previous bailouts and has only completed one of its previous programmes. Pakistan's current account deficit is soaring, and the country is in an existential crisis.

**36. Option (3) is correct.**

Magadha's capital was relocated to Patali-putra in the fourth century BCE. Because of its strategic location, the successors of Ajatshatru, Udayabhadr, or Udayin relocated the Magadha kingdom's capital from Rajgriha to Pataliputra. It remained the capital until around 600 CE. Patliputra is the ancient name for Patna, a city in the state of Bihar that served as the capital of Magadha for over a thousand years. For the first time, Chandragupta Maurya, the founder of the Mauryan dynasty, united all of India's small kingdoms under one rule.

**37. Option (4) is correct.**

During the Maurya rule, the Sudarshana Lake in Gujarat was built. Sudarshana Lake was a man-made reservoir. We know

about it from a rock inscription written in Sanskrit during the second century CE to commemorate the achievements of the Shaka ruler Rudradaman. The lake, complete with embankments and water channels, was built by a local government during the Mauryas' kingdom according to the inscription. A terrible storm, however, broke the embankments and water gushed out of the lake.

**38. Option (3) is correct.**

Dangi is NOT a folk dance from the union territory of Jammu and Kashmir. Dangi dance is a popular folk dance in Himachal Pradesh. Himachal Pradesh is rich in natural beauty and culture, and one of them is folk dances. Dangi dance is best known in the Himachal Pradesh region of Chamba. Dangi folk dance is based on the oldest folklore of Himachal Pradesh. The dance is performed during the harvest season. It is split into two sections: love and business. A brave and handsome kind fell in love with a common girl in folklore with a love theme. King's falling in love with commoners was unusual, so it was significant.

**39. Option (1) is correct.**

The Biraja Temple, the Rajarani Temple, and the Samaleswari Temple are located in Odisha. Biraja Temple also known as Viraja Kshetra. It is an ancient Hindu temple in Odisha's Jajpur district. The present temple was constructed in the 13th century. It is located in the Jajpur township, approximately 125 km north of Bhubaneswar. The main idol is Devi Durga, who is also known as Viraja.

**40. Option (3) is correct.**

Limba Ram is an Olympic archer from India and a Padma Shri recipient. Limba Ram was an Olympian, representing India in 1988, 1992 and 1996 Olympic. After winning the Senior National Championships 1988 at the Seoul Olympics in 1988 and start successful career. He was also a former coach for India's National Archery Team. His achievements helped India finish fourth at the Beijing Asian Games in 1990, and he equalled Takayoshi Matsushita's world record in the 30 metres event at the Beijing Asian Archery Championships in 1992. In the 1992 Olympics in Barcelona, he was one point away from a bronze medal. In 1991, he received the Arjuna Award for his achievements.

**41. Option (1) is correct.**

On the death of his brother, Rajyavardhana, King Harshavardhana ascended to the thrones of Thaneshwar and Kannauj. Harsha ascended to the throne around the beginning of the seventh century, around 606 AD. Harshavardhana had established his kingdom in northern India by 612 AD. Harshavardhana is well-known for his religious tolerance, as well as his capable administration and diplomatic relations. He maintained diplomatic relations with China and dispatched envoys who exchanged ideas with the Chinese rulers and increased their understanding of one another.

**42. Option (4) is correct.**

The thin gaseous envelope that surrounds the Moon is known as the 'Lunar exosphere' by planetary scientists. Because there are so few and far between molecules in the air here, they rarely come into contact with one another. Nonetheless, the gases found around the Moon have a significant impact on the conditions near the surface. The lunar exosphere contains  $10^4$  to  $10^6$  atoms per cubic centimetre of volume, whereas the Earth's atmosphere near the mean sea level contains  $10^{19}$  atoms per cubic centimetre. Argon-40 ( $^{40}\text{Ar}$ ), an isotope of the noble gas Argon, is an important component of the lunar exosphere. It is formed by the radioactive decay of Potassium-40 ( $^{40}\text{K}$ ), which has a half-life of  $1.2 \times 10^9$  years.

**43. Option (1) is correct.**

Xerophthalmia is caused by a vitamin A deficiency. Xerophthalmia is an early vitamin A deficiency condition

in which the cornea keratinises, becomes opaque, and forms dry, scaly layers of cells. Infection is possible in the affected cornea. If left untreated, xerophthalmia can lead to irreversible blindness. Xerophthalmia is still a major problem in developing countries and a leading cause of preventable blindness. Vitamin A is metabolised in the eye to form rhodopsin (retinal visual pigment). The first step in the visual process is the action of light on rhodopsin.

**44. Option (4) is correct.**

The Indian Constitution, in Article 15, prohibits discrimination against any citizen on the basis of religion, race, caste, gender, or place of birth. Article 14 of the Indian Constitution guarantees equality before the law or equal protection within Indian territory and prohibits unreasonable discrimination between individuals.

**45. Option (4) is correct.**

Article 17 of the Indian Constitution addresses the abolition of untouchability. Article 17 prohibits the practice of 'untouchability' in any form. The imposition of any disability resulting from untouchability is a criminal offence punishable by law. It falls under the right to equality enshrined in Articles 14–18 of the constitution. It is worth noting that the term "untouchability" is not defined in the constitution. However, in a broader sense, untouchability refers to the social disadvantages imposed on certain classes of people due to their castes. The Untouchability (Offences) Act of 1955 was amended and renamed the Protection of Civil Rights Act of 1955 in 1976.

**46. Option (4) is correct.**

In April 2019, Israeli scientists created the world's first 3D-printed heart out of human tissue. The heart is printed in about three hours by a team of Tel Aviv University researchers. The heart is too small, measuring about 2.5 centimetres in diameter, or the size of a rabbit's heart. However, it is the first to be printed with all blood vessels, ventricles, and chambers. The heart employs bio-ink derived from the patient's own biological materials. The tiny organ is regarded as a significant breakthrough in the on going search for new treatments for heart disease. Previously, scientists were able to 3D-print heart structures devoid of cells or blood vessels. The new 3D-printed heart, on the other hand, contains cells, blood vessels, chambers, and other structures that a heart requires to function normally.

**47. Option (2) is correct.**

During the summer, thermal expansion causes the Eiffel Tower to grow taller. Thermal expansion occurs when a material changes dimensions as a result of temperature changes. Thermal expansion occurs in all materials, including the tower, which is made of puddling iron. From the hottest to the coldest day, the tower expands and contracts by 15 cm. Gustave Eiffel conceived of the plan to build a 300-metre-tall tower as part of the World's Fair preparations in 1889. The tower stands nearly 320 metres tall and weighs approximately 10,100 tonnes. The tower is made of puddling iron rather than steel, as are many modern structures. A total of 7,000 metric tonnes of puddling iron, a precursor to construction steel, were used.

**48. Option (4) is correct.**

The Indian economy is expected to grow by 7.1% in 2020, according to the United Nation's World Economic Situation and Prospects Report for 2019. The UN Department of Economic and Social Affairs (DESA), the UN Conference on Trade and Development (UNCTAD), and the five UN regional commissions publish the World Economic Situation and Prospects (WESP) Report annually. It is the United Nations' flagship publication on global economic trends. This publication is the United Nations definitive report on the state of the world economy. It provides an overview of recent global economic performance, short-term global economic



prospects, and key global economic policy and development issues.

**49. Option (1) is correct.**

Silver is a major component of modern Olympic gold medals. Gold medals are awarded for first place in the Olympics, silver for second place, and bronze for third place. However, these medals are not made of the mineral after which they are named. Silver is used to make both gold and silver medals. The gold medals are then gold-plated. Medal Composition for the Tokyo 2020 Olympics: - Gold Medal: It has over 6 gram of gold plating on pure silver. Silver: It is made entirely of silver. Bronze is made of red brass (95% copper, 5% zinc).

**50. Option (2) is correct.**

Commensalism is a biological relationship between two organisms in which one benefits while the other is unaffected. Inter-specific interactions occur when populations of two different species interact. They could be beneficial, detrimental, or neutral (neither harmful nor beneficial) to one or both of the species. Parasitism occurs when only one species benefits (the parasite) and the interaction is harmful to the other species (host). Predation occurs when only one species benefits (the predator), and the interaction is harmful to the other species (prey). Commensalism occurs when one species benefits while the other is neither benefited nor harmed. Amensalism occurs when one species suffers while the other is unaffected.

**Quantitative Aptitude**

**51. Option (2) is correct.**

Average computers sold by dealer C in 6 months  

$$= \frac{95 + 104 + 100 + 99 + 100 + 102}{6} = 100$$

So, required months = Jan, Feb, Mar, Apr

So, total months = 4

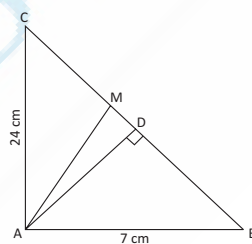
**52. Option (1) is correct.**

The average of 12 numbers = 45.5  
 So, the sum of these 12 numbers =  $45.5 \times 12 = 546$   
 Now, sum of 1<sup>st</sup> 4 numbers =  $41.5 \times 4 = 166$   
 And sum of next 5 numbers =  $48 \times 5 = 240$   
 So, sum of last 3 numbers =  $546 - (166 + 240) = 140$   
 Let the 10<sup>th</sup> number =  $x$   
 Then, 11<sup>th</sup> number =  $x - 4$   
 And 12<sup>th</sup> number =  $x - 9$   
 We have,  $x + x - 4 + x - 9 = 140$   
 $\Rightarrow x = 51$   
 So, average of 10<sup>th</sup> and 12<sup>th</sup> number  

$$= \frac{51 + 42}{2} = 46.5$$

**53. Option (4) is correct.**

By Pythagoras triplet 7-24-25,  
 BC = 25 cm  
 M is midpoint of BC.  
 So, BM = 12.5 cm  
 By triangle property, AM  
 = BM = 12.5 cm  
 AD  $\perp$  BC so,  
 BC  $\cdot$  AD = AC  $\cdot$  AB  
 $25 \times AD = 7 \times 24$   
 AD = 6.72  
 So, AD : AM = 6.72 : 12.5 = 336 : 625



**54. Option (2) is correct.**

The circumference of the base of a conical tent  
 $= 66 \text{ m}$

So,  $2\pi r = 66$   
 $\Rightarrow r = 66 \times \frac{7}{22 \times 2} = \frac{21}{2}$

And  $h = 36 \text{ m}$

We have,  $l = \sqrt{r^2 + h^2}$   
 $= \sqrt{\left(\frac{21}{2}\right)^2 + 36^2}$   
 $= 37.5$

Area of canvas =  $\pi r^2 = \frac{22}{7} \times \frac{21}{2} \times 37.5 = 1237.5 \text{ m}^2$

**55. Option (3) is correct.**

We have,  
 $\Rightarrow \frac{2x+1}{x+2} = \frac{2}{5}$   
 $\Rightarrow 10x + 5 = 2x + 4$   
 $\Rightarrow x = -\left(\frac{1}{8}\right)$

For mean proportional between 3.5 (1 - x) and 8 (1 + x),

Numbers =  $3.5 \left(1 + \frac{1}{8}\right)$  and  $8 \left(1 - \frac{1}{8}\right) = \frac{31.5}{8}$  and 7

So, mean proportion =  $\sqrt{\left(\frac{31.7}{8}\right) \times 7} = 5.25$

**56. Option (1) is correct.**

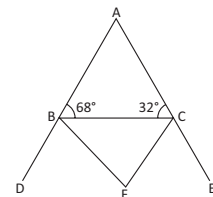
Let the cost price be ₹ 100.  
 So, selling price after a profit of 6.6% =  $100 + 6.6 = ₹ 106.6$   
 Discount = 18%  
 Let the marked price be 100%.  
 Selling price =  $100 - 18 = 82\%$   
 So, 82% of MRP = 106.6  
 $100\% \text{ of MRP} = \frac{106.6 \times 100}{82} = 130$   
 Required percentage =  $\frac{130 - 100}{100} = 30\%$

**57. Option (2) is correct.**

Let the integer =  $x$   
 So,  $732 - 12 = 720$  will be exactly divisible by  $x$ .  
 Factors of 720 =  $2^4 \times 3^2 \times 5^1$   
 Total factors =  $(4 + 1)(2 + 1)(1 + 1) = 5 \times 3 \times 2 = 30$   
 We have combinations of these factors which are more than 12 and maximum 720 because remainder is 12.  
 Combination less than 13 = 1, 2, 3, 4, 5, 6, 8, 9, 10, 12  
 Number of combination less than 13 = 10  
 Number of values of  $x = 30 - 10 = 20$

**58. Option (3) is correct.**

From angle bisector property,  
 $\angle BFC = 90^\circ - \angle A/2$   
 In  $\triangle ABC$ ,  
 $\angle A + \angle B + \angle C = 180^\circ$   
 $\angle A = 180 - 32 - 68 = 80^\circ$   
 $\angle BFC = 90^\circ - \frac{80^\circ}{2}$   
 $\angle BFC = 50^\circ$



**59. Option (4) is correct.**

$$a^3 + b^3 + c^3 = (a + b + c)[(a + b + c)^2 - 3(ab + bc + ac)] + 3abc$$

$$= (11)[(11)^2 - 3(3)] + 3 \times (-135)$$

$$= (11)[112] - 405$$

$$= 1,132 - 405 = 827$$

60. Option (3) is correct.

$$\text{We have, } 5x + \frac{1}{3x} = 4$$

$$\Rightarrow \frac{3}{5} \left( 5x + \frac{1}{3x} \right) = \frac{12}{5}$$

Square both the sides,

$$\Rightarrow \left( 9x^2 + \frac{1}{25x^2} + \frac{6}{5} \right) = \frac{144}{25}$$

$$\Rightarrow \left( 9x^2 + \frac{1}{25x^2} \right) = \frac{144}{25} - \frac{6}{5}$$

$$\Rightarrow \left( 9x^2 + \frac{1}{25x^2} \right) = \frac{114}{25}$$

61. Option (2) is correct.

$$\text{We have, } \frac{7 - [4 + 3(2 - 2 \times 2 + 5) - 8] \div 5}{2 \div 2 \text{ of } (4 + 4 \div 4 \text{ of } 4)}$$

$$\Rightarrow \frac{7 - [4 + 9 - 8] \div 5}{2 \div 2 \text{ of } \left( 4 + \frac{1}{4} \right)}$$

$$\Rightarrow \frac{7 - 1}{2 \div \frac{17}{2}}$$

$$\Rightarrow \frac{6}{\frac{17}{2}}$$

$$\Rightarrow \frac{51}{2} = 25 \frac{1}{2}$$

62. Option (3) is correct.

ABCD is a cyclic quadrilateral in which

$$AB = 16.5 \text{ cm}$$

$$BC = x \text{ cm}$$

$$CD = 11 \text{ cm}$$

$$AD = 19.8 \text{ cm}$$

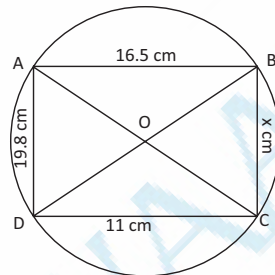
By the property,

$$AB \cdot BC = AD \cdot DC$$

$$16.5 \times x = 19.8 \times 11$$

$$16.5 \times x = 217.8$$

$$x = 13.2 \text{ cm}$$



63. Option (3) is correct.

$$\sec \theta - \tan \theta = \frac{x}{y} \quad \dots(1)$$

$$\Rightarrow \frac{1}{\sec \theta - \tan \theta} = \frac{y}{x}$$

$$\Rightarrow \frac{\sec \theta + \tan \theta}{(\sec \theta - \tan \theta)(\sec \theta + \tan \theta)} = \frac{y}{x}$$

$$\text{We have, } \sec^2 \theta - \tan^2 \theta = 1$$

$$\Rightarrow \sec \theta + \tan \theta = \frac{y}{x} \quad \dots(2)$$

$$\text{From Eqs. (1) and (2), } \sec \theta = \frac{x^2 + y^2}{2xy}$$

$$\Rightarrow \cos \theta = \frac{2xy}{x^2 + y^2}$$

So, base =  $2xy$  and hypotenuse =  $x^2 + y^2$

By Pythagoras theorem,

Perpendicular

$$= \sqrt{(x^2 + y^2)^2 - (2xy)^2}$$

$$= y^2 - x^2$$

$$\text{So, } \sin \theta = \frac{y^2 - x^2}{x^2 + y^2}$$

64. Option (2) is correct.

$$5 \sin^2 \theta + 14 \cos \theta = 13$$

$$5(1 - \cos^2 \theta) + 14 \cos \theta = 13$$

$$5 \cos^2 \theta - 14 \cos \theta + 8 = 0$$

$$(5 \cos \theta - 4)(\cos \theta - 2) = 0$$

$$\text{For } 0^\circ < \theta < 90^\circ$$

$$\cos \theta = \frac{4}{5}$$

By triplet 3-4-5,

$$\sin \theta = \frac{3}{5}$$

$$\Rightarrow \frac{\sec \theta + \cot \theta}{\operatorname{cosec} \theta + \tan \theta} = \frac{\frac{5}{3} + \frac{4}{3}}{\frac{5}{3} + \frac{3}{4}} = \frac{31}{29}$$

65. Option (4) is correct.

We have, D is mid point of AC.

$$\text{So, } AD = \frac{AC}{2}$$

Also given that  $AC = AB$

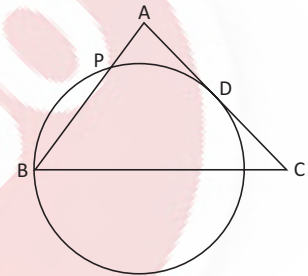
$$\text{So, } AD = \frac{AB}{2}$$

AD is a tangent and APB is a secant. So, the tangent secant theorem can be applied.

$$AD^2 = AP \times AB$$

$$\frac{AB^2}{4} = 2.5 \times AB$$

$$AB = 10 \text{ cm}$$



66. Option (2) is correct.

Total computers sold by A in Feb, Apr and May

$$= 94 + 98 + 108 = 300$$

Total computers sold by D in Mar, May and June

$$= 90 + 89 + 91 = 270$$

$$\text{Required ratio} = 300 : 270 = 10 : 9$$

67. Option (1) is correct.

Let the efficiency of A =  $x$

Then, efficiency of B =  $1.25x$

And efficiency of C =  $1.5x$

$$\text{Total work} = x \times 30 = 30x$$

3 days of work by them together

$$= 3(x + 1.25x + 1.5x) = 11.25x$$

$$\text{Remaining work} = 30x - 11.25x = 18.75x$$

$$\text{Required time for B} = \frac{18.75x}{1.25x} = 15 \text{ days}$$

68. Option (2) is correct.

$$\text{We have, } \frac{\tan 30^\circ \operatorname{cosec} 60^\circ + \tan 60^\circ \sec 30^\circ}{\sin^2 30^\circ + 4 \cot^2 45^\circ - \sec^2 60^\circ}$$

$$= \frac{\frac{1}{\sqrt{3}} \times \frac{2}{\sqrt{3}} + \sqrt{3} \times \frac{2}{\sqrt{3}}}{\frac{1}{4} + 4 \times 1 - 4} = \frac{\frac{2}{3} + 2}{\frac{1}{4}} = \frac{32}{3}$$

**69. Option (1) is correct.**

We have,

$$\frac{x^3 - y^3}{x[(x+y)^2 - 3xy]} \div \frac{y[(x-y)^2 + 3xy]}{x^3 + y^3} \times \frac{(x+y)^2 - (x-y)^2}{x^2 - y^2}$$

$$\Rightarrow \frac{x^3 - y^3}{x[(x+y)^2 - 3xy]} \times \frac{x^3 + y^3}{y[(x-y)^2 + 3xy]} \times \frac{(x+y)^2 - (x-y)^2}{x^2 - y^2}$$

$$\Rightarrow \frac{(x-y)(x^2 + xy + y^2)}{x[(x+y)^2 - 3xy]} \times \frac{(x+y)(x^2 - xy + y^2)}{y[(x-y)^2 + 3xy]} \times \frac{(x^2 + 2xy + y^2) - (x^2 - 2xy + y^2)}{x^2 - y^2}$$

$$\Rightarrow \frac{(x^2 + xy + y^2)}{x(x^2 - xy + y^2)} \times \frac{(x^2 - xy + y^2)}{y(x^2 + xy + y^2)} \times 4xy = 4$$

**70. Option (4) is correct.**

Total number of computers sold by B in Apr, May and Jun = 97 + 102 + 108 = 307

Total number of computers sold by all the dealers in Feb and Apr = 94 + 96 + 104 + 106 + 108 + 97 + 99 + 96 = 800

So, required percentage =  $\frac{307}{800} \times 100 = 38\frac{3}{8}\%$ **71. Option (4) is correct.**

Total number of computers sold by A from Feb to Jun = 94 + 85 + 108 + 98 + 95 = 480

Total number of computers sold by all the dealers in Jun = 95 + 108 + 102 + 91 = 396

Required percentage =  $\frac{84}{396} \times 100 = 21.2\%$ **72. Option (3) is correct.**Let the price of 9 chairs be  $x$ .Price of 5 tables = 15400 -  $x$ We have, 20% of  $x$  + 10% of (15,400 -  $x$ ) = 2,080

$$\Rightarrow 0.2x + 1,540 - 0.1x = 2,080$$

$$\Rightarrow 0.1x = 540$$

$$\Rightarrow x = 5,400$$

$$\text{Price of 9 chairs} = 5,400$$

$$\text{So, price of 3 chairs} = \frac{5,400}{3} = ₹ 1,800$$

**73. Option (3) is correct.**Let speed of boat and speed of stream be  $x$  km/h and  $y$  km/h, respectively.Downstream speed =  $x + y$  km/hUpstream speed =  $x - y$  km/h

We have,

$$\Rightarrow \frac{3}{x-y} + \frac{5}{x+y} = \frac{55}{60} = \frac{11}{12} \quad \dots(1)$$

$$\Rightarrow \frac{4}{x-y} + \frac{9}{x+y} = \frac{85}{60} = \frac{17}{12} \quad \dots(2)$$

From Eqs. (1) and (2),  $x + y = 12$  kmph

So, time taken to cover 43.2 km distance downstream

$$= \frac{43.2}{12} = 3.6 \text{ h}$$

**74. Option (2) is correct.**

Let the income of Sonu = ₹ 100

So, savings = ₹ 15

expenditure = ₹ 85

After 20% increment, her income = ₹ 120

Now, expenditure = 120 - 15 = ₹ 105

Percentage increase in expenditure

$$= \frac{105 - 85}{85} \times 100 = 23.5\%$$

**75. Option (1) is correct.**

We have, P = ₹ 12,000

$$T = 2\frac{5}{8} \text{ years}$$

$$R = 8\% \text{ p.a.} = \frac{2}{25}$$

Principal	Total
1st year	25      27
2nd year	25      27
3rd year	20      21

------(multiply both the columns)

12,500      15,309

$$\text{Difference} = 15,309 - 12,500 = 2,809$$

We have, 12,500 units = 12,000

$$1 \text{ unit} = \frac{12,000}{12,500}$$

$$2,809 \text{ units} = \frac{12,000}{12,500} \times 2,809 = ₹ 2,697$$

**English Comprehension****76. Option (4) is correct.**

'Back to square one' means to be back where one started, with no progress having been made.

**77. Option (2) is correct.**

(1) 'Lots of' means many, and hence, the article 'a' is incorrect.

(2) This option is grammatically correct.

(3) The correct noun to be used is 'strength'. Also, it is an uncountable noun, and hence, the article 'a' is incorrect.

(4) The correct noun to be used is 'strength'.

**78. Option (1) is correct.**

(1) The correct spelling is 'consummation'. 'Consummation' refers to the point at which something is complete or finalised.

(2) 'Chronology' is the arrangement of events or dates in the order of their occurrence.

(3) 'Compromise' is an agreement or settlement of a dispute that is reached by each side making concessions.

(4) 'Competence' is the ability to do something successfully or efficiently.

**79. Option (2) is correct.**

In the passive form, if we find 'was+ Past participle' form of the verb active voice should be in simple past tense.

(1) It is in simple present tense.

(2) It is in simple past tense.

(3) It is in present continuous tense.

(4) It is in past continuous tense.

**80. Option (4) is correct.**

'Liberty' means freedom.

(1) 'Convenience' refers to comfort or ease.

(2) 'Independence' means freedom.

(3) 'Deliverance' refers to the action of being rescued or set free.

(4) 'Dependence' refers to addiction or reliance.

**81. Option (2) is correct.**

(1) 'Tamarind' is a sticky brown pulp from the pod of a tree of the pea family.

(2) The correct spelling of the word is 'treasure'. 'Treasure' is a quantity of precious metals, gems, or other valuable objects.

- (3) 'Turmoil' is a state of great disturbance, confusion, or uncertainty.  
 (4) 'Truthful' is being honest.

**82. Option (2) is correct.**

The use of article 'an' suggests that the next word should start with a vowel sound.

- (1) The word begins with a consonant sound.  
 (2) The word begins with a vowel sound.  
 (3) The word begins with a consonant sound.  
 (4) The word begins with a vowel sound but has a negative tone, which is contradictory to the positive tone of the sentence.

**83. Option (2) is correct.**

- (1) 'For' means on behalf of and hence, will not fit the context.  
 (2) 'To rule out' is to eliminate.  
 (3) 'Rules in' refers to someone controlling or ruling a place and hence, will not fit the context.  
 (4) 'At' isn't used with the verb 'rule'.

**84. Option (1) is correct.**

The word suggests something similar to the word 'errors' and hence, would have a negative tone.

- (1) 'Damages' refers to harm or injury.  
 (2) 'Advantages' refers to benefits or profit. It is a positive word.  
 (3) 'Facilities' refers to amenities. It is a positive word.  
 (4) 'Qualities' means standards. It is a positive word.

**85. Option (4) is correct.**

The sentence talks of correcting the error as it is found.

- (1) 'Managed' means controlled.  
 (2) 'Invented' means created or designed.  
 (3) 'Proposed' means suggested.  
 (4) 'Discovered' means found.

**86. Option (4) is correct.**

The sentence talks of not allowing something wrong to continue. So, the blank should be followed by a negative word.

- (1) 'Remedy' means solution. It is a positive word.  
 (2) 'Parody' refers to an imitation of the style with deliberate exaggeration for comic effect.  
 (3) 'Melody' refers to a tune.  
 (4) 'Malady' is a serious problem or illness.

**87. Option (2) is correct.**

- (1) The preposition 'on' is not used with the verb 'suggest'.  
 (2) 'To insist on' is to state assertively.  
 (3) The preposition 'on' is not used with the verb 'request'.  
 (4) The preposition 'on' is not used with the verb 'offer'.

**88. Option (1) is correct.**

'Prevent' is to keep something from happening.

- (1) 'Avert' is to prevent something.  
 (2) 'Allow' is to let someone have or do something.  
 (3) 'Construct' is to build something.  
 (4) 'Provoke' is to deliberately annoy somebody or make someone angry.

**89. Option (2) is correct.**

'Dead heat' is a situation in which two or more competitors in a race are exactly level.

**90. Option (4) is correct.**

Sentence B refers to a question, which is answered in sentence A. So, BA is a mandatory pair. Similarly, sentence C is an advice, which is affirmed in sentence D. This gives us another mandatory pair, CD. The only option which has both these pairs is option (4). Making BACD the correct sequence.

**91. Option (4) is correct.**

- (1) The verb 'resemble' is not used with the preposition 'with'.  
 (2) The verb 'resemble' is not used with the preposition 'by'.  
 (3) The verb 'resemble' is not used with the preposition 'to'.  
 (4) The verb 'resemble' is not used with any preposition.

**92. Option (2) is correct.**

This is a negative imperative sentence.

- (1) In direct speech, we should use 'said to' or 'told'.  
 (2) In negative imperative sentences, 'do not' is used in the direct speech. 'Commanded' changes to 'said to'.  
 (3) The reporting verb of the imperative sentences is used in simple past tense.  
 (4) The sentence talks of 'students' and not one student.

**93. Option (4) is correct.**

The relative pronoun 'which' is used for any person or thing other than human beings. The correct phrase should be 'The boy who'.

**94. Option (1) is correct.**

After 'one of' a plural noun should be used. The correct phrase should be 'one of the best colleges'.

**95. Option (2) is correct.**

- (1) 'Psychology' refers to the scientific study of the human mind and its functions.  
 (2) 'Ethics' refers to moral principles that govern a person's behaviour of the conducting of an activity.  
 (3) 'Attitude' is a point of view.  
 (4) 'Intuition' refers to the ability to understand something instinctively, without the need for conscious reasoning

**96. Option (1) is correct.**

'Revere' is to feel deep respect or admiration for something.

- (1) 'Respect' is due regard for the feelings, wishes, or rights of others.  
 (2) 'Repeat' is to do something again.  
 (3) 'Enjoy' is to take delight in something.  
 (4) 'Condemn' is to express complete disapproval of something.

**97. Option (1) is correct.**

- (1) 'Altar' is a structure with a flat top, often shaped like a table, that is used in some religious ceremonies.  
 (2) 'To alter' is to change something or someone.  
 (3) 'Atlas' is a book of maps or charts.  
 (4) 'Attic' is a space in a house just under the roof, often used for storing things.

**98. Option (2) is correct.**

- (1) 'Obedience' is to be compliant with an order, request, or law.  
 (2) 'Defiance' means open resistance.  
 (3) 'Compliance' is the action or fact of complying with a wish or command.  
 (4) 'Adherence' is attachment or commitment to a person, cause, or belief.

**99. Option (1) is correct.**

Sentence D introduces the subject. Sentence C mentions the problems faced by the subject while sentence B mentions how she faced those problems. Sentence A concludes the given information. So, the correct sequence is DCBA.

**100. Option (4) is correct.**

'Broad' means wide or having a distance larger than usual from side to side.

- (1) 'Wide' means refers to something has more than average width.  
 (2) 'Large' means big in size, extent, or capacity.  
 (3) 'Long' means measuring a great distance from end to end.  
 (4) 'Narrow' means of small width in relation to length.