

**STAFF SELECTION COMMISSION**  
**COMBINED GRADUATE LEVEL (TIER-I)**

**SOLVED PAPER**

**(3<sup>rd</sup> March 2020: Shift-1)**

**Time Allotted:** 1 hour

**Max marks:** 200

**General Intelligence and Reasoning**

1. 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.

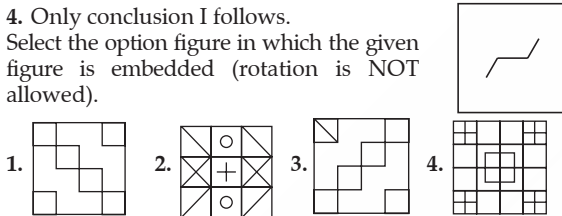
**Statements:**

1. Some animals are elephants.
2. Some elephants are tigers.

**Conclusions:**

- I. Some animals are tigers.
  - II. No tiger is an animal.
1. Only conclusion II follows.
  2. Either conclusion I or II follows.
  3. Neither conclusion I nor II follows.
  4. Only conclusion I follows.

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



3. Which of the option figures is the exact mirror image of the given figure the mirror is held at the right side?

- RST2PK9LOX
1. RST2PK9LOX
  2. RST2PK9LOX
  3. RST2PK9LOX
  4. RST2PK9LOX

4. Arrange the following words in the order in which they appear in an English dictionary.

1. Rightly
2. Rigidly
3. Righteous
4. Rigour

5. In the following equations, if '+' is interchanged with '-' and '6' is interchanged with '7', then which equation would be correct?

1.  $67 - 76 + 43 = 100$
2.  $78 - 68 + 66 = 59$
3.  $76 - 75 + 77 = 56$
4.  $62 - 67 + 76 = 83$

6. Select the option in which the word shares the same relationship as that shared by the given pair of words.

- Clock : Time
1. Balance : Scale
  2. Taseometer : Wind
  3. Anemometer : Strains
  4. Ammeter : Current

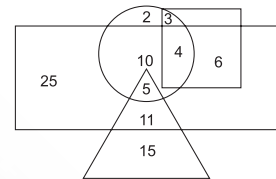
7. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

6	21	14
40	500	?
8	25	7

1. 84
  2. 78
  3. 91
  4. 98
8. The given Venn diagram represents employees in an organisation.

The triangle represents executives, the circle represents females, the rectangles represent MBAs and the square

represents technical staff. The numbers given in the diagram represent the number of persons in that particular category. How many female executives are there in the organisation?



1. 15
  2. 5
  3. 10
  4. 11
9. Four words have been given, out of which three are alike in some manner, while one is different. Select the odd word.

1. Ferry
  2. Yacht
  3. Ship
  4. Submarine
10. The ratio of the present ages of Asha and Lata is 5 : 6. If the difference between their ages is 6 years, then what will be Lata's age after 5 years?

1. 40
  2. 45
  3. 41
  4. 35
11. Select the option in which the numbers are related in the same way as those in the given set.

- (269, 278, 296)
1. (109, 118, 128)
  2. (577, 586, 598)
  3. (419, 430, 448)
  4. (313, 322, 340)

12. Select the figure that replaces the question mark (?) in the following series.



1. diamond, circle, plus
2. plus, diamond, circle
3. plus, circle, diamond
4. diamond, circle, plus

13. 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.

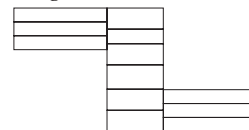
1. 140
  2. 162
  3. 160
  4. 164
14. Select the set of letters that, when sequentially placed in the blanks of the given letter series, will complete the series.

- k\_lmm\_lmk\_mmk\_lkkl\_m
1. k, l, k, l, m
  2. k, l, m, k, k
  3. k, m, m, k, l
  4. l, k, m, k, k

15. In a certain code language, 'HARVEST' is coded as '22-21-7-24-20-3-10'. How will 'FARMER' be coded in that language?

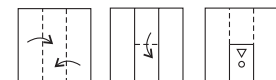
1. 19-7-15-19-3-8
2. 20-7-15-20-3-8
3. 20-7-14-21-3-8
4. 19-7-15-20-3-7

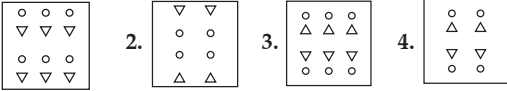

16. How many rectangles are there in the given figure?




1. 34
2. 33
3. 32
4. 30

17. The sequence of folding a price 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?



1. 
18. Which two numbers should be interchanged to make the given equation correct?  
 $9 + 7 \times 5 - 18 \div 2 = 3 \times 4 - 10 + 45 \div 5$   
 1. 7 and 4    2. 18 and 45    3. 2 and 5    4. 9 and 3
19. Amit is the brother of Sonia. Jyoti is the sister of Nikita, Sonia is the daughter of Satish's father. Nikita is the daughter of Kavinder. Jyoti is the mother of Amit. Mukesh is Nikita's only sister's husband. How is Satish related to Kavinder?  
 1. Grandson    2. Son-in-law    3. Son    4. Brother
20. Select the option that is related to the third word in the same way as the second word is related to the first word.  
 Medicine : Disease :: Food : ?  
 1. Hunger    2. Nutrition    3. Energy    4. Thirst
21. In a certain code language, WARDROBE is written as YXVYXHJV. How will ACCURATE be written in that language?  
 1. CZHPYTBV    2. BZHPXTBV  
 3. DZGPXTBV    4. CZGPXTBV
22. Select the letter-cluster that can replace the question mark(?) in the following series.  
 CXB, HUI, MRF, ROW  
 1. VKD    2. WLD    3. WLZ    4. VKC
23. 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. FVKO    2. NMSH    3. BYGT    4. DWIR
24. Two positions of the same dice are shown. Select the number on the face opposite to the one showing 6.  
 1. 5    2. 1  
 3. 3    4. 4
- 

(a)



(b)
25. Select the number that can replace the question mark (?) in the following series.  
 17, 21, 30, 46, 71, ?  
 1. 101    2. 96    3. 107    4. 105

### General Awareness

26. Which of these institutions fixes the Repo Rate and the Reverse Repo Rate in India?  
 1. Ministry of Finance  
 2. State Bank of India  
 3. Reserve Bank of India  
 4. Comptroller and Auditor General of India
27. Which of the following books is NOT written by Salman Rushdie?  
 1. Shame    2. Midnight's Children  
 3. An Area of Darkness    4. The Satanic Verses
28. As of February 2020, who is the President of Sri Lanka?  
 1. Chandrika Kumaratunga    2. Gotabaya Rajapaksa  
 3. D.M. Jayaratne    4. Maithripala Sirisena
29. Name the author who won the Sahitya Akademi Award 2019 for his book – An Era of Darkness: The British Empire in India.  
 1. Vikram Seth    2. Romila Thapar  
 3. Shashi Tharoor    4. Ramchandra Guha
30. Name the physicist who is credited with the discovery of the Neutron. This 1932 discovery led to his winning the Nobel Prize.  
 1. Enrico Fermi    2. J.S. Fleming  
 3. James Chadwick    4. Max Plank
31. As on January 2020, Shri Bhupesh Baghel is the Chief Minister of which of the following states?  
 1. Jharkhand    2. Haryana  
 3. Chhattisgarh    4. Odisha
32. The Araku Valley, a tourist resort, is located near which of these cities of South India?  
 1. Kochi    2. Madurai  
 3. Mangalore    4. Visakhapatnam
33. Sir Thomas Roe came as an official ambassador from King James I of England to which Mughal emperor's court?  
 1. Shah Jahan    2. Akbar  
 3. Aurangzeb    4. Jahangir
34. Which of these words refers to the scientific study of domestic dogs?  
 1. Carpology    2. Cynology  
 3. Chrematistics    4. Craniology
35. The ruins of the ancient city of Hampi – capital of Vijayanagara – is located in which present day Indian state?  
 1. Bihar    2. Haryana    3. Telangana    4. Karnataka
36. The World Food Program (WFP) is the food assistance branch of the United Nations. Where is it headquartered?  
 1. Rome    2. Paris    3. New York    4. Brussels
37. What is the more common name for solid carbon dioxide?  
 1. Potash    2. Dry Ice  
 3. Quick Silver    4. Epsom
38. Sultan Qaboos bin Said of \_\_\_\_\_, the Arab world's longest-serving ruler and with a reputation for quiet diplomacy passed away recently (2020).  
 1. Oman    2. Abu Dhabi  
 3. Dubai    4. Kuwait
39. In which year was Sanchi discovered after being abandoned for nearly 600 years?  
 1. 1814    2. 1816    3. 1818    4. 1820
40. Veteran freedom fighter, social reformer and feminist Savitribai Phule hailed from which of the following states of India?  
 1. Rajasthan    2. Maharashtra  
 3. Gujarat    4. Odisha
41. Prolific Indian painter, Maqbool Fida Husain predominantly used which of these animals to depict a lively and free spirit in his paintings?  
 1. Elephants    2. Cows    3. Horses    4. Tigers
42. From India, who inaugurated the Kartarpur Corridor and flagged off the first set of pilgrims to the final resting place of Sikhism founder Guru Nanak Dev?  
 1. Manmohan Singh    2. Narendra Modi  
 3. Ram Nath Kovind    4. Amarinder Singh
43. Name the media company that purchased the legendary studio of 21st Century Fox.  
 1. Viacom    2. Disney  
 3. Sony    4. Time Warner
44. Red worms have a structure named \_\_\_\_\_ which helps them in grinding their food.  
 1. Gizzard    2. Esophagus  
 3. Crop    4. Intestine
45. For which of the following sports was Dronavalli Harika, conferred with the prestigious Padma Shri award?  
 1. Cricket    2. Archery    3. Chess    4. Badminton
46. Kolathunadu, Valluvanad and Thekkumkoor were ancient small-time kingdoms in which state of India?  
 1. Gujarat    2. Karnataka    3. Bihar    4. Kerala
47. Who is the first and currently the only batsman to score double hundreds in four consecutive test series?

1. Brian Lara
  2. A.B. de Villiers
  3. Rohit Sharma
  4. Virat Kohli
48. What is the uniform GST rate that has been fixed up for lottery prizes by the GST Council?
1. 18%
  2. 32%
  3. 28%
  4. 10%
49. Who among the following played the leading lady in the film 'Mission Mangal' that tells the dramatic true story of the women behind India's first mission to Mars?
1. Vidya Balan
  2. Kareena Kapoor
  3. Deepika Padukone
  4. Kajol
50. Which of these bones is NOT a part of the human ear?
1. Incus
  2. Femur
  3. Malleus
  4. Stapes

**Quantitative Aptitude**

51. The given table shows the number (in thousands) of cars of five different models A, B, C, and E produced during years 2012-2017. Study the table and answer the question that follows.

If 2013 and 2014 are put together, which type of cars constitute exactly 25% of the total number of cars produced in those 2 years?

	A	B	C	D	E	Total
2012	18	26	22	23	31	120
2013	22	18	32	40	18	130
2014	32	43	26	35	34	170
2015	18	22	26	14	20	100
2016	36	12	44	38	50	180
2017	12	48	40	22	28	150

1. C
  2. D
  3. E
  4. B
52. The area of  $\Delta ABC$  is  $44 \text{ cm}^2$ . If D is the midpoint of BC and E is the midpoint of AB, then the area (in  $\text{cm}^2$ ) of  $\Delta BDE$  is:
1. 44
  2. 5.5
  3. 11
  4. 22
53. If the length of a rectangle is increased by 40%, and the breadth is decreased by 20%, and the area of the rectangle increases by  $x\%$ . Then, the value of  $x$  is:
1. 16
  2. 8
  3. 20
  4. 12
54. The given table shows the number (in thousands) of cars of five different models A, B, C, D, and E produced during years 2012-2017. Study the table and answer the question that follows.

	A	B	C	D	E	Total
2012	18	26	22	23	31	120
2013	22	18	32	40	18	130
2014	32	43	26	35	34	170
2015	18	22	26	14	20	100
2016	36	12	44	38	50	180
2017	12	48	40	22	28	150

In the year 2015, which type of car constitutes exactly 20% of the total number of cars produced that year?

1. E
  2. B
  3. D
  4. A
55. If  $A + B = 45^\circ$ , then the value of  $2(1 + \tan A)(1 + \tan B)$  is:
1. 4
  2. 0
  3. 2
  4. 1
56. A train crosses a pole in 12 s and a bridge of length 170 m in 36 s. Then, the speed of the train is:
1. 10.8 km/h
  2. 25.5 km/h
  3. 32.45 km/h
  4. 30.75 km/h
57. Out of 6 numbers, the sum of the first 5 numbers is 7 times the 6<sup>th</sup> number. If their average is 136, then the 6<sup>th</sup> number is:
1. 84
  2. 102
  3. 96
  4. 116

58. If the base radius of 2 cylinders is in the ratio 3 : 4 and their heights are in the ratio 4 : 9, then the ratio of their volumes is:

1. 4 : 1
2. 2 : 1
3. 1 : 4
4. 1 : 2

59. The radius of a circular garden is 42 m. The distance (in m) covered by running 8 rounds around it is:

1. 2,112
2. 1,124
3. 4,262
4. 3,248

60. The ratio of the number of boys to the number of girls in a school of 640 students is 5 : 3. If 30 more girls are admitted in the school, then how many more boys should be admitted so that the ratio of boys to that of the girls, becomes 14 : 9?

1. 15
2. 25
3. 20
4. 30

61. The given table shows the number (in thousands) of cars of five different models A, B, C, D and E produced during years 2012-2017. Study the table and answer the question that follows.

	A	B	C	D	E	Total
2012	18	26	22	23	31	120
2013	22	18	32	40	18	130
2014	32	43	26	35	34	170
2015	18	22	26	14	20	100
2016	36	12	44	38	50	180
2017	12	48	40	22	28	150

The percentage increase in the total car in 2016 over 2012 is:

1. 33.33%
2. 50%
3. 62.33%
4. 45%

62. If  $x^{2a} = y^{2b} = z^{2c} \neq 0$  and  $x^2 = yz$ , then the value of  $\frac{ab + bc + ca}{bc}$  is:

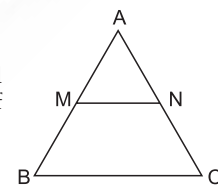
1. 3
2. 3ac
3. 3bc
4. 3ab

63. In  $\Delta ABC$ ,  $MN \parallel BC$ , the area of the quadrilateral MBCN = 130 sqcm. If  $AN : NC = 4 : 5$ , then the area of  $\Delta MAN$  is:

1.  $32 \text{ cm}^2$
2.  $65 \text{ cm}^2$
3.  $40 \text{ cm}^2$
4.  $45 \text{ cm}^2$

64. If A lies in the first quadrant and  $6 \tan A = 5$ , then the value of  $\frac{8 \sin A - 4 \cos A}{\cos A + 2 \sin A}$  is:

1. -2
2. 4
3. 16
4. 1



65. A shopkeeper marks the price of the article in such a way that after allowing 28% discount, he wants a gain of 12%. If the marked price is ₹ 224, then the cost price of the article is:

1. ₹ 114
2. ₹ 196
3. ₹ 120
4. ₹ 168

66. If  $x = 4 \cos A + 5 \sin A$  and  $y = 4 \sin A - 5 \cos A$ , then the value of  $x^2 + y^2$  is:

1. 25
2. 0
3. 41
4. 16

67. If  $x, y, z$  are three integers such that  $x + y = 8$ ,  $y + z = 13$  and  $z + x = 17$ , then the value of  $\frac{x^2}{yz}$  is:

1. 0
2. 1
3. 7/5
4. 18/11

68. If  $x - y = 4$  and  $xy = 45$ , then the value of  $x^3 - y^3$  is:

1. 604
2. 822
3. 151
4. 82

69. The given table shows the number (in thousands) of cars of five different models A, B, C, D and E produced during years 2012-2017. Study the table and answer the question that follows.

	A	B	C	D	E	Total
2012	18	26	22	23	31	120
2013	22	18	32	40	18	130
2014	32	43	26	35	34	170
2015	18	22	26	14	20	100
2016	36	12	44	38	50	180
2017	12	48	40	22	28	150

The percentage decrease in the production of which type of car in 2017, with reference to 2016, was the maximum?

1. C                      2. A                      3. E                      4. D
70. A person sells an article at 10% below its cost price. Had he sold it for ₹ 332 more, he would have made a profit of 20%. What is the original selling price (in ₹) of the article?
1. 1,028                      2. 996                      3. 896                      4. 1,328
71. If '+' means '-', '-' means '+', '×' means '÷' and '÷' means '×', then the value of  $\frac{42 - 12 \times 3 + 8 + 2 + 15}{8 \times 2 - 4 + 9 + 3}$  is:
1.  $-\frac{5}{3}$                       2.  $-\frac{15}{19}$                       3.  $\frac{15}{19}$                       4.  $\frac{5}{3}$
72. If the number  $1,005x4$  is completely divisible by 8, then the smallest integer in place of  $x$  will be:
1. 1                      2. 4                      3. 2                      4. 0
73. ₹ 4,300 becomes ₹ 4,644 in 2 years at simple interest. Find the principle amount that will become ₹ 10,104 in 5 years at the same rate of interest.
1. ₹ 8,420                      2. ₹ 9,260                      3. ₹ 7,200                      4. ₹ 5,710
74. A, B and C are three points on a circle such that the angles subtended by the chord AB and AC at the centre O are  $110^\circ$  and  $130^\circ$ , respectively. Then, the value of  $\angle BAC$  is:
1.  $65^\circ$                       2.  $75^\circ$                       3.  $60^\circ$                       4.  $70^\circ$
75. A, B and C can individually complete a piece of work in 24 days, 15 days and 12 days, respectively. B and C started the work and worked for 3 days and left. The number of days required by A alone to complete the remaining work is:
1.  $13\frac{1}{5}$                       2. 18                      3.  $15\frac{1}{2}$                       4. 11

### English Comprehension

76. Select the passive form of the given sentence.  
The manager keeps the work pending.
1. The work was kept pending by the manager.
  2. The work are being kept pending by the manager.
  3. The work has been kept pending by the manager
  4. The work is kept pending by the manager.
77. Select the correct synonym of the given word.  
Obligatory
1. Aggressive                      2. Mandatory
  3. Useless                      4. Reckless
78. Select the most appropriate option to substitute the underlined segment in the given sentence. If no substitution is required, select No improvement.  
The Director will agree with the proposal if we do not exceed the budget.
1. No improvement                      2. agree on a proposal
  3. agreed by the proposal                      4. agree to the proposal
79. In the sentence, identify the segment which contains the grammatical error.  
One of the boys from our school have been selected for National Badminton Championship.
1. for National Badminton Championship
2. have been selected
  3. from our school                      4. One of the boys
80. Given below are four jumbled sentences. Select the option that gives their correct order.  
A. However, the rate of population increase is another important factor to consider.  
B. This change can be expressed in two ways.  
C. Growth of population refers to the change in the number of inhabitants of a country.  
D. First, in terms of absolute numbers and second, in terms of percentage change.
1. CBDA                      2. BDCA                      3. CADB                      4. BADC
81. Fill in the blank with the most appropriate word.  
We must \_\_\_\_\_ help to the homeless and physically disabled people.
1. exert                      2. contribute                      3. render                      4. donate
- 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.
- Communication plays a (1) \_\_\_\_\_ role in the overall development of man. It can be learnt by our (2) \_\_\_\_\_ efforts. Today, success in our professional life depends on our (3) \_\_\_\_\_ to read, write and speak well which results in effective communication. Barriers (4) \_\_\_\_\_ communication hinder the communication process. It is very important to (5) \_\_\_\_\_ these barriers so that the transmission of the message can be smooth.
82. Select the most appropriate option for blank No. 1.
1. better                      2. total                      3. vital                      4. lifeless
83. Select the most appropriate option for blank No. 2.
1. important                      2. contradictory
  3. conscious                      4. unclear
84. Select the most appropriate option for blank No. 3.
1. facility                      2. variety                      3. ability                      4. agility
85. Select the most appropriate option for blank No. 4.
1. to                      2. from                      3. by                      4. against
86. Select the most appropriate option for blank No. 5.
1. succeed                      2. overcome
  3. create                      4. strengthen
87. Select the most appropriate option to substitute the underlined segment in the given sentence. If no substitution is required, select No improvement.  
The captain as well the players were responsible for winning the trophy.
1. The captain as well as the players was
  2. No Improvement
  3. The captain also the players were
  4. As the captain with the players were
88. Select the appropriate meaning of the given idiom.  
A hard nut to crack
1. Easily encouraged                      2. Easily disappointed
  3. Not restrained                      4. A difficult problem
89. Select the correct antonym of the given word.  
Exodus
1. Departure                      2. Arrival                      3. Exit                      4. Refund
90. Select the correctly spelt word.
1. exhail                      2. exextract                      3. exhibit                      4. exhoust
91. Select the word, which means the same as the groups of words given.  
A song sung at a burial
1. Sonnet                      2. Ballad                      3. Hymn                      4. Dirge
92. In the sentence, identify the segment which contains the grammatical error.

- I can swim very fast when I was only five.
1. I can swim
  2. when I was
  3. only five
  4. very fast
93. Select the appropriate meaning of the given idiom.  
To take French leave
1. Leave with written permission
  2. Leave without any intimation
  3. Acknowledge the host
  4. Welcome the host
94. Given below are four jumbled sentences. Select the option that gives their correct order.
- A. However, they ignore the truth that progress and success are proportional to the labour they put in.
  - B. The general human tendency is to find faults in the policies framed by the government.
  - C. They blame the government for their slow progress, expecting miracles and magical transformation in their life.
  - D. So, people openly criticise and condemn the policy makers.
1. CDAB
  2. ABCD
  3. DBAC
  4. BDCA
95. Select the correctly spelled word.
1. Humilliation
  2. Sarcasm
  3. Retalaite
  4. Bouquette
96. Select the word, which means the same as the given group of words.

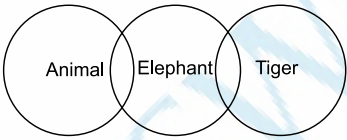
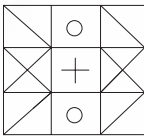
- Something that cannot be heard
1. infallible
  2. inaudible
  3. irrevocable
  4. audible
97. Select the indirect narration of the given sentence.  
He said to the hotel receptionist, "Can you tell me the tariff of rooms?"
1. He asked the hotel receptionist that if he can tell him the tariff of rooms.
  2. He asked the hotel receptionist to tell him the tariff of rooms.
  3. He asked the hotel receptionist if he could tell him the tariff of rooms.
  4. He enquired the hotel receptionist if he can tell him the tariff of rooms.
98. Fill in the blank with the most appropriate word.  
Handle this glass table with care because it is \_\_\_\_\_.
1. frugal
  2. fragile
  3. ductile
  4. volatile
99. Select the correct antonym of the given word.  
Quiescent
1. Peaceful
  2. Dejected
  3. Indifferent
  4. Active
100. Select the correct synonym of the given word.  
Scintillating
1. Flattering
  2. Boring
  3. Glittering
  4. Stinging

## Answer Key

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

## Answers with Explanations

### General Intelligence and Reasoning

1. **Option (2) is correct.**  
The Venn diagram of the given condition is as follows:
- 
- From the above Venn diagram, it is clearly shown that either some animals can be tigers, or no tiger is an animal.
2. **Option (2) is correct.**  
The question figure is embedded in the following is as shown below:
- 
3. **Option (4) is correct.**  
In a mirror image, left becomes right and right becomes left.  
The mirror image of the given figure is as follows:
- RST2PK9LOX    XOL9K9ST2R
4. **Option (3) is correct.**  
The given words in the sequence in which they occur in the dictionary is as follows:

5. **Option (1) is correct.**  
From option (1):  
 $67 - 76 + 43 = 100$   
After interchanging:  
 $76 + 67 - 43 = 100$   
 $143 - 43 = 100$   
 $100 = 100$
6. **Option (4) is correct.**  
Given Clock: Time – as we know that clock shows the time. Similarly, from option (4), Ammeter : Current – ammeter shows the current.
7. **Option (3) is correct.**  
From 1st column:  $6 \times 8 - 8 = 48 - 8 = 40$   
From 2nd column:  $21 \times 25 - 25 = 525 - 25 = 500$   
Similarly, from 3rd column:  $14 \times 7 - 7 = 98 - 7 = 91$
8. **Option (2) is correct.**  
From the given figure, the circle represents females and the triangle, represents executives. So, 5 is the common number from the circle and the triangle, which represents female executives in the organisation.
9. **Option (4) is correct.**  
Except submarine, all others run on water, but the submarine runs under the water.

10. Option (2) is correct.

The ratio of the present ages of Asha and Lata is 5 : 6.  
Let the age of Asha and Lata be 5A and 6A, respectively.  
The difference between their ages = 6 years

$$6A - 5A = 6$$

$$A = 6$$

Age of Lata after 5 years  
= 6A + 5 = 6 × 6 + 5 = 41

Therefore, the Lata's age after 5 years will be 41 years.

11. Option (4) is correct.

Given set that: (269, 278, 296)

$$2 + 6 + 9 = 17$$

$$2 + 7 + 8 = 17$$

$$2 + 9 + 6 = 17$$

Similarly, from option (4) (313, 322, 340)

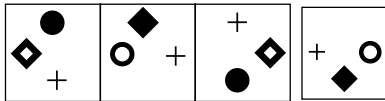
$$3 + 1 + 3 = 7$$

$$3 + 2 + 2 = 7$$

$$3 + 4 + 0 = 7$$

12. Option (2) is correct.

The next figure is as follows:



In this sign + is moving in anticlockwise direction.

13. Option (2) is correct.

Given that: 12 : 72  
12 × 12 / 2 = 12 × 6 = 72

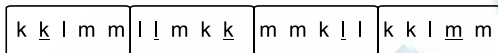
In the same way: 22 : 242  
22 × 22 / 2 = 22 × 11 = 242

Similarly, 18 : ?  
18 × 18 / 2 = 18 × 9 = 162

Hence, 162 is the correct answer.

14. Option (1) is correct.

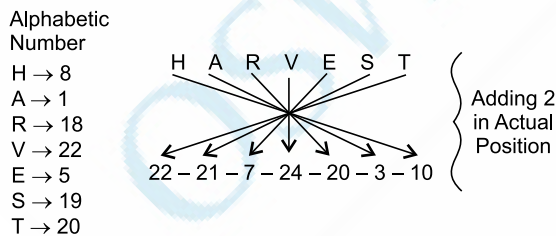
After inserting the alphabets of option (2), we get



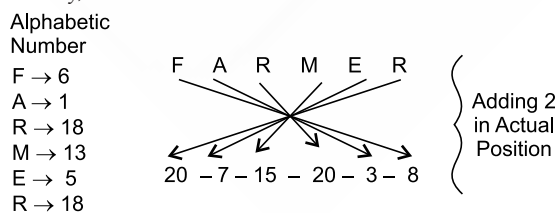
Hence, it forms a meaningful series.

15. Option (2) is correct.

Given that:  
Hence, it forms a meaningful series.  
HARVEST is coded as 22-21-7-24-20-3-10

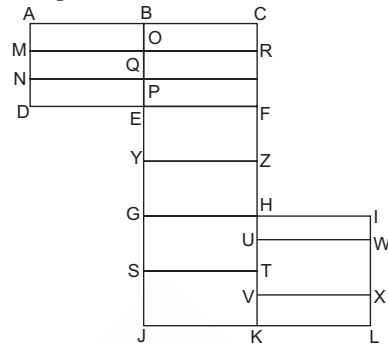


Similarly, for FARMER



16. Option (1) is correct.

The given figure is labelled as:

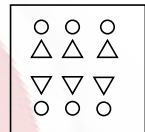


- ABOM, □MODN, □NFED, □BCRQ, □QRFE, □ANFB,
- MDEO, □BCFE, □EFZY, □YZHG, □GHST, □SJKT,
- HTWU, □UVXW, □VKLX, □JKLW, □VXIH, □HKLI,
- GIKH, □YZKJ, □EFKJ, □QRLY, □QRHG, □QRTS,
- QJKR, □BCKJ, □BCZY, □BCHG, □BCTS, □EFHG,
- EFTS, □YZTS, □ACFD, □GILJ

Therefore, there are 34 rectangles in the given figure.

17. Option (3) is correct.

After unfolding the paper, it will appear as shown below:



18. Option (1) is correct.

The given expression:

$$9 + 7 \times 5 - 18 \div 2 = 3 \times 4 - 10 + 45 \div 5$$

From option (1): After interchanging 7 and 4 we get,

$$9 + 4 \times 5 - 18 \div 2 = 3 \times 7 - 10 + 45 \div 5$$

According to the BODMAS rule,

$$\Rightarrow 9 + 4 \times 5 - 9 = 3 \times 7 - 10 + 9$$

$$\Rightarrow 9 + 20 - 9 = 21 - 10 + 9$$

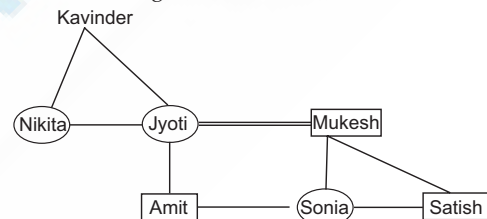
$$\Rightarrow 29 - 9 = 29 - 10$$

$$\Rightarrow 20 = 20$$

Hence, it is the correct option.

19. Option (1) is correct.

The blood diagram is as follows:



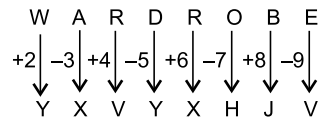
From the blood diagram, it is clearly shown that Satish is the grandson of Kavinder.

20. Option (1) is correct.

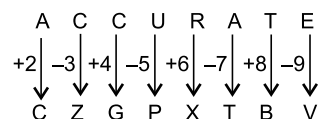
As we know in disease we take medicine. Similarly, in hunger, we take food.

21. Option (4) is correct.

Given that: WARDROBE is coded as YXVYXHJV

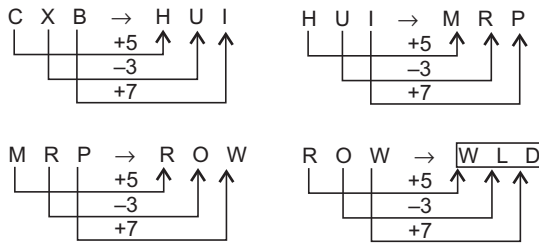


Similarly, for ACCURATE

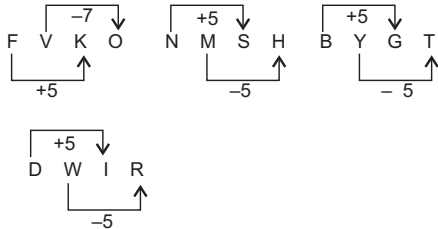


**22. Option (2) is correct.**

The pattern of the series is as follows:

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

Except option (1) all have same pattern.

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

When two faces of a dice are common, then the third sides will be opposite to each other. Since, 3 and 5 are common in both dice, therefore 1 will be opposite to 6.

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

The pattern of the series is as follows:

17, 21, 30, 46, 71, ?

$$17 + 2 \times 2 = 17 + 4 = 21$$

$$21 + 3 \times 3 = 21 + 9 = 30$$

$$30 + 4 \times 4 = 30 + 16 = 46$$

$$46 + 5 \times 5 = 46 + 25 = 71$$

$$71 + 6 \times 6 = 71 + 36 = 107$$

Therefore, the next term will be 107.

### General Awareness

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

Reserve Bank of India (RBI) is responsible for fixing repo or reverse repo rate under the monetary policy. The RBI charges the repo rate when commercial banks borrow funds by leveraging securities. The reverse repo rate is the rate at which banks earn interest when they park surplus funds with the RBI. The repo rate helps control inflation, and the reverse repo rate increases liquidity.

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

From the given options, the book "An Area of Darkness" is written by V.S. Naipaul in 1964. Apart from this, rest all the books are written by Salman Rushdie. He is best known for his fifth book, The Satanic Verses, which prompted a fatwa against him in 1989.

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

Gotabaya Rajapaksa was elected as the 8th President of Sri Lanka in 2019. He is the first President of Sri Lanka who had worked as an army officer before joining politics. He belongs to a political family; his brother Mahinda Rajapaksa has also been the President of Sri Lanka. The name of his party is Sri Lanka Podujana Peramuna (SLPP). Constitutional reform was done in Sri Lanka during his tenure. He resigned from his post in July 2022 due to economic crisis in Sri Lanka.

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

An Era of Darkness: The British Empire in India is written by Shashi Tharoor. In this book, how India's resources were looted by the Britishers and how they destroyed India

for their own benefit, it has been mentioned in the enclosure. Some famous books of Shashi Tharoor:

- Nehru: The Invention of India.
- Why I am a Hindu.
- Pax Indica.

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

James Chadwick discovered the neutron in 1932. Received the Nobel Prize in 1935 for the discovery of the neutron.

Neutron:

- These are electrically neutral particles.
- Its mass is approximately equal to that of a hydrogen atom.
- It will lose the most energy when it hits something with equal mass, such as a hydrogen atom.

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

Bhupesh Baghel is the third chief minister of Chhattisgarh. It is a landlocked state. It borders seven states – Uttar Pradesh to the north, Madhya Pradesh to the northwest, Maharashtra to the southwest, Jharkhand to the northeast, Odisha to the east, Telangana and Andhra Pradesh to the south. Its capital is Raipur. It was separated from Madhya Pradesh on 1 November 2000. It has the third largest forest cover in the country after Madhya Pradesh and Arunachal Pradesh. Achanakmar-Amarkantak Biosphere Reserve is a UNESCO recognised Biosphere, which is located in Chhattisgarh.

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

It is a hill station in Alluri Sitharama Raju district in Andhra Pradesh. It is a valley located in the Eastern Ghats. The Araku Utsav, a 2-day annual celebration, is celebrated in the Araku Valley of Andhra Pradesh. Coorg Arabica Coffee, Wayanad Robusta Coffee, Chikmagalur Arabica Coffee, Araku Valley Arabica Coffee and Baba Budangiri Arabica Coffee are recognised as GI Tag.

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

When Akbar died, Prince Salim succeeded with the title Jahangir in 1605. Captain Hawkins and Thomas Roe visited his court. Captain Hawkins arrived in the court of Jahangir in April 1609. He Built Moti Masjid at Lahore. "Do-aspas and Sih-aspas" system was introduced by him. The Treaty of Chittor was signed between Jahangir and Rana Amar Singh of Mewar in 1615 AD.

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

Cynology is the study of canines or domestic dogs. The study of dreams is called Oneirology. The study of the beauty of humans is called Kalology. The study of viruses is called Virology. The study of algae is called Phycology.

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

Karnataka was the capital of the last great Hindu Kingdom of Vijayanagar (14th–16th Cent CE). Hampi's spectacular setting is dominated by the river Tungabhadra. Dravidian architecture flourished under the Vijayanagara Empire. The Battle of Talikota (1565 CE) led to the massive destruction of its physical fabric. The Raya Gopura, introduced first in the temples attributed to Raja Krishna Deva Raya, is a landmark all over South India. In 1986, it was designated a UNESCO World Heritage site.

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

It is a branch of the United Nations. Deals with food security and hunger eradication in the world. Its headquarters is in Rome, Italy. Founded in 1961. Recently WFP has won the 2020 Nobel Prize for Peace.

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

Solid carbon dioxide (CO<sub>2</sub>) is commonly known as Dry Ice. It does not melt into liquid when heated. It is used as a refrigerant. It is also used in carbonated beverages like soft drinks, beers to make them cold. It changes directly from solid state to gaseous state. It is a colourless and odourless gas.

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

He was the sultan of Oman. In 2020, died after having ruled the country for nearly half a century. India Government honoured him with the Gandhi Peace Prize in 2019. He implemented a policy of modernisation in Oman.

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

It is India's one of Buddhist Monuments. It was discovered by General Taylor in 1818. It was commissioned by Maurya ruler Ashoka in the third century BCE. It is located in Raisen district of Madhya Pradesh. Sanchi stupa is a UNESCO World Heritage Site since 1989.

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

She was a social reformer and worked in the field of women's education. Also, she established a school in Pune for girl's education. Born in January 1831 in Satara District of Maharashtra. She belonged to the Mali Community. She was the first female teacher in India. She was the wife of famous social reformer Jyotiba Rao Phule.

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

He was an Indian painter. He is known for his brightly coloured works depicting horses, urban landscapes.

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

The Kartarpur Corridor (built to commemorate the 550th birth anniversary celebrations of Guru Nanak Dev) is a connective corridor between India and Pakistan through which Indian pilgrims can visit the holy Darbar Sahib in Pakistan. India and Pakistan signed an agreement for the construction of the Kartarpur Sahib Corridor in 2018. The Kartarpur Corridor agreement allows pilgrims to travel visa-free. It is a holy place for Sikhs where Baba Guru Nanak Dev Ji settled and preached for the last 18 years of his life until his death in 1539.

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

The Walt Disney Company, also known as Disney, is an American multinational mass media and entertainment company. Its headquartered in California. It was founded on October 16, 1923 by brothers Walt and Roy O. It is ranked 53 on the 2022 Fortune list.

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

Red worms are nature's ultimate composting worm and it is a great pick for worm farms. They're often called red wigglers, tiger worms, manure worms, composting worms and trout worms. The red worm is the most adaptable and hearty of all the worms suitable for worm farming. Red worms decay leaves, grasses, wood and animal manure; these are all favourites of red worms. Red worms are prolific breeders and after 9 weeks of birth, the red worms are mature. Baby red worms hatch from small lemon shaped cocoons.

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

Dronavalli Harika is an Indian chess player who achieve the Grandmaster title in July 2011. After Koneru Humpy, she is the second Indian woman chess player to have achieved the title of Grandmaster. She has also won the Commonwealth Women's Championship three times. She was conferred with Padma shri award in 2019 and Arjun Award in 2007.

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

- Kolathunadu, Valluvanad and Thekkumkoor were the feudal kingdoms of Kerala.
- Kolattunadu was a kingdom on the Malabar Coast during the arrival of Portuguese Armadas to India.
- Thekkumkur was an independent kingdom in the southern part of Kerala in India from 1103 CE until 1750 CE.
- Valluvanad was a country in south India, in the Bharathapuzha river basin in present-day central Kerala.

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

Virat kohli is the only batsman to score double hundreds in four consecutive test series in India v/s Bangladesh. He also

made double centuries in test series against New Zealand, England and West Indies. He also broke the record of Sir Don Bradman and Rahul Dravid of double hundred in three consecutive test series.

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

It is a constitutional body. The 101st Amendment Act of 2016 (122nd Amendment Bill) paved the way for the implementation of a new tax regime in the country, i.e., goods and services tax – GST. The Council's Secretariat is based in New Delhi. According to the Article 279A of the amended Constitution, the GST Council which will be a joint forum of the Centre and the States shall consist of the following members:

- Union Finance Minister – Chairperson
- The Union Minister of State, In-charge of Revenue of Finance – Member
- The Minister In-charge of Finance or Taxation or any other Minister nominated by each State Government – Members

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

It is a 2019 Indian Hindi-language drama film directed by Jagan Shakti. It is produced by Cape of Good Films.

Cast of Mission Mangal: Akshay Kumar, Vidya Balan, Sonakshi Sinha, Taapsee Pannu, Nithya Menen, Kirti Kulhari and Sharman Joshi.

Mission Mangal received 6 nominations, including Best Film, Best Director (Shakti) and Best Actress (Balan) at the 65th Filmfare Awards.

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

The longest, heaviest, and strongest bone in the human body is the femur. The femur bone acts as the site of origin and attachment of many muscles and ligaments. It can be divided into three parts –

- proximal
- shaft
- distal

---

**Quantitative Aptitude**


---

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

Total production of all types of cars in 2013 and 2014 = 130 + 170 = 300

$$25\% \text{ of total} = 300 \times \frac{25}{100} = 75$$

Since production of type D in 2013 and 2014 = 40 + 35 = 75

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

Since, D and E are mid-point of BC and AB, respectively.

By mid-point theorem  $ED \parallel AC$

$$\text{and } ED = \frac{1}{2} AC$$

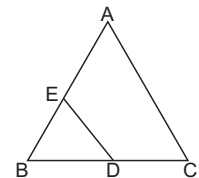
Since  $ED \parallel AC$

$$\therefore \triangle ABC \sim \triangle EBD$$

$$\therefore \frac{\text{Area of } \triangle ABC}{\text{Area of } \triangle EBD} = \left(\frac{AC}{ED}\right)^2 = \left(\frac{2}{1}\right)^2$$

$$= \frac{44}{\text{Area of } \triangle EBD} = 4$$

$$\Rightarrow \text{Area of } \triangle EBD = \frac{44}{4} = 11 \text{ cm}^2$$

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

Let the length and breadth of a rectangle be  $l$  and  $b$ .

$$\therefore \text{Area} = lb$$

$$\text{New length} = l \left(1 + \frac{40}{100}\right) = \frac{7l}{5}$$



$$\text{New breadth} = b \left( 1 - \frac{20}{100} \right) = \frac{4b}{5}$$

$$\text{New area} = \frac{7l}{5} \times \frac{4b}{5} = \frac{28lb}{25}$$

$$\begin{aligned} \text{Increase in area} &= \frac{28lb}{25} - lb \\ &= \frac{28lb - 25lb}{25} = \frac{3lb}{25} \end{aligned}$$

$$\text{Increase percentage} = \frac{\frac{3lb}{25} \times 100}{lb}$$

$$\begin{aligned} x\% &= 12\% \\ x &= 12 \end{aligned}$$

⇒

**Shortcut:** Let breadth be 10 and length be 10  
 Area of old = 10 × 10 = 100  
 Area of new = 14 × 8 = 112  
 Increase % = x = 12

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

Total production of all types in 2015 = 100

$$20\% \text{ of total production} = 100 \times \frac{20}{100} = 20$$

Since, production of type E in 2015 = 20

∴ Production of E in 2015 = 20% total production in 2015.

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

Given that  $A + B = 45^\circ$

$$\begin{aligned} \therefore \tan 45^\circ &= \tan (A + B) \\ 1 &= \frac{\tan A + \tan B}{1 - \tan A \cdot \tan B} \end{aligned}$$

$$1 - \tan A \cdot \tan B = \tan A + \tan B$$

$$1 = \tan A + \tan B + \tan A \cdot \tan B$$

$$1 + 1 = 1 + \tan A + \tan B (1 + \tan A)$$

$$2 = (1 + \tan A) (1 + \tan B)$$

$$4 = 2 (1 + \tan A) (1 + \tan B)$$

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

Let the speed and length of train be  $x$  m/s and  $y$  m, respectively.

Since, train crossed a pole in 12 s.

$$\text{We have, Time} = \frac{\text{Distance}}{\text{Speed}}$$

$$12 = \frac{y}{x}$$

$$\Rightarrow y = 12x \text{ m}$$

Train crosses a bridge of length 170 m in 36 s.

$$\therefore 36 = \frac{y + 170}{x}$$

$$\Rightarrow 36x = y + 170$$

$$\Rightarrow 36x = 12x + 170 \quad [\text{as } y = 12x \text{ m}]$$

$$\Rightarrow 24x = 170$$

$$\Rightarrow x = \frac{170}{24} \text{ m/s}$$

$$= \frac{170}{24} \times \frac{60 \times 60}{1000} \text{ km/h}$$

$$= \frac{51}{2} = 25.5 \text{ km/h}$$

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

Let the 6<sup>th</sup> number be  $x$

A.T.Q Sum of first 5 numbers =  $7 \times x = 7x$

$$\text{Average} = \frac{\text{Sum of 6 numbers}}{6}$$

$$\Rightarrow 136 = \frac{7x + x}{6}$$

$$\Rightarrow x = \frac{136 \times 6}{8}$$

$$\Rightarrow x = 102$$

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

The ratio of radius is 3 : 4.

$$\therefore r_1 = 3x \text{ and } r_2 = 4x$$

and the ratio of heights 4 : 9.

$$h_1 = 4y \text{ and } h_2 = 9y$$

Ratio of volume of two cylinders

$$= \frac{\pi r_1^2 h_1}{\pi r_2^2 h_2} = \frac{(3x)^2 \times 4y}{(4x)^2 \times 9y}$$

$$= \frac{9x^2 \times 4y}{16x^2 \times 9y} = \frac{9 \times 4}{16 \times 9} = \frac{1}{4} = 1 : 4$$

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

Circumference of circular garden

$$= 2\pi r = 2 \times \frac{22}{7} \times 42 = 264$$

Distance covered by running 8 rounds

$$= 8 \times 264 = 2,112 \text{ m.}$$

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

$$\text{Number of boys} = \frac{5}{8} \times 640 = 400$$

$$\text{Number of girls} = \frac{3}{8} \times 640 = 240$$

New number of girls = 240 + 30 = 270

Let  $x$  boys should be admitted

∴ New number of boys = 400 +  $x$

$$\text{ATQ, new ratio} = \frac{400 + x}{270} = \frac{14}{9}$$

$$\Rightarrow 400 + x = \frac{14}{9} \times 270 = 420$$

$$x = 420 - 400 = 20$$

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

Total production of cars in 2016 = 180

Total production of cars in 2012 = 120

Increase in production = 180 - 120 = 60

$$\text{Increase percentage} = \frac{60}{120} \times 100 = 50\%$$

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

Let  $x^{2a} = y^{2b} = z^{2c} = k$

$$x = k^{\frac{1}{2a}}, y = k^{\frac{1}{2b}} \text{ and } z = k^{\frac{1}{2c}}$$

Given that  $x^2 = yz$

$$(k^{\frac{1}{2a}})^2 = k^{\frac{1}{2b}} \cdot k^{\frac{1}{2c}}$$

$$\Rightarrow k^{\frac{2}{2a}} = k^{\frac{1}{2b} + \frac{1}{2c}}$$

$$\Rightarrow \frac{2}{2a} = \frac{1}{2b} + \frac{1}{2c}$$

$$\Rightarrow \frac{2}{a} = \frac{1}{b} + \frac{1}{c} = \frac{b+c}{bc}$$

$$\Rightarrow 2 = \frac{ab+ac}{bc}$$

$$\Rightarrow 2 + 1 = \frac{ab + ac}{bc} + 1 = \frac{ab + ac + bc}{bc}$$

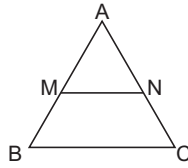
$$\Rightarrow 3 = \frac{ab + ac + bc}{bc}$$

63. Option (1) is correct.

Given that  $MN \parallel BC$

$\therefore \Delta AMN \sim \Delta ABC$

Let the area of  $\Delta AMN = x \text{ cm}^2$



$$\frac{AN}{NC} = \frac{4}{5} \Rightarrow \frac{AN}{AC} = \frac{4}{9}$$

$$\frac{\text{Area of } \Delta AMN}{\text{Area of } \Delta ABC} = \left(\frac{AN}{AC}\right)^2$$

$$\Rightarrow \frac{x}{x + 130} = \frac{16}{81}$$

$$\Rightarrow 81x = 16(x + 130)$$

$$\Rightarrow 81x = 16x + 2,080$$

$$\Rightarrow 81x - 16x = 2,080$$

$$\Rightarrow 65x = 2,080$$

$$\Rightarrow x = \frac{2,080}{65}$$

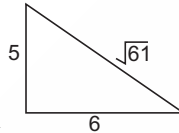
$$\Rightarrow x = 32$$

$\therefore$  Area of  $\Delta MAN = 32 \text{ cm}^2$

64. Option (4) is correct.

Given that  $6 \tan A = 5$

$$\tan A = \frac{5}{6} = \frac{P}{B}$$



Now,  $\sin A = \frac{5}{\sqrt{61}}, \cos A = \frac{6}{\sqrt{61}}$

$$\frac{8 \sin A - 4 \cos A}{\cos A + 2 \sin A} = \frac{8 \times \frac{5}{\sqrt{61}} - 4 \times \frac{6}{\sqrt{61}}}{\frac{6}{\sqrt{61}} + 2 \times \frac{5}{\sqrt{61}}}$$

$$= \frac{40 - 24}{6 + 10} = \frac{16}{16} = 1$$

65. Option (1) is correct.

Given that marked price = ₹ 224

$$\text{Discount} = 224 \times \frac{28}{100}$$

$$\text{S.P.} = 224 \left(1 - \frac{28}{100}\right) = 224 \times \frac{18}{25}$$

$$\therefore \text{C.P.} = \frac{\text{S.P.} \times 100}{100 + \text{profit}} = \frac{224 \times \frac{18}{25} \times 100}{100 + 12}$$

$$= \frac{224 \times 18 \times 4}{112} = 144$$

66. Option (3) is correct.

Given that

$$x = 4 \cos A + 5 \sin A \text{ and } y = 4 \sin A - 5 \cos A$$

$$\text{Now, } x^2 + y^2 = (4 \cos A + 5 \sin A)^2 + (4 \sin A - 5 \cos A)^2$$

$$= 16 \cos^2 A + 25 \sin^2 A + 40 \sin A \cdot \cos A + 16 \sin^2 A$$

$$+ 25 \cos^2 A - 40 \sin A \cdot \cos A$$

$$= 16 (\cos^2 A + \sin^2 A) + 25 (\sin^2 A + \cos^2 A)$$

$$= 16 + 25 = 41$$

67. Option (4) is correct.

Given that

$$\begin{aligned} x + y &= 8 & \dots(i) \\ y + z &= 13 \end{aligned}$$

$$\Rightarrow z = 13 - y \quad \dots(ii)$$

$$\Rightarrow z + x = 17$$

$$\Rightarrow 13 - y + x = 17$$

$$\Rightarrow x - y = 17 - 13 = 4 \quad \dots(iii)$$

$$\Rightarrow x + y = 8$$

$$\Rightarrow \frac{x - y}{2x} = \frac{4}{12}$$

$$\Rightarrow x = 6$$

$$\therefore y = 8 - 6 = 2$$

$$\Rightarrow z = 13 - 2 = 11$$

$$\text{Now, } \frac{x^2}{yz} = \frac{6^2}{2 \times 11} = \frac{36}{22} = \frac{18}{11}$$

68. Option (1) is correct.

$$\Rightarrow x - y = 4$$

$$\Rightarrow (x - y)^2 = 16$$

$$\Rightarrow x^2 + y^2 - 2xy = 16$$

$$\Rightarrow x^2 + y^2 - 2(45) = 16$$

$$\Rightarrow x^2 + y^2 = 16 + 90 = 106$$

$$\text{Now, } x^3 - y^3 = (x - y)(x^2 + y^2 + xy)$$

$$= 4(106 + 45) = 4 \times 151 = 604$$

69. Option (2) is correct.

Change in production in 2017 with reference to 2016

Type A =  $12 - 36 = -24$  (Decrease)

Type B =  $48 - 12 = 36$  (Increase)

Type C =  $40 - 44 = -4$  (Decrease)

Type D =  $22 - 38 = -16$  (Decrease)

Type E =  $28 - 50 = -22$  (Decrease)

$\therefore$  Maximum decrease in type A

70. Option (2) is correct.

Let the cost price be ₹  $x$

$$\text{S.P.} = x \left(1 - \frac{10}{100}\right) = \frac{9x}{10}$$

$$\text{Now, New S.P.} = \frac{9x}{10} + 332$$

$$\Rightarrow \frac{9x}{10} + 332 = x \left(1 + \frac{20}{100}\right)$$

$$\Rightarrow \frac{9x}{10} + 332 = \frac{6x}{5}$$

$$\Rightarrow \frac{6x}{5} - \frac{9x}{10} = 332$$

$$\Rightarrow \frac{12x - 9x}{10} = 332$$

$$\Rightarrow 3x = 332 \times 10$$

$$\Rightarrow x = \frac{332 \times 10}{3}$$

$$\text{Original S.P.} = \frac{9x}{10} = \frac{9}{10} \times \frac{332 \times 10}{3} = ₹ 996$$

71. Option (2) is correct.

Given that: + means -, - means +,  $\times$  means  $\div$  and  $\div$  means  $\times$

$$\text{So, } \frac{42 - 12 \times 3 + 8 \div 2 + 15}{8 \times 2 - 4 + 9 \div 3}$$

$$= \frac{42 + 12 \div 3 - 8 \times 2 - 15}{8 \div 2 + 4 - 9 \times 3}$$

$$= \frac{42 + 4 - 16 - 15}{4 + 4 - 27} = \frac{46 - 31}{8 - 27} = \frac{15}{-19}$$

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

Since,  $1005 \times 4$  is divisible by 8  
 $\therefore 5 \times 4$  is also divisible by 8  
 Since, 504 and 584 divisible by 8  
 $\therefore$  Smallest value of  $x$  is 0.

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

Given that  $P = ₹ 4,300, A = 4,644, T = 2$  years  
 $S.I = 4,644 - 4,300 = 344$

$$\therefore S.I = \frac{PRT}{100}$$

$$\Rightarrow 344 = \frac{4,300 \times R \times 2}{100}$$

$$\Rightarrow R = \frac{344}{43 \times 2} = 4\%$$

$$\text{Amount} = P \left[ \frac{RT}{100} + 1 \right]$$

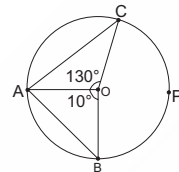
$$\Rightarrow 10,104 = P \left[ \frac{4 \times 5}{100} + 1 \right]$$

$$= P \left[ \frac{1}{5} + 1 \right] = \frac{6}{5}P$$

$$\therefore P = \frac{10,104 \times 5}{6} = ₹ 8,420$$

$$\therefore \text{Principle} = ₹ 8,420$$
**74. Option (3) is correct.**

Angle measure by arc BAC at centre  
 $= 110 + 130 = 240^\circ$   
 $\therefore$  Angle measure by arc BPC at centre  
 $= 360^\circ - 240^\circ = 120^\circ$   
 Angle measure by arc BPC at surface  
 $= \angle BAC = \frac{1}{2}$  angle measure by arc BPC at centre

$$\therefore \angle BAC = \frac{1}{2} \times 120^\circ = 60^\circ$$
**75. Option (1) is correct.**

Work done by A in 1 day =  $\frac{1}{24}$  part  
 Work done by B in 1 day =  $\frac{1}{15}$  part  
 Work done by C in 1 day =  $\frac{1}{12}$  part  
 Work done by B and C in 3 days  
 $= \left( \frac{1}{15} + \frac{1}{12} \right) \times 3 = \frac{4+5}{60} \times 3 = \frac{9}{20}$   
 Remaining works =  $1 - \frac{9}{20} = \frac{11}{20}$   
 Number of days to complete the remaining work by  
 $A = \frac{11}{20} \times 24 = \frac{66}{5} = 13 \frac{1}{5}$  days

---

**English Comprehension**


---

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

Explanation: In the active voice, the sentence's subject performs the action. It is used to direct the reader's attention to the subject of a sentence. In the passive voice, the action's target is the focus, and the verb acts upon the subject. To convert active voice into passive voice, students need to identify the (S+V+O) subject, verb, and object in the active sentence to

convert to passive voice. The given sentence is in passive voice. Its tense is past continuous. The structure of sentences in active and passive voice can be expressed as follows:

Active: Subject + verb + s/es + object...

Passive: Object + is/are + verb (IIIrd form) + by + subject.

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

Explanation: The meaning of "Obligatory" is "required by a legal, moral, or other rule; compulsory." Example: "Use of seat belts in cars is now obligatory." The meanings of the rest of the words are:

Aggressive: ready or likely to attack or confront; characterised by or resulting from aggression. Example: "He's very uncooperative and aggressive."

Reckless: heedless of danger or the consequences of one's actions; rash or impetuous. Example: "You mustn't be so reckless."

Useless: not fulfilling or not expected to achieve the intended purpose or desired outcome. Example: "We tried to pacify him but it was useless."

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

Explanation: The error lies in the incorrect usage of the phrasal verb. The preposition that comes after "agree" mainly depends on the context we're using. You agree with someone/something, you agree on some issue or point of debate, you agree to demands/queries/proposals. The given sentence talks about a proposal so, the correct answer is "agree to."

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

Explanation: "One of the" is followed by a plural noun and a singular verb. The sentence refers to "one" boy being selected. The subject is singular, and thus the verb "have" which refers to the plurals, should be replaced with 'has'.

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

Explanation: The subject of this paragraph is mentioned in statement (C). Statement (B) refers to "the change" stated in the statement (C). Hence, "CB" is a pair.

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

Explanation: "Exert" means "apply or bring to bear (a force, influence, or quality)". One will never exert help upon anyone. Thus, option (1) is ruled out. "Contribute" means "give (something, especially money) in order to help achieve or provide something." One can't contribute help to anyone. Hence, it is also eliminated. "Render" means "provide or give (a service, help, etc.)" Since the sentence mentions providing help for homeless and disable people, "Render" is the best fit in the given context.

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

Explanation: The given sentence says that communication plays a role in the overall development of a man. The blank needs an adjective to qualify "role." The best word to qualify it is important or vital.

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

Explanation: The word following the blank is "effort," hence the blank needs to be filled with an adjective. As the sentence is talking about learning communication, the adjective that is needed to fill the blank should be positive. Thus, "unclear" and "contradictory" are eliminated. Between conscious and important, only "conscious" can be used to qualify "effort."

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

Explanation: Since the blank talks about the dependency of professional life upon certain skills, the blank can be best filled with "ability." The meaning of "agility" is "ability to move quickly and easily." The meaning of "facility" is "the quality of being easily performed."

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

Explanation: In the given blank, the only preposition that can be used is "to," because "to" is used to show purpose.

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

Explanation: The sentence talks about removing barriers to make the transition smooth. Hence, the blank can be filled with "overcome."

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

Explanation: There is an error in subject-verb agreement. The verb should agree with the main subject in number. If two subjects are associated with connectors like "as well as," "together with," "all together," etc., the verb agrees with the farthest subject. In the given sentence, the main subject is "the captain." Hence, the verb should be singular. Thus, "were" should be replaced with "was."

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

Explanation: This question checks students understanding of phrases and idioms. The meaning of "hard nut to crack" is "a person, thing, situation, or problem that is particularly difficult to understand, solve, or deal with." Example: I've been dating Jenny for over a year, and I still think she's a hard nut to crack!

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

Explanation: The meaning of "exodus" is "a mass departure." Example: There is a mass exodus from the cities for the beaches and the mountains on most summer weekends. The opposite of "exodus" is "arrival."

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

Explanation: The correctly spelt word is "exhibit", rest of the words are wrongly spelt. "Exhail" should be "exhale." "Extract" should be "extract." "Exhaust" should be "exhaust".

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

Explanation: "A song sung at burial" is known as "dirge." "Sonnet" is "a fixed verse form of Italian origin consisting of 14 lines that are typically 5-foot iambics rhyming according to a prescribed scheme." "Ballad" is "a narrative composition in rhythmic verse suitable for singing." "Hymn" is "a song of praise to God, a song of praise and joy."

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

Explanation: The sentence about the past, about the childhood of the man. Hence, the sentence should be in the past tense. So, "I can swim" is incorrect, and it should be replaced with "I could swim."

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

Explanation: This question checks students knowledge of

idioms and phrases. To take the French leave is to be absent from work with intimation or permission.

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

Explanation: The sentence is about human tendency of finding faults in policies. This subject is introduced in the sentence (B). Sentence (D) talks about the effect of the tendency stated in (B). So, (BD) is a pair, which will be followed by (C), which continues the idea. Hence, the correct sequence is BDCA.

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

Explanation: The correctly spelt word is "sarcasm". Rest of the words are incorrectly spelt. "Humillation" should be "humiliation." "Retalaite" should be "retaliate." "Bouquette" should be "bouquet."

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

Explanation: Something that cannot be heard is known as "Inaudible." "Infallible" means "incapable of making mistakes or being wrong." "Irrevocable" means "not able to be changed, reversed, or recovered; final."

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

Explanation: Reporting the message of the speaker in the exact words as spoken by him is called direct speech. Reporting the message of the speaker in our own words is called indirect speech. When the reporting verb of direct speech is in past tense then the verb in present tense is changed to the corresponding past tense in indirect speech. In the given sentence the reporting verb is in past tense. So, the reported speech will be converted into past tense.

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

Explanation: "Frugal" means "economical." "Fragile" means "delicate." "Ductile" means "(of a metal) able to be drawn out into a thin wire." "Volatile" means "liable to change rapidly and unpredictably, especially for the worse." The sentence needs an adjective to qualify something, which has to be handled carefully. Fragile is the best fit in the given context.

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

Explanation: "Quiescent" means "in a state or period of inactivity." The antonym of "quiescent" is "active." Hence, Option (4) is the correct answer.

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

Explanation: "Scintillating" means "sparkling or shining brightly."