

STAFF SELECTION COMMISSION
COMBINED GRADUATE LEVEL (TIER-I)

SOLVED PAPER

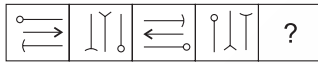
(4th June 2019: Shift-2)

Time Allotted: 1 hour

Max marks: 200

General Intelligence and Reasoning

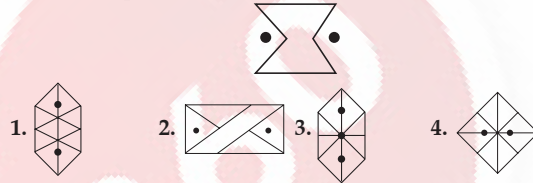
- Which two signs should be interchanged in the following equation to make it correct?
 $18 + 6 - 6 \div 3 \times 3 = 6$
 - + and -
 - + and \div
 - and \div
 - + and \times
 - CDAB
 - ABCD
 - DBAC
 - BDCA
- Arrange the following words in a logical and meaningful order.
 - Medicine
 - Diagnosis
 - Prescription
 - Illness
 - Recovery
 - Doctor
 - 4, 6, 2, 3, 1, 5
 - 4, 6, 1, 3, 2, 5
 - 2, 6, 3, 2, 1, 5
 - 4, 6, 3, 2, 1, 5
- Select the figure that will come next in the following figure series.



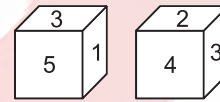
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-
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-

- Three of the following four numbers are alike in a certain way and one is different. Pick the number that is different from the rest.
 - 12
 - 14
 - 36
 - 30
- If BACK is coded as 11312 and CAKE is coded as 51113, then how will MADE be coded as?
 - 51413
 - 54113
 - 31145
 - 13145
- Select the number-pair in which the two numbers are related in the same way as the two numbers of the following.
 - 8 : 248
 - 5 : 62
 - 10 : 160
 - 6 : 108
- Select the Venn diagram that best illustrates the relationship between the following classes.
Parents, Rich Persons, Farmers
 -
 -
 -
 -
- In a code language, TEMPLE is written as DKOLDS. How will WORSHIP be written in that language?
 - OHGRQNV
 - VNQGHR
 - QJITSPX
 - OGHQRVN
- P is the father of Q and the grandfather of R, who is the brother of S's mother, T is married to V. T is the sister of Q. How is V related to P?

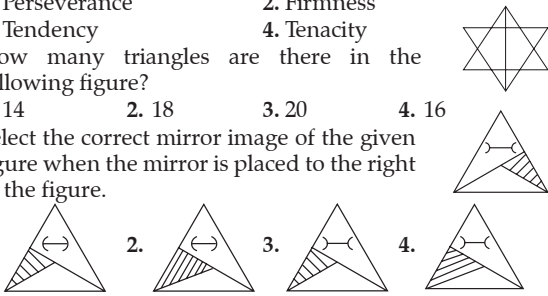
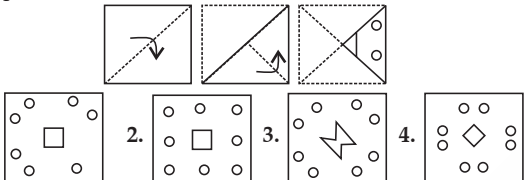
- Nephew
- Brother-in-law
- Son
- Son-in-law
- Which number will replace the question mark (?) in the following series?
2, 5, 11, 23, 44, ?
 - 77
 - 51
 - 63
 - 66
- 'Action' is related to 'Reaction' in the same way as 'Stimulus' is related to '_____'.
 - Reception
 - Vision
 - Response
 - Feedback
- Select the option in which the given figure is embedded.



- Two different positions of the dice are shown. Which number will be at the top if 6 is at the bottom?



- 1
 - 3
 - 2
 - 4
- Three of the following four letter-clusters are alike in a certain way and one is different. Select the odd one out.
 - DGEF
 - HNLJ
 - TWUV
 - MSOQ
 - Select the combination of letters that, when sequentially placed in the gaps of the given letter series, will complete the series.
ac_d_b_cbdd_a_bddb
 - bdabc
 - bdbca
 - bdcab
 - cbdbc
 - Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
Statements:
Some cars are vehicles.
No vehicle is a four-wheeler.
Conclusions:
I. No car is a four-wheeler. II. All four-wheeler are cars.
III. Some vehicles are cars.
 - Only conclusions I and II follow.
 - All conclusions follow.
 - Only conclusion III follows.
 - Only conclusion I follows.
 - Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.
1. VRTS 2. WTVU 3. WUTV 4. XCWV

18. Select the set in which the numbers are related in the same way as the numbers of the following set.
(7, 13, 21)
1. (12, 18, 25) 2. (17, 22, 30) 3. (9, 16, 25) 4. (2, 8, 16)
19. Three of the following four words are alike in a certain way and one is different. Select the odd word out?
1. Perseverance 2. Firmness
3. Tendancy 4. Tenacity
20. How many triangles are there in the following figure?
1. 14 2. 18 3. 20 4. 16
21. Select the correct mirror image of the given figure when the mirror is placed to the right of the figure.
- 
22. A paper is folded and cut, as shown below. How will it appear when unfolded?
- 
23. Select the word-pair in which the words are related in the same way as the two words in the following word-pair.
Heat : Sun
1. Home : Terrace 2. Ride : Car
3. Atmosphere : Humidity 4. Vitamin : Fruit
24. Select the set in which the numbers are related in the same way as the numbers of the following set.
(10, 18, 38)
1. (4, 12, 22) 2. (14, 12, 8) 3. (12, 22, 46) 4. (18, 6, 14)
25. 10 years ago, a father's age was $3\frac{1}{2}$ times that of his son, and 10 years from now, the father's age will be $2\frac{1}{4}$ times that of the son. What will be the sum of the ages of the father and the son at present?
1. 100 years 2. 110 years 3. 115 years 4. 120 years
-
- General Awareness**
-
26. Which of the following Biosphere Reserves was the first to be established by the Government of India?
1. Gulf of Mannar Biosphere Reserve
2. Niliri Biosphere Reserve
3. Nanda Devi Biosphere Reserve
4. Sundarbans Biosphere Reserve
27. _____ is a group folk dance of Sikkim performed in honour of Mount Khangchendzonga, the guardian deity of the Sikkimese people.
1. Zo-Mal-Lok 2. Tendong Lo Run Faat
3. Chu-Faat 4. Kinchum-Chu-Bomsa
28. The idea of residual powers in the Indian Constitution has been taken from the Constitution of:
1. South Africa 2. Canada 3. Japan 4. USA
29. Name the pass in Uttarakhand which is used by pilgrims to Kailash-Mansarovar Yatra.
1. Pens La 2. Lipu Lekh
3. Banihal Pass 4. Khardung La
30. Buckminsterfullerene is an allotrope of:
1. Boron 2. Iron 3. Phosphorus 4. Carbon
31. Name the first ever female prime minister in the world.
1. Indira Gandhi 2. Sirimavo Bandaranaike
3. Golda Meir 4. Elisabeth Domitien.
32. Which panel set up by the Government of India suggested total decontrol of the sugar industry?
1. RamSevak Panel 2. Rangarajan Panel
3. RadheShyam Panel 4. Sri Krishna Panel
33. In India, the project Tiger was started in _____.
1. 1979 2. 1973 3. 1992 4. 1982
34. Who was the first ever female secretary general of SAARC (South Asian Association for Regional Cooperation)?
1. Antonio Guterres 2. Fathimath Dhiyana Saeed
3. Jeremiah Nyamane Kingsley
4. Madeleine Albright
35. Which of the following states passed the Maintenance of Household Registers Bill in March 2019?
1. Assam 2. Mizoram 3. West Bengal 4. Odisha
36. Which of the following Public Sector Undertakings was accorded the Maharatna status in February 2013?
1. BHEL 2. ONGC 3. OIL 4. CIL
37. _____ is the traditional musical instrument of the Limboo community of Sikkim.
1. Chyap-Brung 2. Jeurum Silly
3. Naumati 4. Chutkay
38. How many great powers (Mahajanpadas) existed in the 7th and early 6th centuries BC, during the life time of Lord Gautam Buddha?
1. 16 2. 13 3. 11 4. 17
39. Which of the following has a strong fruity fragrance?
1. Methyl chloride 2. Methanoic acid
3. Methanol 4. Ethyl acetate
40. Name the gland that controls the functioning of other endocrine glands.
1. Pancreas 2. Pituitary gland
3. Rineal gland 4. Adrenal gland
41. Which of the following won the 2023 Women's Premier League?
1. Mumbai Indians 2. Delhi Capitals
3. Gujarat Giants 4. UP Warriorz
42. Name the first Indian budget carrier to join the International Air Transport Association (IATA).
1. Indigo 2. Spice-Jet 3. GoAir 4. Jet Airways
43. Which of the following is an aldehyde?
1. Propanal 2. Propanol 3. Propanone 4. Propine
44. When did ISRO launch Chandrayaan-3?
1. June 20, 2023 2. July 21, 2023
3. July 14, 2023 4. August 23, 2023
45. Who was the founder of the Chalukya dynasty?
1. Narasinhavarman 2. Mangales
3. Kirtivarman 4. Pulakesin I
46. Which of the following Articles of the Constitution of India deals with the Uniform Civil code?
1. Article 43 2. Article 44 3. Article 45 4. Article 46
47. As of December 2023, who among the following is the Chief Election Commissioner of India?
1. Rajiv Kumar 2. Girish Chandra Murmu
3. Vinay Tonse 4. Suman Berry
48. Which of the following is the first working prototype of Internet?
1. APNET 2. ANET 3. PANET 4. ARPANET
49. Which of the following is NOT one of the monarchical states that existed in the 7th and early 6th centuries BC in India?
1. Magadha 2. Vaishali 3. Avanti 4. Kosala
50. Name the state Chandragupta-I got in dowry from the Lichhavis.
1. Ujjain 2. Pataliputra 3. Prayega 4. Saketa

Quantitative Aptitude

51. If the 8-digit number $789x531y$ is divisible by 72, then the value of $(5x - 3y)$ is:
 1. 0 2. -1 3. 2 4. 1
52. The income of Raju is 20% more than his expenditure. If his income increases by 60% and his expenditure increases by 70%, then by what per cent does his savings increase/decrease?
 1. It decreases by 10%. 2. It decreases by 2%.
 3. It increases by 10%. 4. It increases by 2%.
53. A triangle ABC is inscribed in a circle with centre O. AO is produced to meet the circle at K and $AD \perp BC$. If $\angle B = 80^\circ$ and $\angle C = 64^\circ$, then the measure of $\angle DAK$ is:
 1. 10° 2. 16° 3. 12° 4. 20°
54. If $\cos \theta = \frac{2p}{(1+p^2)}$, then $\tan \theta$ is equal to:

1. $\frac{p^2}{1+p^2}$ 2. $\frac{2p}{1-p^2}$ 3. $\frac{1-p^2}{1+p^2}$ 4. $\frac{1-p^2}{2p}$

55. The table shows the production of different types of cars (in thousands).

Year \ Cars	2013	2014	2015	2016	2017
A	35	40	48	50	36
B	39	45	54	60	72
C	52	23	32	52	45
D	30	42	45	46	47
E	36	46	42	45	55

If the data regarding the production of cars of type B is represented by a pie-chart, then the angle of the sector representing the production of cars in 2016 will be:
 1. 80° 2. 96° 3. 60° 4. 72°

56. The table shows the production of different types of cars (in thousands).

Year \ Cars	2013	2014	2015	2016	2017
A	35	40	48	50	36
B	39	45	54	60	72
C	52	23	32	52	45
D	30	42	45	46	47
E	36	46	42	45	55

The total production of cars of type B in 2013, 2014, 2015 and 2017 taken together is what per cent less than the total production of all types of cars in 2017? (Correct to one decimal place)

1. 18.2 2. 18.4 3. 15.8 4. 17.6
57. If $0^\circ < \theta < 90^\circ$ and $\cos^2 \theta = 3(\cot^2 \theta - \cos^2 \theta)$, then the value of $\left(\frac{1}{2} \sec \theta + \sin \theta\right)^{-1}$ is:
 1. $\sqrt{3} + 2$ 2. $2(2 - \sqrt{3})$ 3. $2(\sqrt{3} - 1)$ 4. $\sqrt{3} + 1$
58. If $16x^2 + 9y^2 + 4z^2 = 24(x - y + z) - 61$, then the value of $(xy + 2z)$ is:
 1. 1 2. 2 3. 3 4. 5
59. If $x + y + z = 19$, $xy + yz + zx = 114$, then the value of $\sqrt{x^3 + y^3 + z^3 - 3xyz}$ is:
 1. 21 2. 17 3. 19 4. 13
60. In ΔABC , $AD \perp BC$ and $BE \perp AC$, AD and BE intersect each other at F. If $BF = AC$, then the measure of $\angle ABC$ is:
 1. 45° 2. 60° 3. 70° 4. 50°

61. Two circles of radii 10 cm and 8 cm intersect at the points P and Q. If $PQ = 12$ cm, and the distance between the centres of the circles is x cm. The value of x (correct to one decimal place) is:
 1. 13.9 2. 14.8 3. 13.3 4. 12.8

62. $\left(\frac{\sin \theta - 2 \sin^3 \theta}{2 \cos^3 \theta - \cos \theta}\right)^2 + 1$, $\theta \neq 45^\circ$, is equal to:
 1. $\operatorname{cosec}^2 \theta$ 2. $\sec^2 \theta$ 3. $\cot^2 \theta$ 4. $2 \tan^2 \theta$

63. The table shows the production of different types of cars (in thousands).

Year \ Cars	2013	2014	2015	2016	2017
A	35	40	48	50	36
B	39	45	54	60	72
C	52	23	32	52	45
D	30	42	45	46	47
E	36	46	42	45	55

The ratio of the total production of cars of type C and E taken together in 2013 to the total production of cars of type D in 2014 and 2016 and type E in 2017 taken together is:

1. 8 : 13 2. 5 : 8 3. 13 : 32 4. 8 : 11
64. If $[8(x + y)^3 - 27(x - y)^3] \div (5y - x) = Ax^2 + Bxy + Cy^2$, then the value of $(A + B + C)$ is:
 1. 26 2. 19 3. 16 4. 13
65. A takes 30 minutes more than B to cover a distance of 15 km at a certain speed. But if A doubles his speed, he takes one hour less than B to cover the same distance. What is the speed (in km/h) of B?
 1. 6 2. 5 3. $6\frac{1}{2}$ 4. $5\frac{1}{2}$
66. The value of $5 \div 5 \div 5 \times 2 + 2 \div 2 \div 2 \times 5 - (5 - 2) \div 6 \times 2$ is:
 1. $\frac{9}{5}$ 2. $\frac{19}{10}$ 3. 19 4. $\frac{23}{2}$
67. If x is subtracted from each of 23, 39, 32 and 56, the numbers so obtained, in this order, are in proportion. What is the mean proportional between $(x + 4)$ and $(3x + 1)$?
 1. 15 2. 10 3. 12 4. 14
68. The marked price of an article is ₹ 315. It is sold for ₹ 288. If there is a loss of 4%, then by what per cent above the cost is the article marked?
 1. 5 2. 8 3. $6\frac{1}{2}$ 4. $5\frac{1}{2}$
69. The ratio of the efficiencies of A, B and C is 4 : 5 : 3. Working together, they can complete that work in 25 days. A and C together will complete 35% of that work in:
 1. 12 days 2. 10 days 3. 18 days 4. 15 days
70. The compound interest on a certain sum in $2\frac{1}{2}$ years at 10% p.a., interest compounded yearly, is ₹ 1,623. The sum is:
 1. ₹ 5,000 2. ₹ 6,000 3. ₹ 6,500 4. ₹ 7,200
71. ΔABC is similar to ΔDEF . The area of ΔABC is 100 cm^2 and the area of ΔDEF is 49 cm^2 . If the altitude of $\Delta ABC = 5$ cm, then the corresponding altitude of ΔDEF is:
 1. 7 cm 2. 4.5 cm 3. 6 cm 4. 3.5 cm
72. Renu bought an article for ₹ 1,240 and sold it at a loss of 25%. With this amount, she bought another article and sold it at a gain of 40%. Her overall percentage profit is:
 1. 12 2. $6\frac{1}{2}$ 3. 5 4. 15

73. How much iron sheet (in m^2) will be needed to construct a rectangular tank measuring $10 m \times 8 m \times 6 m$, if a circular opening of radius one metre is to be left at the top of the tank? (correct to one decimal place)
 1. 371.6 2. 370.4 3. 372.9 4. 370.8
74. The table shows the production of different types of cars (in thousands).

Year \ Cars	2013	2014	2015	2016	2017
A	35	40	48	50	36
B	39	45	54	60	72
C	52	23	32	52	45
D	30	42	45	46	47
E	36	46	42	45	55

- The production of cars of type A in 2015 and of type C in 2013 taken together is approximately what per cent of the total production of cars of type D in five years?
 1. 40.2 2. 42.4 3. 43.5 4. 42.8
75. The average weight of a certain number of students in a class is 68.5 kg. If 4 new students having weights 72.2 kg, 70.8 kg, 70.3 kg and 66.7 kg join the class, then the average weight of all the students increases by 300 g. The number of students in the class, initially, is:
 1. 21 2. 16 3. 11 4. 26

English Comprehension

76. Select the antonym of the given word.
 1. soft 2. warm 3. gentle 4. rough
77. Select the word which means the same as the group of words given.
 A person without a settled home or regular work who wanders from place to place and lives by begging.
 1. truant 2. vagrant 3. itinerant 4. migrant
78. Select the wrongly spelt word.
 1. exemplify 2. exempt 3. example 4. exhale
79. Select the synonym of the given word.
 GARRULOUS
 1. guttral 2. throaty 3. concise 4. talkative
80. Given below are four jumbled sentences. Select the option that gives their correct order.
 A. That sort of pollution, which is also widespread in other south east Asian nations, regularly kills wildlife like whales and turtles that ingest the waste.
 B. Environmental groups have tagged the Philippines as one of the world's biggest ocean polluters due to its reliance on single-use plastic.
 C. In Thailand also, a whale died last year after swallowing more than 80 plastic bags.
 D. In the latest case, a whale with 40 kilos of plastic trash in its stomach died on Saturday in southern Philippines where it was stranded a day earlier.
 1. ABCD 2. BADC 3. BCAD 4. DABC
81. Select the most appropriate meaning of the given idiom.
 get out of hand
 1. give up something 2. get out of control
 3. to complete a task 4. get upset
82. Select the antonym of the given word.
 ESCALATE
 1. reduce 2. enlarge 3. raise 4. heighten
83. Select the correct passive form of the given sentence.
 Do not park your car in front of my house.
 1. Your car could not be parked in front of my house.
 2. Your car should not be parked in front of my house.
 3. My house should not be parked in front of your car.
 4. Your car need not be parked in front of my house.

84. Select the most appropriate word to fill in the blank.
 Scientists at Cambridge University are _____ how plants can give us sustainable energy.
 1. scrutinizing 2. investigating
 3. looking 4. inspecting
85. Select the correct active form of the given sentence.
 The main gate of the building was being guarded by gun-totting guards.
 1. The main gate of the building were guarding gun-totting guards.
 2. Gun-totting guards guarded the main gate of the building.
 3. Gun-totting guards were guarding the main gate of the building.
 4. Gun-totting guards have been guarding the main gate of the building.
86. Given below are four jumbled sentences. Select the option that gives their correct order.
 1. The elephant tusks were tracked from the Democratic Republic of Congo for two months.
 2. Customs officials in Thailand say it's the biggest seizure in the country's history.
 3. Four tonnes of ivory, with a market value of \$6 million - it was an impressive haul.
 4. Officials say they were being transported to Laos, from where they believed the ivory would be sold to customers across Asia.
 1. ABCD 2. CABD 3. ACDB 4. CBAD
87. Select the synonym of the given word.
 TILT
 1. support 2. straighten 3. cross 4. slant
88. Select the most appropriate option to substitute the underlined segment in the given sentence. If no substitution is required, select No improvement.
 If you join this job now, it proves to be good in the long run.
 1. it will prove to be good 2. it proves good
 3. No improvement 4. it has proved to be good
89. In the sentence identify the segment which contains the grammatical error.
 She got two quick promotions in order that she has good communication skills.
 1. in order that
 2. She got
 3. she has good communication skills
 4. two quick promotions

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.
 An Italian mayor has been cleaning the streets along with his councilors after their town
 (1)_____ with no manual workers, it's reported. In fact, (2)_____ was sweeping the piazza in front of the (3)_____ church in preparation for market day, (4)_____ the deputy mayor's father and a town councilor armed with a high-pressure hose. The town Zerfaliu's last (5)_____ retired six months ago and nobody has been hired since then. "We can't do anything - we are blocked by bureaucracy," the mayor says.

90. Select the most appropriate option for blank No. 1.
 The main gate of the building was being guarded by gun-totting guards.
 1. has left 2. leaves 3. was left 4. was leaving

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.

An Italian mayor has been cleaning the streets along with his councilors after their town (1)_____ with no manual workers, it's reported. In fact, (2)_____ was sweeping the piazza in front of the (3)_____ church in preparation for market day, (4)_____ the deputy mayor's father and a town councilor armed with a high-pressure hose. The town Zerfaliu's last (5)_____ retired six months ago and nobody has been hired since then. "We can't do anything - we are blocked by bureaucracy," the mayor says.

91. Select the most appropriate option for blank No. 2.

1. he 2. she 3. they 4. it

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.

An Italian mayor has been cleaning the streets along with his councilors after their town (1)_____ with no manual workers, it's reported. In fact, (2)_____ was sweeping the piazza in front of the (3)_____ church in preparation for market day, (4)_____ the deputy mayor's father and a town councilor armed with a high-pressure hose. The town Zerfaliu's last (5)_____ retired six months ago and nobody has been hired since then. "We can't do anything - we are blocked by bureaucracy," the mayor says.

92. Select the most appropriate option for blank No. 3.

1. local 2. next 3. neighbour 4. near

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.

An Italian mayor has been cleaning the streets along with his councilors after their town (1)_____ with no manual workers, it's reported. In fact, (2)_____ was sweeping the piazza in front of the (3)_____ church in preparation for market day, (4)_____ the deputy mayor's father and a town councilor armed with a high-pressure hose. The town Zerfaliu's last (5)_____ retired six months ago and nobody has been hired since then. "We can't do anything - we are blocked by bureaucracy," the mayor says.

93. Select the most appropriate option for blank No. 4.

1. also 2. along 3. as well 4. alongside

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.

An Italian mayor has been cleaning the streets along with his councilors after their town (1)_____ with no manual workers, it's reported. In fact, (2)_____ was sweeping the piazza in front of the (3)_____ church in preparation for market day, (4)_____ the deputy mayor's father and a town councilor armed with a high-pressure hose. The town Zerfaliu's last (5)_____ retired six months ago and nobody has been hired since

94. Select the most appropriate option for blank No. 5.

1. worker 2. councillor 3. mayor 4. member

95. Select the most appropriate option to substitute the underlined segment in the given sentence. If no substitution is required, select No improvement.

I look for a better job for the last two months, but nothing is in sight.

1. have been looking for a better job
2. have looked for a better job
3. No improvement
4. looked for a better job

96. Select the most appropriate meaning of the given idiom. costs an arm and a leg

1. rarely available 2. easy to obtain
3. nothing to lose 4. very expensive

97. Select the word which means the same as the group of words given.

A person, animal or plant belonging originally to a place

1. native 2. resident 3. occupant 4. alien

98. In the sentence identify the segment which contains the grammatical error.

Due to the Cyclone Idai vast areas of land have been flooded, roads destroyed and communications disrupting in Zimbabwe and Mosambique.

1. vast areas of land have been flooded
2. and communications disrupting
3. Due to the Cyclone Idai
4. roads destroyed

99. Select the most appropriate word to fill in the blank.

The State Government argued that it could not _____ the increase in the teachers' salaries as awarded by the court.

1. stand 2. afford 3. spare 4. get

100. Select the wrongly spelt word.

1. comparable 2. comparison
3. competition 4. communication

Answer Key

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

Answers with Explanations

General Intelligence and Reasoning

1. Option (2) is correct.

Given that, $18 + 6 - 6 \div 3 \times 3 = 6$
After interchanging the sign + and \div ,
 $18 \div 6 - 6 + 3 \times 3 = 6$
 $3 - 6 + 9 = 6$
 $12 - 6 = 6$
 $6 = 6$

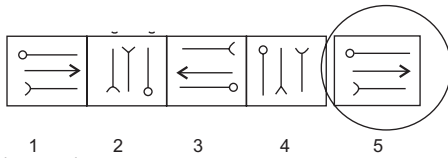
2. Option (1) is correct.

According to the given question, logical and meaningful order is as follows:
Illness 4 \rightarrow Doctor 6 \rightarrow Diagnosis 2 \rightarrow Prescription 3 \rightarrow Medicine 1 \rightarrow Recovery 5

3. Option (4) is correct.

The pattern of the figures is figures 1 and 3 follow the same pattern and figures 2 and 4 follow the same pattern

and get reversed alternatively. Therefore, option (3) will be the next term.



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

The pattern of the given terms is as follows

From option (1), $30 = 6 \times 6 - 6 = 30$

From option (2), $56 = 8 \times 8 - 8 = 56$

And from option (3), $12 = 4 \times 4 - 4 = 12$

Now, from option (4), $14 = 4 \times 4 - 2 = 14$

Therefore, option (2) is different from the others.

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

Given that

BACK is coded as 11312

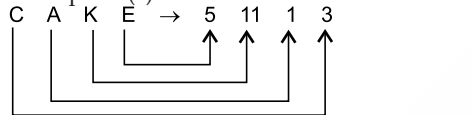
According to the

alphabetical order, B is

the 2nd letter, A is the

1st letter, C is the 3rd letter, and K is the 11th letter. So,

Similarly, from option (3) CAKE is coded as 51113.



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

As, $4 : 32 = 4 \times 4 \times 4 / 2 = 32$

Similarly, from option (2),

$6 : 108 = 6 \times 6 \times 6 / 2 = 108$

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

The Venn diagram of the given condition is represented as:

From the given Venn

diagram, parents can

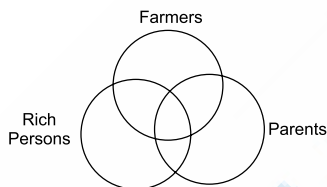
be rich persons and

farmers, but it is not

mandatory that every parent will be a rich person or

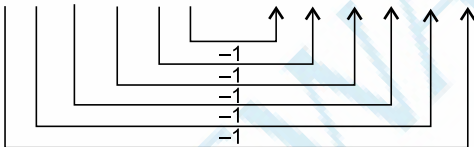
farmer. Therefore, only option (2) satisfies the given

condition.

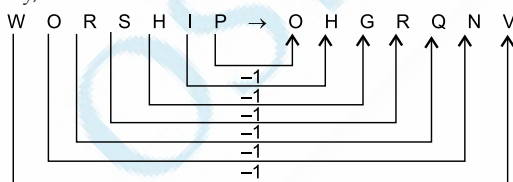


8. **Option (1) is correct.**

As, T E M P L E → D K O L D S

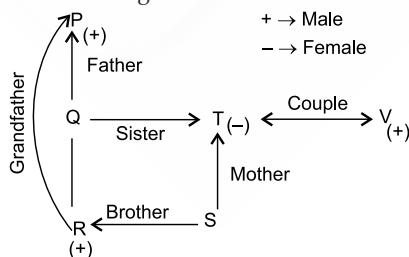


Similarly,



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

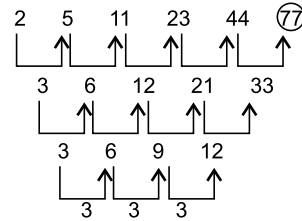
The blood relation diagram is as shown below:



It is clearly shown from the relation diagram that V is the son-in-law of P.

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

The pattern of the series is as follows:



Therefore, the next term will be 77.

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

As we know that action is the result of reaction. Similarly, stimulus is the result of response.

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

It is clearly shown that in the option (4), it is embedded which is shown in the given image.



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

From the given figure,

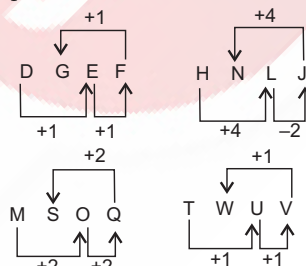
In cube 1 : 1 and 5 are the adjacent faces of the 3.

In cube 2 : 2 and 4 are the adjacent faces of the 3.

After overlapping cubes, we can say that the 3 will be opposite to the 6.

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

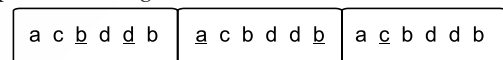
From the options,



It is clearly shown from the options, except option (2) all others follow the same pattern.

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

The pattern of the given series is as follows:



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

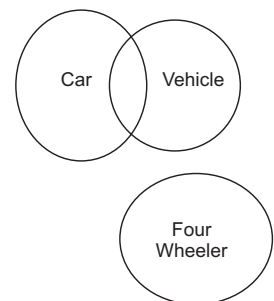
From the given question, the Venn diagram is as follows:

From the given conclusions:

I. No car is a four-wheeler does not satisfy with the given condition.

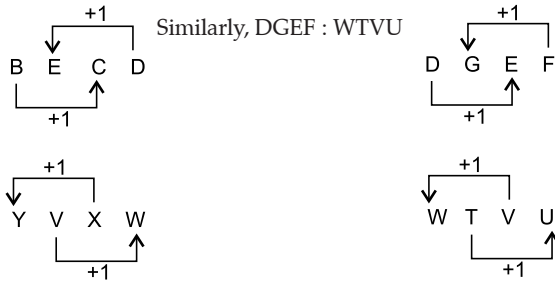
II. All four-wheelers are cars also does not satisfy with the given condition.

III. Some vehicles are cars follows the given condition.



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

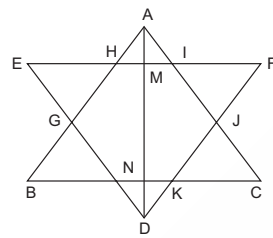
As, BCFD : YVXW



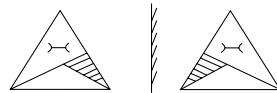
18. **Option (4) is correct.**
 Given set 7 13 21: $13 - 7 = 6$ and $21 - 13 = 8$
 Similarly, from option (4)
 $28 - 16 = 12$ and $16 - 8 = 8$

19. **Option (1) is correct.**
 Firmness, Perseverance and Tenacity are the synonyms of each other. But the word Tendency has different meaning of these words.

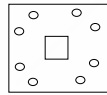
20. **Option (4) is correct.**
 The given figure is labelled as:
 $\triangle AHM, \triangle AMI, \triangle DLN, \triangle NKD,$
 $\triangle ABC, \triangle DEF, \triangle ABN, \triangle ANC,$
 $\triangle DME, \triangle DMF, \triangle EGH, \triangle IFJ,$
 $\triangle BGL, \triangle JKC, \triangle AHI, \triangle DLK$
 So, there are total 16 triangles in the given figure.



21. **Option (3) is correct.**
 The mirror image of the given figure is as follows:
 In the mirror image, left becomes right and right becomes left.



22. **Option (1) is correct.**
 After unfolding the paper, it is shown as



23. **Option (4) is correct.**
 As we know that sun provides heat. Similarly, fruits provide vitamins.

24. **Option (3) is correct.**
 Given that 10 18 38
 $18 - 10 = 8$
 $38 - 18 = 20$
 Therefore, $8 \times 2 + 2 \times 2 = 16 + 4 = 20$
 Similarly, from the option (1)

$$\begin{aligned} 12 & 22 & 46 \\ 22 - 12 & = 10 \\ 46 - 22 & = 24 \end{aligned}$$

Therefore, $10 \times 2 + 2 \times 2 = 20 + 4 = 24$

25. **Option (2) is correct.**
 Let the present age of the son is A years and father's age is B years.

10 years ago, the age of the son was = $A - 10$ and age of the father = $B - 10$.

According to the given question,

$$\begin{aligned} B - 10 &= 7(A - 10)/2 \\ B - 10 &= (7A - 70)/2 \\ 2B - 20 &= 7A - 70 \\ 7A - 2B &= 70 - 20 \\ 7A - 2B &= 50 \end{aligned} \quad \dots(i)$$

Now, the age of the son after 10 years will be $A + 10$ and the age of father will be $B + 10$.

Therefore, $9A - 4B = -50 \quad \dots(ii)$

From the Eqs. (i) and (ii),
 $A = 30$ years and $B = 80$ years
 So, the sum of the ages = $80 + 30 = 110$ years

General Awareness

26. **Option (4) is correct.**
 On April 1st, 1973, the Indian government introduced "Project Tiger" to encourage tiger conservation. The largest species conservation programme of its kind has been Project Tiger. The Project Tiger Directorate of the Ministry of Environment and Forests was tasked with providing technical direction and funding support while the Project States handled the field implementation, protection and management in the designated reserves. Project States also provided the matching grant to recurring items of expenditure, deployed field staff/officers, and paid their salaries.

27. **Option (3) is correct.**
 Meaning of 'Chu' is Snowy Range and the 'Faat' mean is worship.

28. **Option (2) is correct.**
 Residuary powers are mentioned in Article 248, in which Parliament has the exclusive power regarding making laws on matters which are not mentioned in State or Concurrent list.

29. **Option (2) is correct.**
 Lipu Lekh passes in Uttarakhand, this route used by pilgrims to Kailash mansarovar yatra.

30. **Option (4) is correct.**
 It contains 60 carbon atoms joined in a spherical structure.

31. **Option (2) is correct.**
 Sirima Ratwatte Dias Bandaranaike, also known as Sirimavo Bandaranaike, was a politician in Sri Lanka who lived from 17th April 1916 until 10 October 2000. When she became Prime Minister of Sri Lanka (then the Dominion of Ceylon) in 1960, she was the first female prime minister in history.

She presided over the Sri Lanka Freedom Party from 1960 to 1994. She also served three terms as prime minister, twice as the head of state from 1960 to 1965 and once more under a presidential system from 1994 to 2000, while Chandrika Kumaratunga was president.

32. **Option (2) is correct.**
 This panel setup in November 2012, set up by Government of India. This panel suggested the total decontrol of the Sugar industry.

33. **Option (2) is correct.**
 'Project Tiger' launched on 1st April 1973 from the Jim Corbett National Park in Uttarakhand.

34. **Option (2) is correct.**
 She is a Maldivian diplomat, hold this post in 1985.

35. **Option (2) is correct.**
 A bill to registers with each household's name, contact information, and photo was unanimously approved by Mizoram Assembly.

36. **Option (1) is correct.**
 Bharat heavy Electricals Ltd. got Maharatna status in February 2013

37. **Option (1) is correct.**
 The Chyabrung, also known as the Kay or Ke in Limbu, is a typical drum used by the Limbu people in Nepal, Sikkim, the Darjeeling Hills, and North-East India. The Chyabrung is a hollow, two-foot-long hardwood drum with a diameter of 2 metres. The drum is played during the Limbu community's auspicious festivals, Chasok Tangnam by hanging it from a string at stomach height around the neck.

38. **Option (1) is correct.**
 During the age of Lord Gautam Buddha, there were 16 Mahajanapadas in the 7th and early 6th centuries BC. 16 mahajanapadas: (1) Kashi, (2) Kosal, (3) Malla, (4) Vatsa, (5) Chedi, (6) Kuru, (7) Panchal, (8) Matsya, (9) Shurasen, (10) Ashmak, (11) Avanti, (12) Ang, (13) Magadha, (14) Vriji, (15) Gandhara, (16) Kamboj.

39. Option (4) is correct.

Ethyl acetate has a strong fruity smell. It is an ester formed by ethanol and acetic acid. It is a colourless liquid with a sweet smell and is used in nail polish removers and glue etc. It is also used for decaffeination of tea and coffee.

40. Option (2) is correct.

The pituitary gland is also known as the 'Master gland' as it monitors the functions of different glands of the body through the release of several important hormones. It is a small pea-sized gland located below the hypothalamus and forms the part of endocrine system. It releases Growth hormone, prolactin, Thyroid Stimulating Hormone (TSH), Oxytocin, Antidiuretic (ADH) Hormones etc.

41. Option (1) is correct.

Mumbai Indians won the 2023 Women's Premier League after defeating Delhi Capitals. It was the maiden season of the Women's Premier League and was also known as the TATA WPL 2023. Hayley Matthews won the player of the series.

42. Option (2) is correct.

Budget carrier SpiceJet has joined the global airlines' grouping International Air Transport Association (IATA), becoming the first Indian low-cost carrier to get the membership. IATA is headquartered in Canada and its Director General is Willie Walsh.

SpiceJet is headquartered in Gurugram, Haryana and its Chief Managing Director is Ajay Singh.

43. Option (1) is correct.

Propanal or Propionaldehyde is an organic compound which is a colourless, flammable liquid with a pungent and fruity odour. It is an aldehyde with the chemical formula $\text{CH}_3\text{CH}_2\text{CHO}$.

44. Option (3) is correct.

ISRO launched Chandrayaan- 3 on July 14, 2023, from the Satish Dhawan Space Centre, Andhra Pradesh. It touched the South Pole of the moon on August 23, 2023, making India the first country to achieve this feat. The mission had a lunar lander named Vikram and a lunar rover named Pragyan. The point where the lander landed on the moon will be known as Shiv Shakti point. P Veeramuthuvel is the project director of Chandrayaan-3.

45. Option (4) is correct.

The Chalukya Dynasty was founded by Pulakeshin I in 543 AD. He established its capital at Vatapi.

46. Option (2) is correct.

Article 44 of the Indian constitution deals with the Uniform Civil Code. It states that the State shall endeavour to secure for the citizens a uniform civil code throughout the territory of India. These will be a set of laws that govern personal matters, including marriage, divorce, adoption, inheritance, and succession, for all citizens regardless of their religion. If implemented, it will replace the existing diverse personal laws for different religions.

47. Option (1) is correct.

As of December 2023, Rajiv Kumar is the Chief Election Commissioner of India. Suman Bery is Vice Chairperson, NITI Aayog. Vinay M Tonse is the Managing Director of SBI. Girish Chandra Murmu is the Comptroller and Auditor General (CAG) of India.

48. Option (4) is correct.

Advanced Research Projects Agency Network (ARPANET) was the early computer network and the first public packet-switched computer network. It was funded by the Advanced Research Projects Agency (ARPA), an arm of the U.S. Defense Department. It was developed as a means of facilitating communication between research institutions and universities involved in defense research.

49. Option (2) is correct.

Vaishali was part of the Vajji confederacy and the 16 mahajanapadas (kingdoms) of ancient India. It is believed to

be the first republic of the world. It is a place of high importance in Buddhism as it is believed that Lord Buddha delivered his last sermon at Vaishali and announced his Nirvana here. After his death, Vaishali also held the second Buddhist Council.

50. Option (2) is correct.

Chandragupta was given Patliputra in dowry from the Licchavis after marrying Kumaradevi, a princess of the Licchavis family. Chandragupta was a Gupta king who ascended the throne of Magadha in 320 CE.

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

Given number = $789x531y$

Since the given number is divisible by 72.

So it is also divisible by 8 and 9 also.

For divisible by 8

So, $y = 2$

Divisibility rule for 9: all the digits of given number must be divisible by 9.

Now, $7 + 8 + 9 + x + 5 + 3 + 1 + 2 = 35 + x$
 $= 3 \times 9 + 8 + x$

$\therefore 8 + x = 9$

$x = 1$

So, $5x - 3y = 5(1) - 3(2) = 5 - 6 = -1$

52. Option (3) is correct.

Let the expenditure be ₹ 100

$\therefore \text{Income} = 100 + 100 \times \frac{20}{100} = 120$

Saving = $120 - 100 = 20$

New income = $120 \left(1 + \frac{60}{100}\right) = 12 \times 16 = 192$

New expenditure = $100 \left(1 + \frac{70}{100}\right) = 170$

New saving = $192 - 170 = 22$

Increase in saving = $22 - 20 = 2$

% of increase = $\frac{2}{20} \times 100 = 10\%$

53. Option (2) is correct.

Given that

$\angle B = 80^\circ$ and $\angle C = 64^\circ$

In $\triangle ABC$

$\angle BAC = 180^\circ - (80^\circ + 64^\circ)$
 $= 36^\circ$

In $\triangle BAD$

$\angle BAD = 180^\circ - (80^\circ + 90^\circ) = 10^\circ$

$\angle ACK = 90^\circ$ (Angle in semi circle)

$\angle ABC = \angle AKC = 80^\circ$ (Angle in same segment)

In $\triangle AKC$

$\angle KAC = 100^\circ - (80^\circ + 90^\circ) = 10^\circ$

$\angle BAC = \angle BAD + \angle DAC + \angle KAC$

$36^\circ = 10^\circ + \angle DAK + 10^\circ$

$\angle DAK = 36^\circ - 20^\circ = 16^\circ$

54. Option (4) is correct.

Given that $\cos \theta = \frac{2p}{1+p^2}$

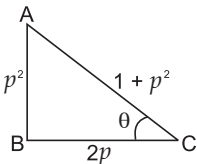
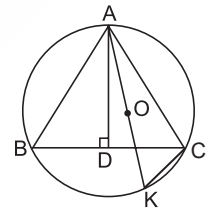
$AB = \sqrt{(1+p^2)^2 - 4p^2}$

$= \sqrt{1+p^4+2p^2-4p^2}$

$= \sqrt{1+p^4-2p^2}$

$= 1-p^2$

$\tan \theta = \frac{1-p^2}{2p}$



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

Total cars of type of B = 39 + 45 + 54 + 60 + 72 = 270

Central angle of type B car for 2016 = $\frac{60}{270} \times 360^\circ = 80^\circ$

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

Total production of type B cars in 2013, 2014, 2015 and 2017 = 39 + 45 + 54 + 72 = 210

Total production of all type cars in 2017 = 36 + 72 + 45 + 47 + 55 = 255

Less number of cars = 255 - 210 = 45

Percentage = $\frac{45}{255} \times 100 = 17.6\%$

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

Given that $\cos^2\theta = 3(\cot^2\theta - \cos^2\theta)$, $0^\circ < \theta < 90^\circ$

$$\cos^2\theta = 3 \left(\frac{\cos^2\theta}{\sin^2\theta} - \cos^2\theta \right)$$

$$\cos^2\theta = 3\cos^2\theta \left(\frac{1}{\sin^2\theta} - 1 \right)$$

$$= 3\cos^2\theta \left(\frac{1 - \sin^2\theta}{\sin^2\theta} \right) = 3\cos^2\theta \times \frac{\cos^2\theta}{\sin^2\theta}$$

$$\Rightarrow \sin^2\theta \cdot \cos^2\theta - 3\cos^4\theta = 0$$

$$\Rightarrow \cos^2\theta (\sin^2\theta - 3\cos^2\theta) = 0$$

$$\Rightarrow \cos^2\theta \neq 0 \ (\theta \neq 90^\circ)$$

$$\text{or } \sin^2\theta - 3\cos^2\theta = 0$$

$$\Rightarrow \tan^2\theta = 3$$

$$\Rightarrow \tan \theta = \sqrt{3}$$

$$\Rightarrow \theta = 60^\circ$$

Now, $\left(\frac{1}{2} \sec \theta + \sin \theta \right)^{-1}$

$$= \left(\frac{1}{2} \sec 60^\circ + \sin 60^\circ \right)^{-1} = \left(\frac{1}{2} \times 2 + \frac{\sqrt{3}}{2} \right)^{-1} = \left(\frac{2 + \sqrt{3}}{2} \right)^{-1}$$

$$= \frac{2}{2 + \sqrt{3}} \times \frac{2 - \sqrt{3}}{2 - \sqrt{3}} = \frac{2(2 - \sqrt{3})}{4 - 3} = 2(2 - \sqrt{3})$$

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

$$16x^2 + 9y^2 + 4z^2 = 24(x - y + z) - 61$$

$$\Rightarrow 16x^2 + 9y^2 + 4z^2 - 24x + 24y - 24z + 61 = 0$$

$$\Rightarrow 16x^2 - 24x + 9 + 9y^2 + 24y + 16 + 4z^2 - 24z + 36 = 0$$

$$\Rightarrow (4x - 3)^2 + (3y + 4)^2 + (2z - 6)^2 = 0$$

$$\Rightarrow 4x - 3 = 0$$

$$\Rightarrow x = \frac{3}{4}$$

$$3y + 4 = 0$$

$$\Rightarrow y = \frac{-4}{3}$$

$$2z - 6 = 0$$

$$\Rightarrow z = 3$$

Now, $xy + 2z = \frac{3}{4} \times \frac{-4}{3} + 2(3) = -1 + 6 = 5$

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

Given that $x + y + z = 19$, $xy + yz + zx = 114$

Now, $\sqrt{x^3 + y^3 + z^3 - 3xyz}$

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

$$= \sqrt{(x + y + z)[(x + y + z)^2 - 3(xy + yz + zx)]}$$

$$= \sqrt{19[(19)^2 - 3(114)]}$$

$$= \sqrt{19 \times 19} = 19$$

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

In ΔBDF and ΔAEF

$$\angle BDF = \angle FEA = 90^\circ$$

$$\angle BFD = \angle AFE$$

(opposite angles)

$$\Delta BDF \sim \Delta AEF$$

$$\therefore \angle FBD = \angle FAE \quad \dots(i)$$

In ΔBFD and ΔADC

$$\angle BDF = \angle ADC = 90^\circ$$

$$\angle FBD = \angle DAC \quad [\text{From (i)}]$$

$$\therefore \Delta BFD \sim \Delta ACD$$

$$\therefore \frac{BF}{AC} = \frac{BD}{AD}$$

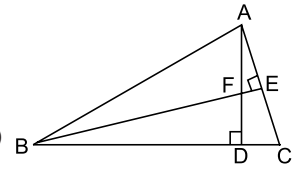
$$1 = \frac{BD}{AD} \quad (\because BF = AC)$$

$$\Rightarrow BD = AD$$

$$\therefore \angle ABD = \angle BAD = 45^\circ$$

(opposite angles of equal sides)

$$\therefore \angle ABC = 45^\circ$$



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

In ΔPOA

$$OA = \sqrt{(10)^2 - (6)^2}$$

$$= \sqrt{100 - 36}$$

$$= \sqrt{64}$$

$$= 8$$

In $\Delta PAO'$

$$AO' = \sqrt{(8)^2 - (6)^2}$$

$$= \sqrt{64 - 36}$$

$$= \sqrt{28}$$

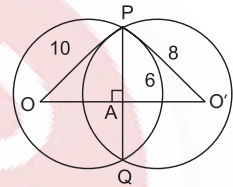
$$= 5.29$$

$$OO' = OA + O'A$$

$$= 8 + 5.29$$

$$= 13.29$$

$$= 13.3 \text{ cm}$$



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

$$\left(\frac{\sin \theta - 2 \sin^3 \theta}{2 \cos^3 \theta - \cos \theta} \right)^2 + 1$$

$$= \left[\frac{\sin \theta (1 - 2 \sin^2 \theta)}{\cos \theta (2 \cos^2 \theta - 1)} \right]^2 + 1$$

$$= \left(\frac{\sin \theta \cdot \cos 2\theta}{\cos \theta \cdot \cos 2\theta} \right)^2 + 1$$

$$= \tan^2 \theta + 1 = \sec^2 \theta$$

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

Total production of cars type C and E in 2013

$$= 52 + 36 = 88$$

Total production of cars type D in 2014 and 2016

$$\text{and type E in 2017} = 42 + 46 + 55 = 143$$

$$\text{Ratio} = \frac{88}{143} = \frac{8}{13} = 8 : 13$$

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

$$\frac{8(x + y)^3 - 27(x - y)^3}{5y - x} = Ax^2 + Bxy + Cy^2$$

$$\begin{aligned} \Rightarrow \frac{(2(x+y))^3 - (3(x-y))^3}{5y-x} &= Ax^2 + Bxy + Cy^2 \\ \Rightarrow \frac{(2x+2y-3x+3y)(4(x+y)^2 + 9(x-y)^2 + 6(x+y)(x-y))}{5y-x} \\ &= Ax^2 + Bxy + Cy^2 \\ \Rightarrow \frac{(5y-x)(4x^2 + 4y^2 + 8xy + 9x^2 + 9y^2 - 18xy + 6x^2 - 6y^2)}{(5y-x)} \\ &= Ax^2 + Bxy + Cy^2 \\ \Rightarrow 19x^2 + 7y^2 - 10xy &= Ax^2 + Bxy + Cy^2 \\ \Rightarrow A + B + C &= 19 + 7 - 10 = 16 \end{aligned}$$

65. Option (1) is correct.

Let the speed of A and B are x km/h and y km/h, respectively

ATQ

$$\frac{15}{x} - \frac{15}{y} = \frac{30}{60} = \frac{1}{2} \quad \dots(i)$$

and $\frac{15}{y} - \frac{15}{2x} = 1 \quad \dots(ii)$

Let $\frac{1}{x} = a$ and $\frac{1}{y} = b$

$$15a - 15b = \frac{1}{2}$$

$$\Rightarrow a - b = \frac{1}{30} \quad \dots(iii)$$

$$15b - \frac{15}{2}a = 1$$

$$\Rightarrow 2b - a = \frac{2}{15} \quad \dots(iv)$$

Adding Eqs. (iii) and (iv)

$$b = \frac{1}{30} + \frac{2}{15} = \frac{5}{30} = \frac{1}{6}$$

So, $\frac{1}{y} = \frac{1}{6} \Rightarrow y = 6$

Hence, speed of B = 6 km/h

66. Option (2) is correct.

$$\begin{aligned} 5 \div 5 \text{ of } 5 \times 2 + 2 \div 2 \text{ of } 2 \times 5 - (5 - 2) \div 6 \times 2 \\ = 5 \div 25 \times 2 + 2 \div 4 \times 5 - 3 \div 6 \times 2 \\ = \frac{1}{5} \times 2 + \frac{1}{2} \times 5 - \frac{1}{2} \times 2 \\ = \frac{2}{5} + \frac{5}{2} - 1 = \frac{4 + 25 - 10}{10} = \frac{19}{10} \end{aligned}$$

67. Option (3) is correct.

$$\begin{aligned} \frac{23-x}{39-x} &= \frac{32-x}{56-x} \\ \Rightarrow (23-x)(56-x) &= (32-x)(39-x) \\ \Rightarrow 1,288 - 23x - 56x + x^2 &= 1,248 - 32x - 39x + x^2 \\ \Rightarrow 1,288 - 79x + x^2 &= 1,248 - 71x + x^2 \\ \Rightarrow 1,288 - 1,248 &= 79x - 71x \\ \Rightarrow 40 &= 8x \\ \Rightarrow x &= 5 \end{aligned}$$

Mean proportional of $x + 4$ and $3x + 1$

$$\Rightarrow \sqrt{(x+4)(3x+1)} = \sqrt{9 \times 16} = 3 \times 4 = 12$$

68. Option (1) is correct.

$$\text{M.P.} = ₹ 315, \text{S.P.} = ₹ 288, \text{Loss} = 4\%$$

$$\therefore \text{C.P.} = \frac{\text{S.P.} \times 100}{100 - \text{loss}} = \frac{288 \times 100}{100 - 4} = \frac{288 \times 100}{96} = 300$$

$$\text{Difference between C.P. and M.P.} = 315 - 300 = 15$$

$$\% \text{ of increase price} = \frac{15}{300} \times 100 = 5\%$$

69. Option (4) is correct.

Let ratio be k

$$\therefore \text{The work done by A, B and C in one day} = 4k + 5k + 3k = 12k$$

$$\therefore \text{Total work} = 25 \times 12k = 300k$$

The work done by A and C in one day

$$= 4k + 3k = 7k$$

Since A and C do 35% of total work.

$$\therefore \frac{1}{7k} \times \frac{35}{100} \times 300k = 15 \text{ days}$$

70. Option (2) is correct.

For 2 years

$$A = P \left(1 + \frac{10}{100} \right)^2 = P \left(\frac{11}{10} \right)^2 = \frac{121P}{100}$$

Interest for $\frac{1}{2}$ year

$$\text{Interest} = \frac{121P}{100} \times \frac{10 \times 1}{2 \times 100} = \frac{121P}{2,000}$$

$$\text{Total interest} = \frac{121P}{100} - P + \frac{121P}{2,000}$$

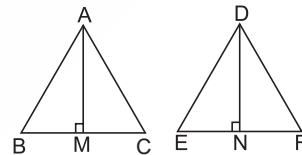
$$\Rightarrow 1,623 = \frac{21P}{100} + \frac{121P}{2,000} = \frac{420P + 121P}{2,000}$$

$$\Rightarrow 1,623 = \frac{541P}{2,000}$$

$$\Rightarrow P = \frac{1,623 \times 2,000}{541} = 6,000$$

71. Option (3) is correct.

Given that $\Delta ABC \sim \Delta DEF$
we have



$$\frac{\text{ar } \Delta ABC}{\text{ar } \Delta DEF} = \frac{(AM)^2}{(DN)^2}$$

$$\Rightarrow \frac{100}{49} = \frac{(5)^2}{(DN)^2}$$

$$\Rightarrow \frac{5}{DN} = \sqrt{\frac{100}{49}} = \frac{10}{7}$$

$$\Rightarrow DN = \frac{5 \times 7}{10} = 3.5 \text{ cm}$$

72. Option (3) is correct.

$$\text{C.P.} = ₹ 1,240, \text{Loss} = 25\%$$

$$\begin{aligned} \text{S.P.} &= \text{C.P.} \left(1 - \frac{\text{loss}}{100} \right) \\ &= 1,240 \left(1 - \frac{25}{100} \right) = 1,240 \times \frac{3}{4} = 930 \end{aligned}$$

Now, profit = 40%

$$\begin{aligned} \text{S.P.} &= 930 \left(1 + \frac{40}{100} \right) = 930 \times \frac{7}{5} \\ &= 1,302 \end{aligned}$$

Total profit = 1,302 - 1,240 = 62

$$\text{Profit \%} = \frac{62 \times 100}{1,240} = 5\%$$

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

$$\begin{aligned} \text{Total surface area of tank} &= \text{Total surface area of cuboid} - \text{Area of circle} \\ &= 2(10 \times 8 + 8 \times 6 + 10 \times 6) - \frac{22}{7} \times (1)^2 \\ &= 2(80 + 48 + 60) - \frac{22}{7} = 376 - 3.1 = 372.9 \text{ m}^2 \end{aligned}$$

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

$$\begin{aligned} \text{Total cars of type A in 2015 and type C in 2013} &= 48 + 52 = 100 \\ \text{Total cars of type D in five years} &= 50 + 42 + 45 + 46 + 47 = 230 \\ \text{Percentage} &= \frac{100}{230} \times 100 = 43.5\% \end{aligned}$$

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

$$\begin{aligned} \text{Let the total number of student be } n. \\ \therefore \text{Total sum of weight of } n \text{ students} &= 68.5n \\ \text{New sum of weight} &= 68.5n + 72.2 + 70.8 + 70.3 + 66.7 \\ &= 68.5n + 280.0 \\ \text{New average weight} &= 68.5 + 0.300 = 68.8 \text{ kg} \\ \text{total students} &= n + 4 \\ \therefore (n + 4) 68.8 &= 68.5n + 280 \\ \Rightarrow 68.8n + 275.2 &= 68.5n + 280 \\ \Rightarrow 0.3n &= 280 - 275.2 \\ \Rightarrow n &= \frac{4.8}{0.3} = 16 \end{aligned}$$

English Comprehension

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

Explanation: The word "tender" means "soft" and "gentle." Opposite of "tender" is "rough."

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

Explanation: "A person without a settled home or regular work who wanders from place to place and lives by begging" is known as "vagabond, vagrant." Truant means "a pupil who stays away from school without leave or explanation." Itinerant means "a person who travels from place to place." Migrant means "a person or animal that moves from one region, place, or country to another."

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

Explanation: The word "exemplify" is wrongly spelt in the question.

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

Explanation: The word "garrulous" means "talkative, loquacious." Example: "I had talked too much about 'myself and felt like a garrulous old fool." Hence, option (4) is the answer. Meanings of the rest of the words are:

"Guttural" means "a speech sound produced in the throat; harsh-sounding." Example: Two Egyptians were arguing outside the room, their voices loud and guttural.

"Throaty" means "a low and rough voice." Example: Her voice is low, measured, and always just a moment away from a throaty laugh.

"Concise" means "short and clear." Example: Make your answers clear and concise.

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

Explanation: The passage is about "ocean pollution due to single-use plastic." The topic is introduced in the statement "B" thus B is the obvious opener. Sentence A refers to the pollution stated in statement B mentioning "that sort of pollution." Thus, B and A make a pair. D and C make a pair, because in the second statement C uses "also." Thus, the sequence is BADC.

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

Explanation: This question checks students' ability to understand idioms and phrases. The meaning of "get out of hand" is "getting out of control." Example: The real estate market in this city is totally out of hand!

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

Explanation: The meaning of the word "escalate" is "increase rapidly, become more intense or serious." Example: "A little war threatens to escalate into a huge ugly one." The opposite of "escalate" is "reduce."

83. **Option (2) 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 of the sentence in active form. The passive form of the given sentence is given in option (2).

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

Explanation: "Scrutinising" means to examine closely and minutely. "Inspect" is to examine critically or carefully; especially, to search out problems or determine condition; "to scrutinise" is to examine something with great care. In the given context, "inspecting" is a better fit.

85. **Option (3) 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. The structure of a passive sentence in the past continuous tense is: object + was/were + being + verb {3rd form of the verb} + by + subject. And the structure of an active sentence in the past continuous tense is: subject + was/were + verb + ing + object. Option (3) is the apt conversion of the given sentence in the question.

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

Explanation: Subject of the paragraph is "seizing of four tonnes of ivory". The sentence "C" should be the first sentence, as it introduces the theme of the passage. Sentence C should be followed by sentence B as it further elaborates on the seizure that is mentioned in sentence C. AD is the mandatory pair because sentence A talks about the tracking of elephant tusks and sentence D sheds further light on their transportation. Hence, the sequence is CBAD.

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

Explanation: The word "tilt" means "slant." Example: "He tilted his head to one side."

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

Explanation: This is a conditional sentence. This is the first condition, which deals with future speculation. In first condition, if clause will be having the verb in simple present form. The main clause will have the verb in simple future form.

89. Option (1) is correct.

Explanation: The sentence is stating the reason for someone getting quick promotions, but rather than using a conjunction, which shows a cause effect relationship, the sentence uses "in order that," which is used to show purpose. Thus, "in order that" is incorrect, and it should be replaced with "because."

90. Option (3) is correct.

Explanation: The sentence says that the mayor has been cleaning the street after some action took place. Thus, the blank needs a verb in the past tense.

91. Option (1) is correct.

Explanation: The second blank needs a pronoun, which refers to the mayor stated in the first sentence.

92. Option (1) is correct.

Explanation: The third blank can be best filled with an adjective because the word next to the blank is a noun, "church". Though all the given options are adjectives and can be used in the blank, the most relevant one is "local," because in the first sentence there is a reference that the mayor was sweeping his town.

93. Option (4) is correct.

Explanation: The fourth blank needs a word that shows that along with deputy mayor's father, somebody else was there. The best word for this role is "along" or "alongside." But "along" should be followed by "with." The word 'with' is not used after the blank; hence, the only option that fits is "alongside."

94. Option (1) is correct.

Explanation: Since the later part after the blank suggests that somebody got retired. Thus, the blank can best be filled with "worker."

95. Option (1) is correct.

Explanation: The sentence suggests that the action started in the past and is in continuation at the time of speaking. The present perfect continuous tense (sub + has/have + been + verb + ing) is required.

96. Option (4) is correct.

Explanation: This question checks students' ability to understand phrases and idioms. The meaning of the idiom "cost an arm and a leg" is "to be very expensive."

97. Option (1) is correct.

Explanation: "A person, animal, or plant belonging originally to a place" is known as a "native, or aboriginal".

98. Option (2) is correct.

Explanation: The error is in the part, "communications disrupting." There is an error of parallel construction, which says that each part of a sentence should be in similar construction. All the verbs present in the sentence must agree with each other. 'Disrupting' must be replaced with 'disrupted' to form a grammatically correct sentence.

99. Option (2) is correct.

Explanation: The sentence suggests that the state government could not bear the increase in the teachers' salaries as awarded by the court. Hence, the apt word to fill the blank is "afford," which means "have enough money to pay."

100. Option (3) is correct.

Explanation: The wrongly spelt word is "competition". The correct spelling is "competition."