STAFF SELECTION COMMISSION

COMBINED GRADUATE LEVEL (TIER-I)

SOLVED PAPER

(27th July 2023: Shift-3)

Time Allotted: 1 hour **Max marks:** 200

Important Instructions:-

- This paper contains 100 questions and divided into 4 sections and each section contains 25 questions.
  - General Intelligence and Reasoning
  - General Awareness
  - Quantitative Aptitude
  - English Comprehension
- Each question carries 2 marks. There will be a negative marking of 0.50 for every incorrect answer.
- All questions are compulsory to attempt and there will be no negative marking for unattempted questions.

General Intelligence and Reasoning

1. Select the option that is related to the fifth number in the same way as the second number is related to the first number and the fourth number is related to the third number.
19 : 34 :: 5 : 6 :: 27 : ?
1. 50 **2.** 67 **3.** 52 **4.** 63

2. Select the set in which the numbers are related in the same way as are the numbers of the following set.
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits.)
(4, 3, 16)
(6, 4, 28)
1. (5, 2, 49) **2.** (8, 2, 20) **3.** (8, 1, 18) **4.** (3, 2, 12)

3. Which two signs should be interchanged to make the given equation correct?
171 ÷ 3 – 16 + 72 × 412 = 572
1. × and – **2.** ÷ and – **3.** ÷ and + **4.** – and +

4. Three of the following four letter-clusters are alike in a certain way and one is different. Pick the odd one out.
1. EBV **2.** GET **3.** BYY **4.** JGQ

5. Which two signs should be interchanged to make the given equation correct?
17 × 4 + 6 ÷ 2 – 27 = 92
1. + and × **2.** ÷ and × **3.** + and − **4.** ÷ and +

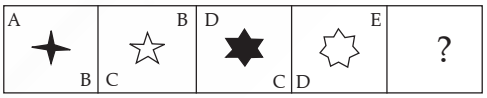
6. Which letter-cluster will replace the question mark (?) to complete the given series?
PQST, TOVS, ?, BKBQ, FIEP
1. XMYR **2.** XYRM **3.** YNZQ **4.** XNYQ

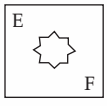
7. 'E + B' means 'E is the husband of B'
'E – B' means 'E is the daughter of B'
'E $ B' means 'E is the father of B'
'E # B' means 'E is the mother of B'
If 'N + D # Z $ B', then how is N related to B?
1. N is the paternal grandfather of B
2. N is the mother-in-law of B
3. N is the paternal grandmother of B
4. N is the maternal grandmother of B

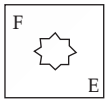
8. In this question, three statements are given, followed by two conclusions numbered I and II. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follows/follow from the statements.
Statements:
I. Some rings are fingers. **II.** Some fingers are toes.
III. No toe is an earring.
Conclusions:
I. No earring is a ring. **II.** Some toes are rings.
1. Neither conclusion I nor II follows
2. Only conclusion II follows
3. Only conclusion I follows
4. Both conclusions I and II follow

9. Select the option that represents the letters that, when placed from left to right in the following blanks, will complete the letter-series.
S_UCTSR__T_RUE_SR__T
1. RUESTVG **2.** RVDSTUF
3. RUDSTUF **4.** RVESTUF

10. Select the figure that will come in place of the question mark (?) in the following figure series.



1. 

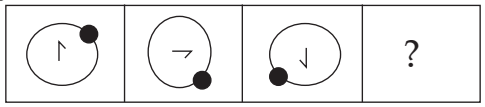
2. 

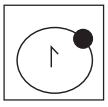
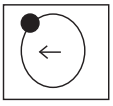
3. 

4. 

11. Select the option that is related to the third word in the same way as the second word is related to the first word. (The words must be considered as meaningful English words and must not be related to each other based on the number of letters/number of consonants/vowels in the word.)
India : Royal Bengal Tiger :: Australia : ?
1. Horse **2.** Dragon **3.** Kangaroo **4.** Elephant

12. Select the figure that will come next in the following figure series.

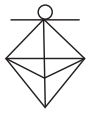
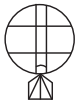
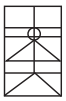


1. 
2. 
3. 
4. 

13. Which of the following numbers will replace the question mark (?) in the given series?
11, 36, ?, 121, 185, 266
1. 68 **2.** 72 **3.** 70 **4.** 63

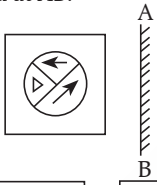
14. In a certain code language, 'FARM' is coded as HDTP and 'EGGS' is coded as GJIV. How will 'FOOD' be coded in the same language?
1. HQQG **2.** GRQH **3.** HRQG **4.** HQRG

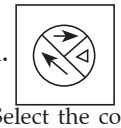
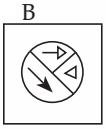
15. Select the option in which the given figure is embedded (rotation is NOT allowed).

1.  **2.**  **3.**  **4.** 

16. Select the set in which the numbers are related in the same way as are the numbers of the given set.
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. For example: 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)
(13, 17, 23)
(8, 12, 18)
1. (17, 21, 15) **2.** (18, 22, 28) **3.** (11, 15, 23) **4.** (5, 9, 16)

17. Select the correct mirror image of the given figure when the mirror is placed at AB.



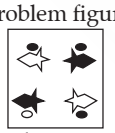
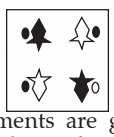
1.  **2.**  **3.**  **4.** 

18. Select the correct combination of mathematical signs to sequentially replace the * signs and balance the given equation.
7 * 5 * 4 * 2 * 3 * 7
1. ÷, −, +, ×, = **2.** +, −, ÷, −, =
3. ÷, +, ÷, +, = **4.** −, ÷, +, ×, =

19. Select the option that is related to the fifth letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster and the fourth letter-cluster is related to the third letter cluster.
COMFORT : FMOCTRO :: DIGNITY : NGIDYTI :: FOREIGN : ?
1. EROFNGI **2.** ROFNGIE **3.** EROFIGN **4.** EFORNGI

20. Select the option that represents the letters that, when sequentially placed from left to right in the blanks below, will complete the letter series.
L _ _ RALMT _ _ _ _ TRALM_ R _
1. TRMALMTA **2.** MRTLAMTA
3. MTRALMTA **4.** MTRLAMTA

21. Which of the answer figures is the exact mirror image of the given problem figure when the mirror is held at the right side?
Problem figure:

1.  **2.**  **3.**  **4.** 

22. In this question, three statements are given, followed by two conclusions numbered I and II. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follows/follow from the statements.
Statements:
I. No streak is a line. **II.** Some lines are bands.
III. All bands are flashes.
Conclusions:
I. Some flashes are streaks. **II.** No flash is a line.
1. Only conclusion I follows
2. Both conclusions I and II follow
3. Only conclusion II follows
4. Neither conclusion I nor II follows

23. Select the set in which the numbers are related in the same way as are the numbers of the following sets.
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. For example: 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)
(239, 127, 212)
(96, 64, 132)
1. (262, 132, 240) **2.** (140, 76, 181)
3. (167, 89, 178) **4.** (110, 91, 159)

24. Which of the answer figures is the exact mirror image of the given problem figure when the mirror is held at the right side?
Problem figure:

1.  **2.** 
3.  **4.** 

25. Select the option that is related to the fifth letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster and the fourth letter-cluster is related to the third letter-cluster.
HEROES : LBVLBW :: INVEST : FRZBWX :: KIDNAP : ?
1. MUTYRS **2.** LOBCSA **3.** OFHRXT **4.** AWSLPO

General Awareness

26. The Shevaroy Hills are located in which state of India?
1. Chhattisgarh **2.** Odisha
3. Rajasthan **4.** Tamil Nadu

27. In India Who among the following has the power to pardon, reprieve or commute the punishment of any criminal?
1. Prime Minister **2.** Attorney General of India
3. President **4.** Vice-President

28. The "Nalacharitam" play is associated with which Indian dance form?
1. Kathak **2.** Kathakali **3.** Sattriya **4.** Odissi

29. The President of which country attended the first Republic Day celebrations of India as its chief guest?
1. Bhutan **2.** Indonesia **3.** China **4.** Japan

30. Which of the following pair of compound – melting point is correct?
I. Acetic acid – 290K **II.** Ethanol – 156K
1. Only I **2.** Both I and II
3. Neither I nor II **4.** Only II

31. In India, what type of unemployment is created due to lack of employable skills among the educated youths in India?
1. Structural unemployment

2. Educated unemployment
3. Cyclical unemployment
4. Technological unemployment

32. Indian boxers _____ won gold medals at the 73rd Strandja Memorial Boxing Tournament, held in Sofia, Bulgaria in February 2022.
1. Manju Rani (52 kg) and Nitu (48 kg)
2. Nikhat Zareen (52 kg) and Nitu (48 kg)
3. Nikhat Zareen (52 kg) and Pooja Rani (48 kg)
4. Manju Rani (52 kg) and Pooja Rani (48 kg)

33. Who was associated with the foundation of the Fergusson College?
1. Dadabhai Naoroji **2.** Gopal Krishna Gokhale
3. Lajpat Rai **4.** Bal Gangadhar Tilak

34. Name the Bhakti Saint from South India who was initially a Jaina and a minister in the court of a Chalukya king in the twelfth century.
1. Karaikkal Ammaiyar **2.** Basavanna
3. Eknath **4.** Tallapaka Annamacharya

35. Which amendment of Indian Constitution removed the right to property from the list of fundamental rights?
1. 41st **2.** 42nd **3.** 43rd **4.** 44th

36. Who was the founder of Benaras Gharana of Kathak?
1. Ishwari Prasad **2.** Shambhu Maharaj
3. Raja Chakradhar Singh **4.** Janaki Prasad

37. What happens to the guard cells when water flows into them?
1. The guard cells close. **2.** Stomatal pores open.
3. Stomatal pores shrink. **4.** Stomatal pores close.

38. The question consists of two statements, namely, Assertion (A) and Reason (R). Use them to choose the correct alternative.
Assertion (A): During the British rule, India's exports exceeded the imports leading to surplus of balance of trade.
Reason (R): The surplus of balance of trade was used for growth and development of India.
1. Both A and R are true, and R is the correct explanation of A
2. Both A and R are true, but R is not the correct explanation of A
3. A is false but R is true **4.** A is true and R is false

39. The Mauryan pillar capital found at _____ is popularly known as the Lion Capital.
1. Bhabru **2.** Bairat **3.** Sanchi **4.** Sarnath

40. How many engines drive 'PM Gati Shakti', a project launched by the central government with an aim to revolutionise infrastructure in India?
1. Two **2.** Seven **3.** Nine **4.** Four

41. Where is the National Dope Testing Laboratory located?
1. Mumbai **2.** Bangalore **3.** Punjab **4.** New Delhi

42. Pandit Ram Narayan was associated with which of the following instruments?
1. Ghatam **2.** Tabla **3.** Bansuri **4.** Sarangi

43. In January 2022, the Supreme Court conferred daughters with equal right to the father's property even prior to codification of Hindu Personal Laws and enactment of the Hindu Succession Act in _____.
1. 1959 **2.** 1952 **3.** 1947 **4.** 1956

44. Who coined the term 'zeroth law of thermodynamics' in 1931, which asserts that two bodies in equilibrium with a third are in equilibrium with each other?
1. James Clerk Maxwell **2.** Max Planck
3. Josiah Willard Gibbs **4.** Ralph H Fowler

45. Which of the following is NOT included in capital receipts?
1. Foreign aid **2.** Taxes
3. Recovery of loans **4.** Borrowings

46. What is the name of the portal launched by the Government in 2022 that aims to ease the loan application and disbursement process by the applicant?
1. Swayatta **2.** Jan Samarth **3.** E- Shram **4.** Yukti

47. In which year did Narendra Modi propose to celebrate a day for yoga as 'International Day of Yoga' while speaking at the United Nations General Assembly?
1. 2013 **2.** 2015 **3.** 2016 **4.** 2014

48. What would happen if the difference in pressure in Tahiti was negative?
1. Above average late monsoon **2.** Drought
3. Below average and late monsoon
4. Above average and early monsoon

49. In which year was an approach and program named Joint Forest Management (JFM) launched in the context of National Forest Policy?
1. 1965 **2.** 1988 **3.** 1996 **4.** 1947

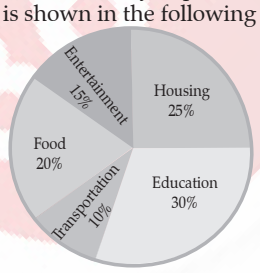
50. Which Session of Congress and Muslim League reached an understanding of creating a joint front against the British regime?
1. Bombay **2.** Allahabad **3.** Lucknow **4.** Delhi

Quantitative Aptitude

51. If the measure of one angle of a right triangle is 30° more than the measure of the smallest angle, then the measure of the smallest angle is:
1. 90° **2.** 60° **3.** 30° **4.** 75°

52. How many of the following numbers are divisible by 3 but NOT by 9?
5826, 5964, 6039, 6336, 6489, 6564, 6867 and 6960
1. 5 **2.** 3 **3.** 4 **4.** 6

53. The distribution of monthly expenditure of Ramesh on various items is shown in the following pie chart.



If the monthly income of Ramesh is ₹45,000, then find his total monthly expenditure (in ₹) on housing and transportation.
1. 16,800 **2.** 15,750 **3.** 11,250 **4.** 13,500

54. The sum of the cubes of two given natural numbers is 9728, while the sum of the two given numbers is 32. What is the positive difference between the cubes of the two given numbers?
1. 6272 **2.** 5832 **3.** 4662 **4.** 7904

55. A circular arc whose radius is 4 cm makes an angle 45° at the centre. Find the perimeter of the sector formed. (Take $\pi = \frac{22}{7}$)
1. $\frac{78}{7}$cm **2.** $\frac{72}{7}$cm **3.** $\frac{74}{7}$cm **4.** $\frac{76}{7}$cm

56. Which number among 11368, 11638, 11863 and 12638 is divisible by 11?
1. 11368 **2.** 12638 **3.** 11638 **4.** 11863

57. The curved surface area of a right circular cylinder of height 56 cm is 1408 cm^2. Find the diameter of the base of the cylinder.
1. 8m **2.** 0.04m **3.** 0.08m **4.** 0.008m

58. Select the correct statement about the properties of a triangle.
1. The sum of two sides may be equal to the third side.
2. The sum of two sides is always equal to the third side.
3. The sum of two sides is always greater than the third side.
4. The sum of two sides is always less than the third side.

59. Sara can finish a work in 18 days and Tara can complete the same work in 15 days. Tara worked for 10 days and left the job. In how many days can Sara finish the remaining work alone?
1. 6 **2.** 7 **3.** 8 **4.** 5

60. If $\left(x+\frac{1}{x}\right)=6$, and $x>1$, find the value of $\left(x^2-\frac{1}{x^2}\right)$.
1. $18\sqrt{2}$ **2.** $30\sqrt{2}$ **3.** $24\sqrt{2}$ **4.** $12\sqrt{10}$

61. The third proportional to 7 and 63 is:
1. 576 **2.** 567 **3.** 441 **4.** 625

62. 40 men can complete a work in 30 days. However, if 10 men leave the group, how many days will the group take to complete the work?
1. 40 **2.** 35 **3.** 45 **4.** 50

63. If the cost price of 28 oranges is equal to selling price of 24 oranges, then the profit percentage is:
1. $16\frac{2}{3}\%$ **2.** $16\frac{1}{3}\%$ **3.** $18\frac{2}{3}\%$ **4.** $18\frac{1}{3}\%$

64. A 252 m long train is running at a speed of 125 km/h. What is the time (in seconds) in which it will pass a man who starts from the engine running at the speed of 17 km/h in the same direction as that of the train?
1. 7.6 **2.** 8 **3.** 8.4 **4.** 6.4

65. If $\tan^4\theta + \tan^2\theta = 1$, what is the value of $11(\cos^4\theta + \cos^2\theta)$?
1. −11 **2.** 8 **3.** 0 **4.** 11

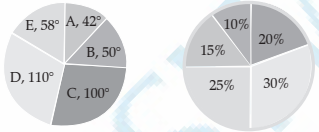
66. Evaluate the following $\sqrt{2+\sqrt{2+\sqrt{2+2\cos 8\theta}}}$
1. $2\cos\theta$ **2.** $2\cos 2\theta$ **3.** $\sin 2\theta$ **4.** $\cos 2\theta$

67. Simplify the expression. $\frac{7.35\times7.35-2.25\times2.25}{0.24}$
1. 204 **2.** 320 **3.** 225 **4.** 304

68. Avinash's monthly salary is ₹50,000 and his monthly expenditure is ₹18,000. Radha's monthly salary is ₹60,000 and her monthly expenditure is ₹24,000. Find the ratio of Radha's savings to Avinash's saving's.
1. 9 : 8 **2.** 9 : 7 **3.** 6 : 5 **4.** 8 : 7

69. A can finish a job in 8 hours and B can finish the same job in 12 hours independently. If they work simultaneously, in how many hours can they do the same job?
1. 4.8 **2.** 3.7 **3.** 4.5 **4.** 3.2

70. The following pie charts show the data of the number of appeared and passed students of class 12 in sections A, B, C, D and E.



How many students failed in Section C?
1. 250 **2.** 200 **3.** 300 **4.** 400

71. In a circular path of 600 m, Pankaj and Rohit start walking in opposite directions from the same point at the speeds of 2.85 m/s and 5.4 km/h, respectively. After how many minutes will they meet for the first time? (Rounded off to one decimal point)
1. 3.2 **2.** 2.3 **3.** 2.7 **4.** 4.7

72. The average of all prime numbers between 32 and 69 is:
1. 52.5 **2.** 60 **3.** 51 **4.** 56.5

73. If $7\cot P = 24$, then find $\sin P$.
1. $\frac{625}{7}$ **2.** $\frac{24}{25}$ **3.** $\frac{49}{625}$ **4.** $\frac{7}{25}$

74. In what time will ₹3,720 amount to ₹5,282.4 at 12% simple interest per annum?
1. 3 years **2.** $3\frac{1}{2}$ years **3.** $5\frac{1}{2}$ years **4.** 5 years

75. Ram can complete a piece work in 15 days, Rohan in 25 days, and Rohit in 30 days. Rohan and Rohit worked together for 2 days and then Rohit was replaced by Ram. In how many days altogether was the work completed?
1. 10 days **2.** 8 days **3.** 12 days **4.** 7 days

English Comprehension

76. Select the most appropriate option that can substitute the underlined segment in the given sentence.
Polyethylene terephthalate, one of the most often recycled plastics and the material used in the majority of water and soda bottles, <u>can be transformed</u> into everything from polyester fabric to automotive parts.
1. might be placed **2.** might be evolved
3. may be converted **4.** may be devaluated

77. Select the most appropriate synonym of the underlined word.
I have thus far sketched the events of my life, but I have not shown how much I have depended on books not only for pleasure and for the <u>wisdom</u> they bring to all who read, but also for that knowledge which comes to others through their eyes and their ears.
1. clarity **2.** folly **3.** insight **4.** emotion

78. Select the option that expresses the given sentence in active voice.
The deer was killed by the boar.
1. The deer killed the boar.
2. The boar was killing the deer.
3. The boar was killed by the deer.
4. The boar killed the deer.

79. Select the most appropriate option to fill in the blank.
She could easily eat the _____ biryani by herself.
1. haul **2.** whole **3.** hall **4.** hole

80. Select the option that can be used as a one-word substitute for the given group of words.
A place where airplanes are kept for maintenance
1. Hanger **2.** Scullery **3.** Hangar **4.** Aviary

81. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.
It can/get extreme cold/during/the winters.
1. the winters **2.** during **3.** It can **4.** get extreme cold

82. Select the INCORRECTLY spelt word.
1. Dearth **2.** Acceptible **3.** Corrupt **4.** Barely

83. Select the INCORRECTLY spelt word.
1. Sufficeint **2.** Syrup **3.** Superior **4.** Shrubbery

84. Select the most appropriate ANTONYM of the underlined word.
My niece is an <u>amateur</u> artist. I hope she becomes famous one day.
1. Boring **2.** Freelancing **3.** Expert **4.** Decent

85. Select the most appropriate option to substitute the underlined segment in the given sentence.
The secretary to my boss is very efficient as he not only gives him the required information <u>and also handles</u> correspondence independently.
1. yet also handles **2.** but also handles
3. along with also handles **4.** not also handles

86. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.
A. My grandmother always went to school with me because the school was attached to the temple.
B. When we both finished, we would be back together.
C. While the children sat in rows on either side of the verandah singing the alphabet or prayer in chorus, my grandmother sat inside reading the scriptures.
D. The priest taught us the alphabet and the morning prayer.
1. ACBD **2.** ABDC **3.** ADCB **4.** ADBC

87. Select the most appropriate synonym to substitute the underlined word.
The weather forecast mentioned that there would be a cloud burst this afternoon.
1. rainstorm **2.** sandstorm **3.** famine **4.** snowfall

88. Select the most appropriate option to fill in the blank.
Keats and Shelly were poets of the same period; in other words, they were _____.
1. contemporaries **2.** co-writers
3. colleagues **4.** associates

89. Select the most appropriate meaning of the given idiom.
Get up on the wrong side of the bed
1. Someone who is having a horrible day
2. Destroy or ruin a plan
3. Someone who is having a good day
4. Go to bed or go to sleep

90. Identify the option that can be substituted as the correct idiom for the underlined part of the given sentence.
My cousin sister Neetu had an aerial view of the trade fair from the top of the giant wheel.
1. A bird in the gilded cage **2.** Bird's eye view
3. Birds of same feather **4.** Bird brain

91. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.
A. He later tried to franchise his restaurant.
B. Colonel Harland Sanders' real-life story of being disappointed numerous times in his life and still making his ambition come true late in life is truly motivating.
C. He began selling chicken at the age of 40, but his dream of opening a restaurant was repeatedly denied owing to conflicts and wars.
D. He is a seventh-grade dropout who tried many things in life but found them bitter.
1. BCDA **2.** BDCA **3.** BDAC **4.** BACD

92. Select the option that expresses the given sentence in passive voice.
We are organising the charity function tomorrow.
1. The charity function is been organised tomorrow.
2. The charity function is being organised tomorrow.
3. The charity function is being organise tomorrow.
4. The charity function is organised tomorrow.

93. Identify the option that arranges the given parts in the correct order to form a meaningful and coherent paragraph.
A. In Shakespeare's hands, English drama
B. that first shone forth in his early history plays
C. William Shakespeare is considered as the greatest dramatist and poet of English language.
D. achieved a matchless brilliance
1. d, b, a, c **2.** a, b, c, d **3.** c, a, d, b **4.** b, c, a, d

94. Select the most appropriate ANTONYM of the word 'Naive' from the given sentence.
After years of working in politics, she had become cynical and jaded, convinced that all politicians were corrupt and that the system was rigged against the people.
1. Jaded **2.** Corrupt **3.** Cynical **4.** Convinced

95. Select the most appropriate phrasal verb to fill in the blank.
The driver very subtly _____ the traffic violation he committed.
1. ironed through **2.** ironed in
3. ironed out **4.** ironed aside

Comprehension:
In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.
Colonialism had a great impact on the lives of the aboriginal Australians who were eventually (1) _____ by the whites with all power and privilege. The colonisers turned their land into rubbish pits and (2) _____ sites for their own betterment. The aborigines were often (3) _____ as sub-humans with low status and dirty habits. The whites not only displaced the tribes off their homeland but also (4) _____ the beauty and balance of the natural world. An increase in deforestation and destruction of traditional land led (5) _____ like emu, eagle, and kangaroo, among many others to dwindle over time.

96. Select the most appropriate option to fill in blank number 1.
1. caught **2.** understood **3.** subjugated **4.** raised

97. Select the most appropriate option to fill in blank number 2.
1. dating **2.** construction **3.** halting **4.** recreation

98. Select the most appropriate option to fill in blank number 3.
1. created **2.** perceived **3.** received **4.** led

99. Select the most appropriate option to fill in blank number 4.
1. destroyed **2.** climbed **3.** utilised **4.** fed

100. Select the most appropriate option to fill in blank number 5.
1. fauna **2.** pets **3.** thugs **4.** homies

Answer Key

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

Answers with Explanations

General Intelligence and Reasoning

1. Option (1) is correct.
Explanation: 19 : 34 :: 5 : 6 :: 27 : 50
Logic: $19 \times 2 - 4 = 34$
$5 \times 2 - 4 = 6$
$27 \times 2 - 4 = 50$

2. Option (2) is correct.
Here, (4, 3, 16) $\Rightarrow 4 \times 3 + 4 = 16$
and (6, 4, 28) $\Rightarrow 6 \times 4 + 4 = 28$
Checking option (2),
(8, 2, 20) $\Rightarrow 8 \times 2 + 4 = 20$

3. Option (1) is correct.
Explanation: Interchange × and – and using BODMAS Rule,
$171 \div 3 \times 16 + 72 - 412$
$57 \times 16 + 72 - 412$
$912 + 72 - 412 = 572 = RHS$

4. Option (2) is correct.
Explanation: E – 3 → B, B – 6 → V
G – 2 → E, E → T
B – 2 → Y, B → Y
J – 3 → G, G → Q
Hence, only GET is a meaningful word

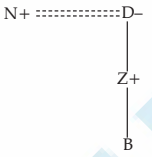
5. Option (3) is correct.
Explanation: Interchange + and – and using BODMAS Rule,
$17 \times 4 - 6 \div 2 + 27$
$17 \times 4 - 3 + 27$
$68 - 3 + 27 = 92 = RHS$

6. Option (1) is correct.
Explanation:
Logic: Table of Alphabetical series (point to remember)

Alphabets	A	B	C	D	E	F	G	H	I	J	K	L	M
Positional value	1	2	3	4	5	6	7	8	9	10	11	12	13
Alphabets	Z	Y	X	W	V	U	T	S	R	Q	P	O	N
Positional value	26	25	24	23	22	21	20	19	18	17	16	15	14

P + 4 → T, T + 4 → X, X + 4 → B, B + 4 → F
Q – 2 → O, O – 2 → M, M – 2 → K, K – 2 → 1
S + 3 → V, V + 3 → Y, Y + 3 → B, B + 3 → E
T – 1 → S, S – 1 → R, R – 1 → Q, Q – 1 → P

7. Option (1) is correct.
Explanation:



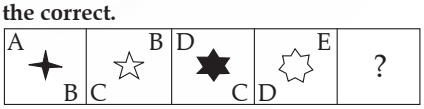
Hence, N is the paternal grandfather of B.

8. Option (1) is correct.
Explanation:

From the Venn diagram, neither Conclusion I nor Conclusion II follows.

9. Option (3) is correct.
Explanation: S_UCTSR__T_RUE_SR__T
Logic: SRU/CT/SRU/DT/SRU/ET/SRU/FT

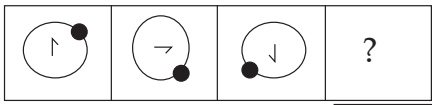
10. Option (4) is the correct.
Explanation:



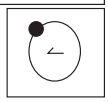
Logic: Follow the pattern and the sequence. Hence,

11. Option (3) is correct.
Explanation: India : Royal Bengal Tiger :: Australia : ?
Logic: The Royal Bengal tiger is the national animal of India. Similarly, Kangaroo is the National animal of Australia.

12. Option (4) is correct.
Explanation:



Logic: The inner figure inside the circle is moving 90 degrees clockwise. Hence,

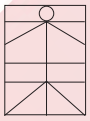


13. Option (2) is correct.
Explanation: 11, 36, ?, 121, 185, 266
Logic:
$11 + 5^2 = 36$
$36 + 6^2 = 72$
$72 + 7^2 = 121$
$121 + 8^2 = 185$
$185 + 9^2 = 266$

14. Option (3) is correct.
Explanation:
Logic:
F + 2 → H
A + 3 → D
R + 2 → T
M + 3 → P
Similarly,
F + 2 → H
O + 3 → R
O + 2 → Q
D + 3 → G

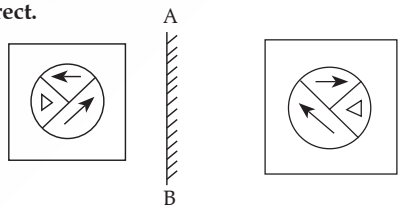
15. Option (4) is correct.
Explanation:

Logic:



16. Option (2) is correct.
Here, (8, 12, 18) = (3 + 5, 7 + 5, 13 + 5)
and (13, 17, 23) = (3 + 5 + 5, 7 + 5 + 5, 13 + 5 + 5)
Checking option (2),
(18, 22, 28) = (3 + 5 + 5 + 5, 7 + 5 + 5 + 5, 13 + 5 + 5 + 5)

17. Option (1) is correct.
Explanation:



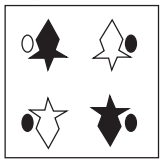
Logic: In the mirror image left becomes right and right becomes left. Hence,

18. Option (2) is correct.
Explanation: 7 * 5 * 4 * 2 * 3 * 7
Logic: 7 + 5 – 4 ÷ 2 – 3 = 7
LHS = 7 + 5 – 2 – 3
12 – 5 = 7 = RHS

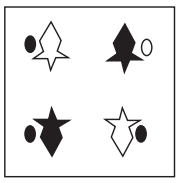
19. Option (1) is correct.
Explanation: COMFORT : FMOCTRO :: DIGNITY : NGIDYTI :: FOREIGN : ?
Logic:
C O M F ← F M O C
O R T ← T R O
F O R E ← E R O F
I G N ← N G I

20. Option (3) is correct.
Explanation: L M T R A/L M T R A/L M T R A/L M T R A

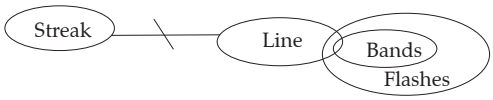
21. Option (2) is correct.
Explanation:



Logic:
Following the pattern and the symmetry.
Hence,



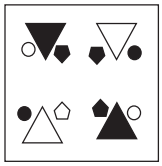
22. Option (4) is correct.
Explanation:



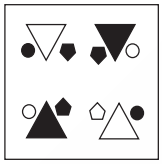
From the Venn diagram neither conclusion I nor II follows.

23. Option (3) is correct.
Here, (239, 127, 212) = 239 – 127 + 100 = 212
and (96, 64, 132) = 96 – 64 + 100 = 132
Checking option (3),
(167, 89, 178) = 167 – 89 + 100 = 178

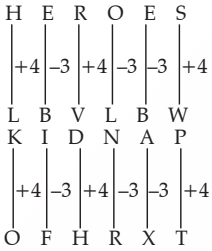
24. Option (2) is correct.
Explanation:



Logic:
Following the pattern and the symmetry. Hence,



25. Option (3) is correct.
Explanation:



General Awareness

26. Option (4) is correct.
The Shevaroy Hills are located in the Tamil Nadu state of India. The Shevaroy hill range is positioned to the northeast of Salem, approximately 26 km away, forming a significant feature of the Eastern Ghats. Covering an expanse of about 8640 square kilometres, this hill range includes the Shevaroy hills, encompassing a space of 40 square kilometres. Notably, Yercaud stands as a popular hill station within this region.

Comprising mainly of archean charnockites, intermingled with a limited layer of granite gneiss, the Shevaroys exhibit geological richness. The laterite found here is notable for its high content of hydrated alumina, with estimated bauxite reserves surpassing 15 million tons. These bauxite deposits vary in thickness, spanning from 5 to 20 meters. The geological formations in this area are characterized by prevailing north-northeast to south-southeast orientation, with a distinctive dip towards the southeast. On the slopes of the Shevaroys, the soil predominantly comprises red sandy loam.

27. Option (3) is correct.
Article 72 of the Indian Constitution grants the President of India the power to grant pardons, reprieves, respites, or remissions of punishment or to suspend, remit, or commute the sentence of any person convicted of any offence. This power is derived from the President's role as the head of the state and the highest executive authority in the country.

The President's power to grant pardons is a discretionary power, meaning it is exercised at the President's own discretion and judgment. However, it is exercised on the advice of the Council of Ministers. The Council of Ministers usually considers the recommendations of the Home Ministry and other relevant authorities before making a recommendation to the President.

28. Option (2) is correct.
"Nalacharitham," authored by Unnayi Warrier, is a Kathakali play (Aattakatha). Adapted from the Mahabharatha, it narrates the saga of King Nalan and his consort Damayanthi. The play is divided into four segments – referred to as First, Second, Third, and Fourth Day – each section possesses sufficient length for an entire night's performance. The narrative foundation originates from the Nalan and Damayanthi tale within the Mahabharatha. In the 18th century, Unnayi Warrier meticulously reconfigured this narrative to suit the artistic medium of Kathakali, culminating in the creation of "Nalacharitham Attakatha."

"Nalacharitham" stands as an exemplar of romantic artistry crafted within the framework of Kathakali's classical essence. Its intricate construction has led to it being hailed as the "Shakuntalam" of Malayalam literature. This evocative work remains an artistic homage to love, intrigue, and the timeless appeal of storytelling, resonating with the core of Kathakali's classical heritage.

29. Option (2) is correct.
The inaugural Republic Day Parade occurred on January 26, 1950, with President Sukarno of Indonesia as the distinguished guest of honour. From 1950 to 1954, the Republic Day parades were held at diverse venues including Irwin Stadium (now National Stadium), Kingsway, Red Fort, and Ramlila Maidan. This date also marked the commencement of Dr. Rajendra Prasad's initial term as the President of India. Preceding Republic Day, the President addresses the nation. The festivities encompass three pivotal components: the Republic Day Parade, the Beating Retreat ceremony, and the distribution of awards.

30. Option (2) is correct.
Acetic acid, an organic compound, falls within the category of carboxylic acids. Its chemical formula is CH_3COOH, encompassing a carboxyl functional group to which a methyl group is attached. The melting point of acetic acid is 290 K or around 16.5°C, leading to its tendency to freeze during colder winter periods in regions with cold climates. Ethanoic acid serves as the IUPAC name for acetic acid. In contrast, ethanol consistently exists as a liquid at room temperature, boasting a melting point of 156 K and a boiling point of 351 K. Ethanol stands as a pivotal ingredient in various alcoholic beverages. Moreover, it plays a vital role in the formulation of medicines like cough syrups, tonics, and tinctures of iodine due to its exceptional solvent properties. Ethanol is well-known for its remarkable solubility in water at any proportion.

31. Option (2) is correct.
In India, an educated type of unemployment is created due to a lack of employable skills among educated youths in India. Labour scarcity is evident in specific regions, while labour surplus is noticeable in others. Individuals with technical qualifications often encounter unemployment due to their technical education falling short of industry benchmarks, resulting in a deficiency of skilled workforce. Unemployment linked to education emerges when individuals with advanced educational backgrounds struggle to secure employment. One of the predominant causes of elevated unemployment rates among educated young men in India is lack of industrial and technological training.

Cyclical unemployment holds a pivotal role in driving high unemployment rates, stemming from business cycle downturns. These downturns are integral parts of the periodic ebbs and flows in economic growth. The duration of recession-triggered economic contractions influences the temporary nature of cyclical unemployment.

Structural unemployment arises due to a mismatch between available job positions and the competencies of individuals accessible in the workforce. In India, many individuals fail to

secure jobs owing to inadequate skills and low educational attainment, posing a challenge to their employment prospects.

Technological unemployment, on the other hand, ensues from the integration of novel technologies into the economy. This leads to job automation previously carried out by human workers or the replacement of labour with automated machinery. This type of unemployment, inherently structural, stems from technological advancements.

32. Option (2) is correct.

Nikhat Zareen and Nitu both won gold medals at the 73rd Strandja Memorial Boxing Tournament, held in Sofia, Bulgaria in February 2022.

Nikhat Zareen won the gold medal in the 52 kg weight category, defeating her Bulgarian opponent, Stoyka Krasteva, by a score of 5-0. This was Zareen's second gold medal at the Strandja Memorial Boxing Tournament.

Nitu won the gold medal in the 48 kg weight category, defeating her Ukrainian opponent, Hanna Okhota, by a score of 4-1. This was Nitu's first gold medal at the Strandja Memorial Boxing Tournament.

33. Option (4) is correct.

Fergusson College, a renowned educational institution located in Pune, India, owes its foundation to the visionary efforts of Bal Gangadhar Tilak, a prominent freedom fighter, social reformer, and educator. The college was established in 1885, and its formation was driven by Tilak's commitment to providing modern education infused with a sense of Indian cultural and national identity.

Tilak recognized the need for higher education that blended Western knowledge with Indian values and traditions. He believed that such an education system would empower the youth and contribute to India's progress. Fergusson College was established with this ethos, aimed at nurturing well-rounded individuals with a strong sense of patriotism and dedication to the country's advancement.

The college was initially named "Deccan Education Society's Fergusson College" in honour of Sir James Fergusson, the then Governor of Bombay Presidency, who supported Tilak's educational endeavours. The establishment of Fergusson College marked a departure from the prevailing education system, focusing on holistic development and fostering a sense of national pride.

34. Option (2) is correct.

The Bhakti Saint from South India who was initially a Jaina and a minister in the court of a Chalukya king in the twelfth century is Basavanna.

Basavanna was born in the town of Bagevadi in Karnataka. He was a brilliant scholar and a talented poet. He was also a staunch Jaina and served as a minister in the court of the Chalukya king Bijjala II.

However, Basavanna had a spiritual crisis in his early 30s. He was dissatisfied with the Jaina philosophy and he began to question the caste system. He eventually renounced his Jaina faith and became a Lingayat, a Hindu sect that emphasized the worship of the lingam, a symbol of Shiva.

Basavanna became a vocal critic of the caste system and he advocated for social equality. He also founded the Virashaiva movement, which was a major force for social reform in medieval India.

Basavanna is considered to be one of the most important Bhakti saints in Indian history. He is credited with popularizing the use of the Kannada language in literature and with promoting the cause of social justice. His poems are still recited today and they continue to inspire people all over the world.

35. Option (4) is correct.

The 44th Amendment of the Indian Constitution removed the right to property from the list of fundamental rights. The right to property was originally included in the Constitution as a fundamental right in Article 31. However, the 44th Amendment, which was passed in 1978, deleted Article 31 and replaced it with Article 300-A, which guarantees the right to property as a legal right, but not as a fundamental right. The 44th Amendment was passed by the Indira Gandhi government. The government argued that the right to property was being misused by the wealthy to exploit the poor. The government also argued that the right to property was hindering economic development. The 44th Amendment was controversial and it was challenged in the Supreme Court. However, the Supreme Court upheld the amendment in the case of Minerva Mills Vs. Union of India (1980).

36. Option (4) is correct.

The Kathak style known as the Banaras Gharana originated through the efforts of Jankiprasad, who hailed from Bikaner initially. As he imparted the intricacies of this ancient dance form to his disciples, he laid the foundation for the Banaras Gharana of Kathak. Distinguished by their distinctive approach, practitioners of the Kathak Banaras Gharana confidently execute spins from both the right and left sides. This Gharana stands apart from others in several aspects, encompassing the rendition of that (a segment of performance) and the Tatkaar (footwork) techniques.

37. Option (2) is correct.

Guard cells undergo swelling as water enters them, leading to the opening of the stomatal pore. These specialized cells encircle each stoma, being present on both the upper and lower epidermis of leaves. Their primary role encompasses the regulation of stomatal opening and closure, facilitation of transpiration control, and safeguarding the stomatal pore.

Guard cells envelop the stomata, which are minute openings on leaf surfaces. These cells possess the pivotal role of governing the initiation and termination of stomatal function. As water infiltrates the guard cells, they expand, resulting in the unfolding of the stomatal pore. This mechanism enables the diffusion of carbon dioxide and oxygen into and out of the leaf. Carbon dioxide, essential for photosynthesis, is utilized by the plant to produce nourishment, while oxygen is released as a byproduct of the photosynthesis process.

Upon water exiting the guard cells, they contract, thereby causing the stomata to close. This closure mechanism aids in preventing the loss of water from the leaf. Consequently, it can be established that the influx of water into the guard cells is directly linked to the opening of stomatal pores.

38. Option (4) is correct.

Assertion (A) is true. During British rule, India's exports exceeded the imports leading to a surplus in the balance of trade. This was because India was exporting raw materials, such as cotton and jute, to Britain at very low prices. Britain was then using these raw materials to produce finished goods, which were then sold back to India at much higher prices. This created a trade imbalance in favour of Britain.

Reason (R) is false. The surplus of the balance of trade was not used for the growth and development of India. Instead, it was used to finance Britain's industrial revolution and to pay for the costs of maintaining the British Empire.

The British Raj did not invest in the development of India's infrastructure, such as roads, railways, and ports. This made it difficult for India to industrialize and compete with Britain in the global economy.

The British Raj also imposed high taxes on India, which drained the country's wealth. This money was then used to finance Britain's wars and to pay for the salaries of British officials in India.

As a result of British rule, India became a poor and underdeveloped country. The surplus of the balance of trade did not benefit the Indian people. Instead, it benefited the British Empire.

39. Option (4) is correct.

The Lion Capital of Ashoka is a sculpture that was found at Sarnath, a town in Uttar Pradesh, India. It is the capital, or topmost part, of a pillar that was erected by the Mauryan emperor Ashoka in the 3rd century BCE. The capital is made of polished sandstone and it is about 7 feet tall.

The Lion Capital is crowned by four lions that are standing back to back. The lions are facing the four cardinal directions. The lions are supported by a lotus flower. Below the lions is a frieze that depicts a herd of elephants.

The Lion Capital is a symbol of the Mauryan Empire and it is also a symbol of Buddhism. The lions represent the power and strength of the empire, while the lotus flower represents purity and enlightenment. The herd of elephants represents the peace and prosperity that the empire brought to India.

The Lion Capital is one of the most famous sculptures in India and it is a UNESCO World Heritage Site. It is a reminder of the greatness of the Mauryan Empire and the importance of Buddhism in Indian history.

40. Option (2) is correct.

The PM Gati Shakti project, launched by the central government with an aim to revolutionise infrastructure in India, has seven engines.

The seven engines of PM Gati Shakti are Roads, Railways, Airports, Ports, Waterways, Mass transport, and Logistics infrastructure.

The PM Gati Shakti project aims to create a seamless multimodal transportation network that will connect all parts of India. The project will also focus on improving the efficiency of the logistics sector and reducing the cost of transportation.

The PM Gati Shakti project is a major initiative of the central government to boost infrastructure development in India. The project is expected to create millions of jobs and boost economic growth.

41. Option (4) is correct.

The National Dope Testing Laboratory (NDTL) is located in New Delhi. It is a premier laboratory that conducts dope tests for athletes and sportspersons in India. The NDTL is also responsible for developing and validating testing methods for doping substances.

The NDTL was established in 1990 by the Sports Authority of India (SAI). The laboratory is accredited by the World Anti-Doping Agency (WADA) and it is one of the most advanced doping testing laboratories in the world.

The NDTL has a team of experienced scientists and technicians who are equipped with the latest equipment to conduct dope tests. The laboratory has a wide range of testing methods for doping substances, including gas chromatography-mass spectrometry (GC-MS), liquid chromatography-mass spectrometry (LC-MS), and enzyme-linked immunosorbent assay (ELISA).

The NDTL conducts dope tests for athletes and sportspersons at all levels, from the grassroots to the international level. The laboratory also conducts dope tests for sports events, such as the Olympics, the Commonwealth Games, and the Asian Games.

The NDTL is a valuable asset to the Indian sports fraternity. The laboratory helps to ensure that athletes and sportspersons compete in a doping-free environment.

42. Option (4) is correct.

Pandit Ram Narayan is associated with the sarangi, a bowed stringed instrument that is popular in North India. He is considered to be one of the greatest Sarangi players of all time. Ram Narayan was born in 1927 in a village in Rajasthan, India. He started learning the sarangi at the age of five from his father, who was also a sarangi player. He moved to Mumbai in the early 1950s to pursue a career in music. Ram Narayan quickly became one of the most sought-after Sarangi players in Mumbai. He performed all over India and he also toured internationally. He collaborated with some of the biggest names in Indian classical music, including Ravi Shankar, Ali Akbar Khan, and Kumar Gandharva. Ram Narayan was also a pioneer in the field of sarangi music. He experimented with new techniques and he adapted the sarangi to play a wider range of music. He is credited with popularizing the sarangi outside of India. Ram Narayan was awarded the Padma Bhushan, the third-highest civilian award in India, in 1991. He died in 2018 at the age of 90.

43. Option (4) is correct.

The Supreme Court (SC) has ruled that daughters will have equal rights to their father's property even prior to the enactment of the Hindu Succession Act (HSA) of 1956.

The case involved a dispute over the property of a person who died in 1949 leaving behind a daughter who also died issueless in 1967.

Earlier, the trial court held that since the person had died prior to the enforcement of HSA, 1956 therefore the petitioner and her other sisters were not the heirs as of the date of his death and were not entitled to partition of share in the suit properties. Later, the High Court, too, dismissed the appeal against the trial court.

44. Option (4) is correct.

The Zeroth Law of Thermodynamics, a fundamental principle in thermodynamics, asserts that if two systems are both in a state of thermal equilibrium with a third system, they must also be in a state of thermal equilibrium with each other. In essence, this law establishes temperature as a measure that enables the comparison of two systems. When two systems share the same temperature, they are considered to be in a state of thermal equilibrium.

Introduced by Ralph H. Fowler in 1931, the Zeroth Law of Thermodynamics holds the moniker "Zeroth" as it was formulated subsequent to the establishment of the initial three laws of thermodynamics. These initial laws encompass energy conservation, the direction of spontaneous processes, and system entropy.

Temperature emerges as a characteristic that serves as a basis for the comparison of two systems, in accordance with the principles of the Zeroth Law of Thermodynamics.

45. Option (2) is correct.

Capital receipts are the inflow of funds that increase the assets of the government. They are classified into two categories:

Revenue capital receipts: These are receipts that are not recurring in nature and do not create any liability for the government. They include proceeds from the sale of assets, such as land and buildings, and receipts from privatization.

Capital receipts: These are receipts that are recurring in nature and create a liability for the government. They include loans, borrowings, and grants.

Taxes are not included in capital receipts because they are recurring in nature and do not create any liability for the government. Taxes are used to finance the government's current expenditures.

The other three options, foreign aid, recovery of loans, and borrowings are all included in capital receipts. Foreign aid is a grant that is given to the government by a foreign government or organization. Recovery of loans is the amount of money that the government collects from borrowers who have defaulted on their loans. Borrowings are funds that the government raises from the public or financial institutions.

46. Option (2) is correct.

On June 6, 2022, Prime Minister Modi initiated the Jan Samarth Portal aimed at credit-linked government schemes. This digital platform serves as a comprehensive hub connecting various government credit schemes. The Prime Minister also marked the commencement of the Iconic Week Celebrations by the Ministries of Finance and Corporate Affairs on June 6, 2022. This Iconic Week (June 6-11, 2022) is an integral part of the 'Azadi ka Amrit Mahotsav' festivities.

Distinguished as a pioneering initiative, this platform fosters direct connectivity between beneficiaries and lending institutions. It ensures a seamless coverage of all the affiliated schemes. The Jan Samarth Portal is a distinct digital platform designed to consolidate 13 Credit Linked Government schemes onto a unified interface.

47. Option (4) is correct.

Prime Minister Narendra Modi proposed to celebrate a day for yoga as "International Day of Yoga" while speaking at the United Nations General Assembly on September 27, 2014.

Modi said in his speech, "Yoga is an invaluable gift of India's ancient tradition. It is not just a set of physical exercises but a way to connect with our inner selves. Yoga brings peace to our minds and harmony to our bodies. It is the journey of the self, towards the self, and with the self."

He further said, "I propose that we declare June 21 as the International Day of Yoga. This is the day the sun is at its highest point in the northern hemisphere. It is the longest day of the year in the Northern Hemisphere and the shortest day of the year in the Southern Hemisphere. It is a day of joy and celebration. It is a day when people come together to celebrate the power of yoga."

The United Nations General Assembly adopted a resolution on December 11, 2014, declaring June 21 as the International Day of Yoga. The first International Day of Yoga was celebrated on June 21, 2015.

The International Day of Yoga is now celebrated all over the world. It is a day when people come together to practice yoga and to learn about the benefits of yoga. It is a day to celebrate the ancient Indian tradition of yoga and its relevance to the modern world.

48. Option (3) is correct.

If the difference in pressure in Tahiti was negative, it would lead to a below-average and late monsoon in India.

The difference in pressure between Tahiti and Darwin is used to predict the strength and timing of the monsoon in India. When the pressure in Tahiti is lower than the pressure in Darwin, it creates a pressure gradient that draws winds from the Indian Ocean to the Pacific Ocean. This causes the monsoon winds to weaken and the monsoon rains to be delayed.

A negative difference in pressure in Tahiti can also lead to drought conditions in India. This is because the monsoon rains are essential for agriculture in India. When the monsoon rains are delayed or below average, it can lead to crop failures and drought conditions.

The last time there was a negative difference in pressure in Tahiti was in 2002. This led to a below-average and late monsoon in India, which caused crop failures and drought conditions in many parts of the country.

49. Option (2) is correct.

Joint Forest Management (JFM) is a forest management approach that involves the participation of local communities and forest dwellers in the management and protection of forest resources. It was introduced in India as a response to the degradation of forest ecosystems and the need to involve local communities in sustainable forest management.

JFM was officially launched in the context of the National Forest Policy in the year 1988. The policy recognized the importance of involving local communities in the conservation and management of forests to address issues of deforestation, over-exploitation of resources, and degradation of forest ecosystems.

Under the JFM approach, local communities are encouraged to actively participate in the protection, regeneration, and sustainable use of forest resources. This often involves joint efforts between forest departments and local communities, where communities are given rights and responsibilities to manage and protect designated forest areas. They may be involved in activities such as afforestation, reforestation, protection against illegal logging, and preventing forest fires.

50. Option (3) is correct.

The Congress and Muslim League reached an understanding of creating a joint front against the British regime in the Lucknow Session of 1916. The agreement between the Congress and the Muslim League in 1916, known as the Lucknow Pact, holds historical significance. During the 1916 session, presided over by Ambikacharan Majumdar, a turning point emerged due to the Anti-British sentiments among Muslims triggered by the war between Britain and Turkey. This event paved the way for the unity between the Congress and the Muslim League.

The Congress and the Muslim League held their sessions concurrently in Lucknow in 1916, culminating in the renowned Lucknow Pact. This pact marked a significant agreement where Congress conceded to the idea of separate electorates, and both organizations jointly advocated for the attainment of dominion status for India.

Quantitative Aptitude

51. Option (3) is correct.

Let the smallest angle of triangle = x

$\therefore$ Another angle of that triangle = $x + 30°$

According to question

$x + (x + 30°) + 90° = 180°$

[Sum of angles of a triangle]

$\Rightarrow 2x + 120° = 180°$

$\Rightarrow 2x = 180° - 120° = 60°$

$\Rightarrow x = \frac{60°}{2} = 30°$

52. Option (3) is correct.

We know that:

(i) Sum of digits of a number is divisible by 3 then the number is also divisible by 3.

(ii) Sum of digits of a number is divisible by 9 then the number is also divisible by 9.

Sum of digits of 5826 = 5 + 8 + 2 + 6 = 21 [Divisible by only 3]

Sum of digits of 5964 = 5 + 9 + 6 + 4 = 24 [Divisible by only 3]

Sum of digits of 6039 = 6 + 0 + 3 + 9 = 18 [Divisible by both 3 & 9]

Sum of digits of 6336 = 6 + 3 + 3 + 6 = 18 [Divisible by both 3 & 9]

Sum of digits of 6489 = 6 + 4 + 8 + 9 = 27 [Divisible by both 3 & 9]

Sum of digits of 6564 = 6 + 5 + 6 + 4 = 21

Sum of digits of 6867 = 6 + 8 + 6 + 7 = 27

Sum of digits of 6960 = 6 + 9 + 6 + 0 = 21

So, there are 4 such numbers which is divisible by 3 but not by 9.

53. Option (2) is correct.

Percentage of total expenditure (monthly) on housing and transportation = 25% + 10% = 35%

$\therefore$ Required amount = $\frac{35}{100} \times 45000 = ₹15{,}750$

54. Option (1) is correct.

Let one number be x.

$\Rightarrow$ Second number = $32 - x$

According to question,

$x^3 + (32 - x)^3 = 9728$

$\Rightarrow x^3 + 32^3 - x^3 - 3x(32 - x)(x + 32 - x) = 9728$

$\Rightarrow 32^3 - 3 \times 32x(32 - x) = 9728$

$\Rightarrow 32^2 - 3x(32 - x) = 304$

$\Rightarrow 1024 - 96x + 3x^2 = 304$

$\Rightarrow x^2 - 32x + 240 = 0$

$\Rightarrow x^2 - 20x - 12x + 240 = 0$

$\Rightarrow (x - 20)(x - 12) = 0$

So, two numbers are 20 & 12.

$\therefore$ Required difference = $20^3 - 12^3 = 8000 - 1728 = 6272$

55. Option (1) is correct.

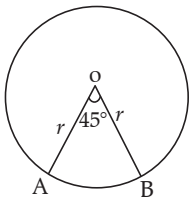
Radius of arc, $r = 4$ cm

Angle of arc, $\theta = 45°$

$\therefore$ Perimeter of arc

$= \frac{\theta}{360°} \times 2\pi r + 2r$

$= \frac{45°}{360°} \times 2 \times \frac{22}{7} \times 4 + 2 \times 4 = \frac{78}{7}$ cm



56. Option (3) is correct.

Divisibility test of 11

[Sum of odd place digits – Sum of even place digits] must be divisible by 11 to have number divisible by 11.

$\therefore$ In 11638
Sum of odd place digits = 1 + 6 + 8 = 15
Sum of even place digits = 1 + 3 = 4
$\therefore$ Difference = 15 – 4 = 11 (Divisible by 11)
$\therefore$ 11638 is divisible by 11.

57. Option (3) is correct.
Let radius of cylinder = r cm
Height of cylinder, h = 56 cm
Curved surface area of cylinder = $2\pi rh$

$$\text{Now, } 2\times\frac{22}{7}\times r\times 56 = 1408$$

$$\Rightarrow \quad 2r = \frac{1408\times 7}{22\times 56}$$

$$\Rightarrow \quad 2r = 8$$

Diameter of the base of the cylinder = 8 cm
= 0.08 m

58. Option (3) is correct.
Since, we know that sum of two sides of a triangle is always greater than the third side.

59. Option (1) is correct.
Sara finishes work in 18 days.
Tara completes work in 15 days.
Now, 10 days work of Tara

$$= 10\times\frac{1}{15} = \frac{2}{3}\text{rd of complete work}$$

$$\text{Remaining work} = 1-\frac{2}{3} = \frac{1}{3}\text{rd}$$

Time needed by Sara to finish remaining work

$$= \frac{\frac{1}{3}}{\frac{1}{18}} = \frac{18}{3} = 6 \text{ days}$$

60. Option (3) is correct.

$$\because \quad x+\frac{1}{x} = 6$$

$$\Rightarrow \quad \frac{x^2+1}{x} = 6 \quad \Rightarrow \quad x^2-6x+1=0$$

Here, $a = 1$, $b = -6$ and $c = 1$

$$\Rightarrow \quad x = \frac{-b\pm\sqrt{b^2-4ac}}{2a} = \frac{6\pm\sqrt{(-6)^2-4\times1\times1}}{2\times1}$$

$$\Rightarrow \quad x = 3\pm\sqrt{8} \qquad [\because\ x > 1]$$

$$\therefore \quad x = 3+\sqrt{8} = 3+2\sqrt{2}$$

$$\text{Now,} \quad x^2-\frac{1}{x^2} = \left(3+2\sqrt{2}\right)^2-\frac{1}{\left(3+2\sqrt{2}\right)^2}$$

$$= \left(17+12\sqrt{2}\right)-\frac{1}{17+12\sqrt{2}}\times\left[\frac{17-12\sqrt{2}}{17-12\sqrt{2}}\right]$$

$$= 17+12\sqrt{2}-\left(17-12\sqrt{2}\right)$$

$$= 24\sqrt{2}$$

61. Option (2) is correct.
If a, b and c are in proportion (c is third proportion)

$$\Rightarrow \quad \frac{a}{b} = \frac{b}{c}$$

$$\therefore \quad \frac{7}{63} = \frac{63}{c}$$

$$\Rightarrow \quad c = \frac{63\times63}{7} = 567$$

62. Option (1) is correct.
40 men can complete a work in 30 days.
$\therefore$ Work (in units)=Men × days
=40 × 30 = 1200 units
1200 units of work can be completed by 30 men.

$$\text{m} = \frac{1200}{30}\text{ days} = 40\text{ days.}$$

63. Option (1) is correct.
If cost price of m articles = selling price of n articles

$$\therefore \text{ Profit percentage} = \frac{m-n}{n}\times100\%$$

According to question
$m = 28$ and $n = 24$

$$\therefore \text{Profit percentage} = \frac{28-24}{24}\times100\% = \frac{4}{24}\times100\% = 16\frac{2}{3}\%$$

64. Option (3) is correct.
Effective speed of train with respect to man = (125 – 17) km/h = 108 km/h = 30 m/s
Time taken to pass man by train

$$= \frac{\text{Length of train}}{\text{Speed of train}} = \frac{252}{30} = 8.4\text{ m}$$

[As man has negligible length with respect to train]

65. Option (4) is correct.

$$\because \quad \tan^4\theta+\tan^2\theta = 1$$

$$\Rightarrow \tan^2\theta\left[\tan^2\theta+1\right] = 1$$

$$\Rightarrow \quad \tan^2\theta\cdot\sec^2\theta = 1 \qquad [\because \tan^2\theta+1=\sec^2\theta]$$

$$\Rightarrow \quad \frac{\sin^2\theta}{\cos^2\theta}\times\frac{1}{\cos^2\theta} = 1$$

$$\left[\because \tan\theta = \frac{\sin\theta}{\cos\theta}, \sec\theta = \frac{1}{\cos\theta}\right]$$

$$\Rightarrow \quad \frac{1-\cos^2\theta}{\cos^4\theta} = 1 \qquad [\because \sin^2\theta = 1-\cos^2\theta]$$

$$\Rightarrow \quad 1-\cos^2\theta = \cos^4\theta$$

$$\Rightarrow \quad 1 = \cos^4\theta+\cos^2\theta$$

$$\Rightarrow \ 11\left[\cos^4\theta+\cos^2\theta\right] = 1\times11 = 11$$

66. Option (1) is correct.

$$\because \cos2\theta = 2\cos^2\theta-1$$

$$\therefore \sqrt{2+\sqrt{2+\sqrt{2+2\cos8\theta}}} =$$

$$\sqrt{2+\sqrt{2+\sqrt{2+2(2\cos^2 4\theta-1)}}}$$

$$= \sqrt{2+\sqrt{2+\sqrt{4\cos^2 4\theta}}} = \sqrt{2+\sqrt{2+2\cos4\theta}}$$

$$= \sqrt{2+\sqrt{2+2\left[2\cos^2 2\theta-1\right]}}$$

$$= \sqrt{2+\sqrt{4\cos^2 2\theta}}$$

$$= \sqrt{2+2\cos2\theta} = \sqrt{2+4\cos^2\theta-2}$$

$$= \sqrt{4\cos^2\theta} = 2\cos\theta$$

67. Option (1) is correct.

$$\frac{7.35\times7.35-2.25\times2.25}{0.24}$$

$$= \frac{(7.35+2.25)(7.35-2.25)}{0.24} \qquad [\because a^2-b^2=(a+b)(a-b)]$$

$$= \frac{9.6\times5.1}{0.24} = 4\times51 = 204$$

68. Option (1) is correct.

$$\text{Required Ratio} = \frac{\text{Radha's saving}}{\text{Avinash's saving}}$$

$$= \frac{\text{Radha's [Salary-Expenditure]}}{\text{Avinash's [Salary-Expenditure]}}$$

$$= \frac{60000-24000}{50000-18000} = \frac{36}{32} = 9:8$$

69. Option (1) is correct.

A can finish job in 8 hours.

B can finish job in 12 hours

$\therefore$ Simultaneously, they will finish the job in $\frac{1}{\frac{1}{8}+\frac{1}{12}}$ hours.

$$= \frac{24}{3+2} = \frac{24}{5} = 4.8 \text{ hours}$$

70. Option (3) is correct.

Number of students appeared in exam from section C $= \frac{100}{360}\times 1800 = 500$

Number of students passed in exam from section C $= \frac{25}{100}\times 800 = 200$

$\therefore$ Number of students failed in section C = 500 – 200 = 300

71. Option (2) is correct.

Effective speed of Pankaj and Rohit

$$= \left(2.85 + 5.4\times\frac{5}{18}\right)\text{m/s}$$

$$= 4.35 \text{ m/s}$$

Time when they will meet first time $= \frac{600}{4.25}\text{s} = 2.29 \text{ min} \approx 2.3 \text{ min}$

72. Option (3) is correct.

Prime numbers between 32 and 69 are 37, 41, 43, 47, 53, 59, 61, 67.

Total number of prime numbers between 32 and 69 = 8

$$\therefore \text{Average} = \frac{37+41+43+47+53+59+61+67}{8} = 51$$

73. Option (4) is correct.

We know that: $\cot\theta = \frac{\cos\theta}{\sin\theta} = \frac{\sqrt{1-\sin^2\theta}}{\sin\theta}$

$$\because \quad 7\cot P = 24$$

$$\Rightarrow \quad \cot P = \frac{24}{7}$$

$$\Rightarrow \quad \frac{\sqrt{1-\sin^2 P}}{\sin P} = \frac{24}{7}$$

Squaring both sides

$$\Rightarrow \quad \frac{1-\sin^2 P}{\sin^2 P} = \frac{576}{49}$$

$$\Rightarrow \quad 49 - 49\sin^2 P = 576\sin^2 P$$

$$\Rightarrow \quad 49 = 625\sin^2 P$$

$$\Rightarrow \quad \sin P = \sqrt{\frac{49}{625}} = \frac{7}{25}$$

74. Option (2) is correct.

A, Amount = ₹ 5282.4

P, Principal = ₹ 3720

Rate of interest, R = 12%

Time = t years

$\therefore$ Simple interest = 5282.4 – 3720 = ₹ 1562.4

$$\therefore \text{Simple interest} = \frac{P\times R\times T}{100}$$

$$\Rightarrow \quad 1562.4 = \frac{3720\times 12\times t}{100}$$

$$\Rightarrow \quad t = 3.5 \text{ years} = 3\frac{1}{2} \text{ years}$$

75. Option (1) is correct.

Ram can finish work in 15 days.

Rohan can finish work in 25 days.

Rohit can finish work in 30 days.

2 days work of Rohan & Rohit

$$= 2\left[\frac{1}{25}+\frac{1}{30}\right]$$

$$= 2\left[\frac{6+5}{150}\right]$$

$$= \frac{11}{75} \text{ parts of work}$$

Remaining work $= 1-\frac{11}{75} = \frac{64}{75}$ parts of work

1 day work of Ram & Rohan

$$= \frac{1}{15}+\frac{1}{25} = \frac{10+6}{150}$$

$$= \frac{8}{75} \text{ parts of work}$$

$\therefore$ Ram & Rohan will finish remaining work in $\frac{64/75}{8/75}$ days i.e., $\frac{64}{8} = 8$ days.

So work will be complete in 8 + 2 = 10 days

English Comprehension

76. Option (3) is correct.

The correct sentence is: Polyethylene terephthalate, one of the most often recycled plastics and the material used in the majority of water and soda bottles, may be converted into everything from polyester fabric to automotive parts. Transformed means to change/convert. Therefore, the best substitute for 'can be transformed' is 'may be converted'. Words like 'placed/evolved/devaluated' have different connotations.

77. Option (3) is correct.

The word 'wisdom' implies 'the fact of being based on sensible or wise thinking'. The sentence speaks of the wisdom/understanding/insight books give. 'Folly' means 'foolishness'; 'clarity' implies 'precision'.

78. Option (4) is correct.

The sentence 'The deer was killed by the boar' is in passive voice, to change in active voice we need to interchange the object and subject with each other, i.e. object of the passive sentence becomes the subject of the active sentence. The correct sentence is: The boat killed the deer. The verb in simple past tense, will change into the form: subject + was/were + past form + object.

79. Option (2) is correct.

The correct sentence is: She could easily eat the whole biryani by herself. 'Haul' implies 'pull or drag with effort or force.' While, 'whole' means the entire part.

80. Option (3) is correct.

'Hanger' refers to 'a shaped piece of wood, plastic, or metal with a hook at the top, from which clothes may be hung in order to keep them in shape.' A 'scullery' is 'a small kitchen or room at the back of a house used for washing dishes and other dirty household work.' An 'aviary' is a large cage, building, or enclosure for keeping birds in, while a 'hangar' is 'a large building with an extensive floor area, typically for housing aircraft.'

81. Option (4) is correct.

The correct sentence is: It can get extremely cold during the winters. The part 'extreme cold' has the error. It must be written as 'extremely cold'. This is because the adjective 'cold' can be modified by an adverb, so 'extremely' is appropriate.

82. Option (2) is correct.

The word 'Acceptible' will be spelled as 'Acceptable', meaning tolerable.

83. Option (1) is correct.

The word 'Sufficeint' will be spelled as 'sufficient', meaning enough.

84. Option (3) is correct.

The word 'amateur' implies 'a person who follows a pursuit without attaining proficiency or professional status'. Therefore, the correct antonym is 'expert'. Other options hardly stand a chance. Moreover, the sentence clarifies that the niece is still to accomplish as an artist, so she is not an expert.

85. Option (2) is correct.

The correct sentence is: The secretary of my boss is very efficient as he not only gives him the required information but also handles correspondence independently. The part 'and also' will be substituted by 'but also'. This is because 'not only… but also' is a conjunction in pair.

86. Option (3) is correct.

The correct sequence is ADCB. (A) initiates the paragraph, by introducing the para by stating that grandmother who always went to school with me because the school was attached to the temple. This idea of a temple visit is continued in (D) by mentioning the priest taught us the alphabet and the morning prayer. While teaching, the children were made to sit in rows on either side of the verandah, while grandmother sat inside reading the scriptures. The conclusion comes in (B). The correct paragraph is: My grandmother always went to school with me because the school was attached to the temple. The priest taught us the alphabet and the morning prayer. While the children sat in rows on either side of the verandah singing the alphabet or prayer in chorus, my grandmother sat inside reading the scriptures. When we both finished, we would be back together.

87. Option (1) is correct.

The phrase 'cloud burst' implies 'a sudden, very heavy rainfall, usually local in nature and of brief duration.' Therefore, the correct substitute is 'rainstorm'.

88. Option (1) is correct.

The correct sentence is: Keats and Shelly were poets of the same period; in other words, they were contemporaries. A contemporary means 'a person or thing living or existing at the same time as another.' The context 'poets of the same period' justifies the appropriateness of 'contemporaries'.

89. Option (1) is correct.

The idiom 'get up on the wrong side of the bed' connotes 'to be in a bad mood throughout the day'. Therefore, the correct option is: Someone who is having a horrible day. Example: I think I have got up on the wrong side of the bed, as I have been constantly at loggerheads with my boss.

90. Option (2) is correct.

The idiom 'an aerial view' is also known as a bird's eye view. This is the viewpoint seen at a high elevation. The reference to Neetu taking a view of the fair from the top of the giant wheel corroborates 'a bird's eye view'.

91. Option (2) is correct.

The correct sequence is BDCA. (B) introduces the subject: 'Colonel Harland Sanders' and his ambition coming true late in life. This continues in (D) followed by (A), by stating: how he started off-he was a seventh-grade dropout who tried many things in life but found them bitter and how in he started with selling chicken at the age of 40, but his dream of opening a restaurant was repeatedly denied owing to conflicts and wars. But later he tried to franchise his restaurant. Therefore, the logically coherent link is BDCA.

92. Option (2) is correct.

The sentence 'We are organising the charity function tomorrow' is in active voice. To change in passive voice, we need to interchange the object and subject with each other, i.e. object of the active sentence becomes the subject of the passive sentence. The correct sentence is: The charity function is being organised tomorrow. The correct structure of verbs in passive voice: subject + Am/is/are + Being + verb [past participle] + by/with/to + Object.

93. Option (3) is correct.

The correct sequence is c, a, d, b. The statement (c)introduces the topic: William Shakespeare as the greatest dramatist and poet of the English language. This is justified in (a) by mentioning, that it was in his hands that English drama (subject) + achieved a matchless brilliance (verb + object). Therefore, the correct sentence is: William Shakespeare is considered as the greatest dramatist and poet of the English language. In Shakespeare's hands, English drama achieved a matchless brilliance that first shone forth in his early history plays. Thus, c, a, d, b is the most logically coherent link.

94. Option (3) is correct.

'Naïve' means 'showing a lack of experience, wisdom, or judgement.' Jaded means fatigued by overwork: exhausted. Cynical implies ' not trusting or respecting the goodness of other people and their actions'. Convinced means completely certain about something. Therefore, the antonym of 'naïve' is 'cynical'.

95. Option (3) is correct.

The correct sentence is: The driver very subtly ironed out the traffic violation he committed. The phrase 'ironed out' connotes 'to resolve or work out a solution to'. In the sentence, the driver tried to resolve the traffic violation he committed.

96. Option (3) is correct.

The correct sentence is: Colonialism had a great impact on the lives of the aboriginal Australians who were eventually subjugated by the whites with all power and privilege. The word 'subjugated' implies 'bring under domination or control, especially by conquest.' The context clarifies that the whites used their power and privilege to dominate the aboriginal Australians.

97. Option (2) is correct.

The correct sentence is: The colonisers turned their land into rubbish pits and construction sites for their own betterment. The word 'betterment' suggests that the land of the aboriginal Australians was used for construction purposes to suit the needs of the whites.

98. Option (2) is correct.

The correct sentence is: The aborigines were often perceived as sub-humans with low status and dirty habits. It is clear from the sentence that the aborigines were deemed as sub-humans with low status and dirty habits.

99. Option (1) is correct.

The correct sentence is: The whites not only displaced the tribes of their homeland but also destroyed the beauty and balance of the natural world. The sentence refers to the domination of the whites and their heinous acts against the aborigines- displacing the tribes of their homeland, thus, another negative word is appropriate for the blank-destroyed. The whites had destroyed the beauty and balance of the natural world.

100. Option (1) is correct.

The correct sentence is: An increase in deforestation and destruction of traditional land led fauna like emu, eagle, and kangaroo, among many others to dwindle over time. The term 'fauna' refers to 'the animal life present in a particular region or time.' Animals like 'emu, eagle, and kangaroo' belonged to that time, so 'fauna' is appropriate.