GENERAL INTELLIGENCE & REASONING

Direction (1-3): In the following question, select the related word from the given alternatives.

1. Sheep : Lamb : : Cow : ?
   (a) Kitten (b) Cub
   (c) Calf (d) Caterpillar

2. PRAG : QTDK : : STOP : ?
   (a) LMNP (b) BDFE
   (c) TVRT (d) QSTG

3. 562 : 30 : : 663 : ?
   (a) 44 (b) 49
   (c) 54 (d) 58

Direction(4-6): In the following question, select the odd word from the given alternatives.

4. (a) Cricket (b) Carrom
   (c) Table Tennis (d) Chess

5. (a) IMX (b) DHS
   (c) GWK (d) KOZ

6. (a) 122 – 1331 (b) 173 – 2197
   (c) 197 – 2744 (d) 290 – 4913

7. Arrange the given words in the sequence in which they occur in the dictionary.
   (1) Xenons (2) Xylyls
   (3) Xanthic (4) Xenians
   (5) Xyst
   (a) 34125 (b) 34521
   (c) 43251 (d) 51342

8. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.
   LOQ, SVX, ZCE, ?
   (a) GJL (b) GLJ
   (c) GTL (d) JLG

9. In the following question, select the missing number from the given series.
   13, 27, 56, 115, ?
   (a) 224 (b) 231
   (c) 233 (d) 234

10. Sumitra remembers that her mother's birthday is after 13th February but before 16th February but her brother remembers that his mother's birthday is after 14th February but before 17th February. On which date Sumitra's mother's birthday will be celebrated?
    (a) 13th February (b) 14th February
    (c) 15th February (d) 17th February

11. There are five energy drinks - Red, Moto, Energy, Lion and Bull containing different range of sugar content. Moto having sugar content more than all other drinks. Energy having the sugar content only more than the Lion. Bull is not having sugar content more than the Red. Which of the following drink having the second most sugar content?
    (a) Bull (b) Energy
    (c) Red (d) Moto

12. In the following question, from the given alternative words, select the word which cannot be formed using the letters of the given word.
    CALCULATING
    (a) GAIN (b) TANING
    (c) TAIL (d) CULT

13. In a certain code language, "WILDHORN" is written as "1133" and "RAPTURE" is written as "1089". How is "PORTLOUIS" written in that codelanguage?
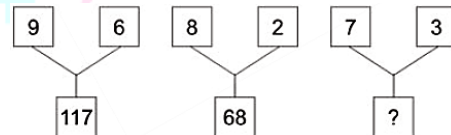   (a) 1395 (b) 1485
    (c) 1584 (d) 1595

14. If "A" denotes "subtracted from", "B" denotes "added to", "C" denotes "divided by", "D" denotes "multiplied by", then which of the following statement is correct?
    (a) 3 A 12 B 16 D 17 C 1 = 163
    (b) 5 C 7 A 9 D 8 B 2 = 294
    (c) 13 C 13 A 13 B 13 D 13 = 157
    (d) 18 C 16 D 49 A 27 B 9 = 200

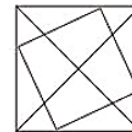15. If 9 * 2 * 5 = 23 and 1 * 4 * 8 = 29, then
    1 * 6 * 3 = ?
    (a) 19 (b) 21
    (c) 31 (d) 39

16. In the following question, select the number which can be placed at the sign of question mark (?) from the given alternatives.

    (a) 48 (b) 52
    (c) 55 (d) 58

17. How many triangles are there in the given figure?

    (a) 20 (b) 23
    (c) 24 (d) 26

18. In the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to beat variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.
    Statements: I. All LED are bulb.
    II. Some bulbs are not tube light.
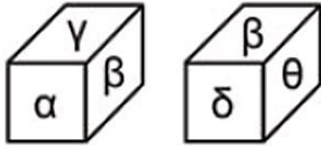   **Conclusions:** I. Some tube lights are LED.
    II. All LED are tube lights.
    (a) Only conclusion (I) follows.
    (b) Only conclusion (II) follows.
    (c) Neither conclusion (I) nor conclusion (II) follows.
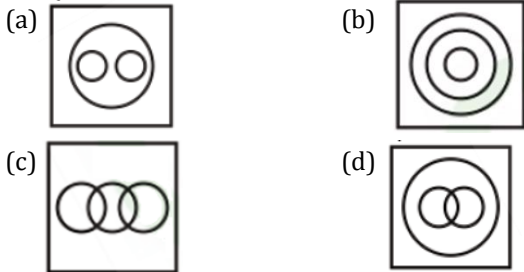
(d) Both conclusions follow.

19. Two positions of a cube are shown below. What will come opposite to face containing 'α'?
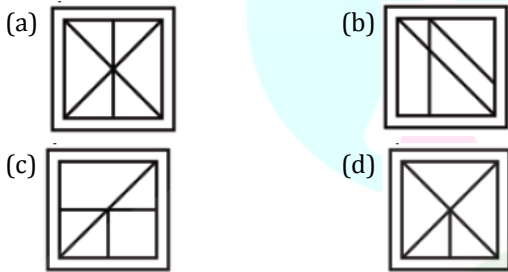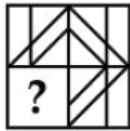

(a) β   (b) δ
(c) η   (d) θ

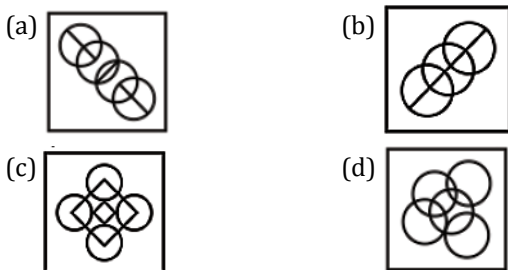20. Identify the diagram that best represents the relationship among the given classes.
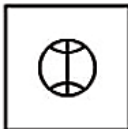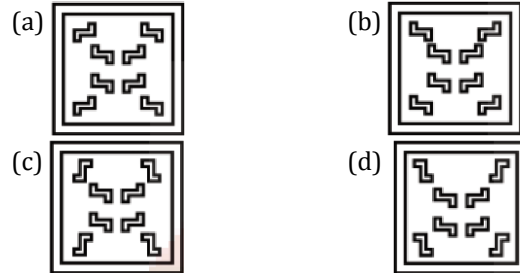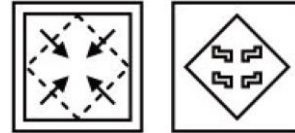
Pet animals, Dog, Cat

(a)   (b)

(c)   (d)

21. Which answer figure will complete the pattern in the question figure?

(a)   (b)
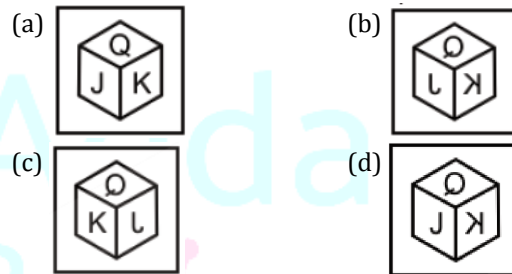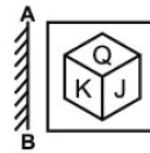
(c)   (d)

22. From the given answer figures, select the one in which the question figure is hidden/embedded.

(a)   (b)

(c)   (d)

23. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened?

(a)   (b)

(c)   (d)

24. If a mirror is placed on the line AB, then which of the answer figure is the right image of the given figure?

(a)   (b)

(c)   (d)

25. A word is represented by only one set of numbers as given in any one of the alternatives. Thes sets of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The columns and rows of **Matrix-I** are numbered from 0 to 4 and that of **Matrix-II** are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, for example, **'Z'** can be represented by 87, 99 etc., and **'T'** can be represented by 69, 95, etc. Similarly, you have to identify the set for the word "**MAZE".**

Matrix – I					
	0	1	2	3	4
0	M	O	G	A	C
1	A	C	M	O	G
2	O	G	A	C	M
3	C	M	O	G	A
4	G	A	C	M	O

Matrix - II					
	5	6	7	8	9
5	J	Z	T	E	U
6	E	U	J	Z	T
7	Z	T	E	U	J
8	U	J	Z	T	E
9	T	E	U	J	Z

(a) 00, 41, 99, 96   (b) 12, 04, 56, 58
(c) 24, 22, 88, 65   (d) 43, 10, 69, 77
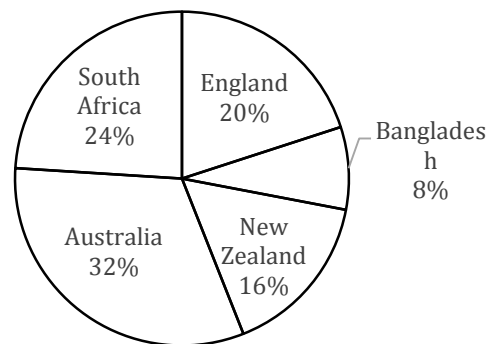
GENERAL AWARENESS

26. What does indifference curve represent?
    (a) Levels of Income and Capital
    (b) Satisfaction derived from two goods
    (c) Income from two businesses
    (d) Relationship between expenditure and savings

27. Union Cabinet has proposed to provide 'Housing for All' by the year–
    (a) 2019   (b) 2022
    (c) 2025   (d) 2030

28. India has taken the concept of 'Judicial Review' from which country's constitution?
    (a) United States   (b) United Kingdom
    (c) Canada   (d) Ireland

29. How many times a person can be elected as the President of India?
    (a) One time   (b) Two times
    (c) Three times   (d) No bar

30. Who shot dead John Saunders on 17th December 1927?
    (a) Bhagat Singh   (b) MangalPanday
    (c) Sukhdev   (d) Bipin Chandra Pal Singh

31. Sardar Vallabhbai Patel was the leader of _____.
    (a)Bhoodan Movement   (b) Rowlatt Satyagraha
    (c) Bardoli Satyagraha (d) Swadeshi Movement

32. Which type of forests majorly comprises of lichens and mosses?
    (a) Taiga forests
    (b) Tundra forests
    (c) Temperate mixed forests
    (d) Tropical ever green forests

33. Which of the following has maximum diurnal temperature difference?
    (a) Desert   (b) Mountains
    (c) Plateau   (d) Ocean

34. Night Blindness is caused by deficiency of which of the following Vitamin?
    (a) Vitamin B   (b) Vitamin C
    (c) Vitamin K   (d) Vitamin A

35. The right portion of human heart receives _____ blood.
    (a) pure   (b) impure
    (c) mixed   (d) None of these

36. Which of the following is the largest gland in human body?
    (a) Thyroid   (b) Liver
    (c) Kidney   (d) Pancreas

37. On which principle does the hydraulic lift works?
    (a) Newton's law   (b) Pascal's law
    (c) Archimedes's law   (d) Joule's law

38. At what temperature (in degree celsius), the numerical values on Celsius and Fahrenheit scales become equal?
    (a) –40   (b) 40
    (c) 273   (d)–273

39. In MICR, what does 'I' stands for?
    (a) Interactive   (b) Information
    (c) Ink   (d) Instruction

40. What is the process of conversion of solid state directly to gaseous state called?
    (a) Evaporation   (b) Condensation
    (c) Sublimation   (d) Distillation

41. What are the main components of Bronze Alloy?
    (a) Copper and Zinc   (b) Copper and Tin
    (c) Zinc and Nickel   (d) Aluminium and Nickel

42. Which of the following causes fly ash?
    (a) Hydroelectric Power Station
    (b) Coal Combustion Power Plant
    (c) Nuclear Power Plant
    (d) Tidal Power Plant

43. "Dulari Kanya", a scheme to bring down infant mortality in the state is launched by which Indian State?
    (a) Arunachal Pradesh   (b) Rajasthan
    (c) Uttar Pradesh   (d) Madhya Pradesh

44. Who developed the theory of relativity?
    (a) Issac Newton   (b) Charles Darwin
    (c) Marie Curie   (d) Albert Einstein

45. 'Queensbury rules' is code of rules that directly influences which of the following sport?
    (a) Tennis   (b) Boxing
    (c) Polo   (d) Billiards

46. Who amidst the following is a distinguished painter?
    (a) Uday Shankar   (b) SonalMansingh
    (c) Amrita Shergill   (d) Yamini Kirshnamurthy

47. Who among the following was awarded with Padma Shri 2017 in the field of 'Sports - Hockey'?
    (a) Sardar Singh   (b) P. R. Shreejesh
    (c) Ramandeep Singh   (d) YuvrajWalmiki

48. "Hema Malini : Beyond the Dream Girl" is authored by which author?
    (a) MeenaIyer   (b) HemaMalini
    (c) Ram Kamal Mukherjee (d) Vijay Kumar

49. A 7500 mile direct rail link was launched on 10 April 2017 between China and ____.
    (a) Pakistan   (b) Kazakhstan
    (c) Great Britain   (d) France

50. 19th SAARC Summit was planned to be held in November 2016 but it got postponed. Which country was its host?
    (a) Nepal   (b) Bhutan
    (c) India   (d) Pakistan

QUANTITATIVE APTITUDE

51. Product of three consecutive odd numbers is 1287. What is the largest of the three numbers?
(a) 9   (b) 11
(c) 13   (d) 17

52. 45 men or 60 boys can do a piece of work in 20 days. How many days will 15 men and 20 boys take to complete the work?
(a) 23   (b) 45
(c) 30   (d) 25

53. How many spherical balls of radius 1 cm can be made by melting a hemisphere of radius 6 cm?
(a) 112   (b) 108
(c) 116   (d) 104

54. The marked price of a shirt is Rs 1280. If the shirt is being sold for Rs 900, then what is the discount percentage?
(a) 31.31   (b) 25.57
(c) 29.68   (d) 34.36

55. The ratio of number of cans of orange, pineapple and mixed fruit juices kept in a store is 8 : 9 : 15. If the store sells 25%, 33.33% and 20% of orange, pineapple and mixed fruit juices cans respectively, then what is the ratio of number of cans of these juices in the remaining stock?
(a) 1 : 1 : 2   (b) 6 : 6 : 13
(c) 12 : 15 : 19   (d) 4 : 9 : 13

56. The ratio of number of boys and girls in a class is 2 : 3. The average weight of boys and girls in the class is 18 kg and 21 kg respectively. What is the average weight (in kgs) of all the boys and girls together?
(a) 99/5   (b) 101/5
(c) 109/6   (d) 96/5

57. A milk merchant buys 50 litres of milk at the rate of Rs 40 per litre and mixes 5 litres of water in it. If he sells this mixture at the rate of Rs 42 per litre, then what is the profit percentage for the dealer?
(a) 17.2   (b) 14.4
(c) 16.6   (d) 15.5

58. If A is 6 times more than B, then by what percentage is B is less than A?
(a) 64.82   (b) 83.33
(c) 28.56   (d) 85.71

59. A runner starts running from a point at 6:00 am with a speed of 8 km/hr. Another racer starts from the same point at 8:30 am in the same direction with a speed of 10 km/hr. At what time of the day (in p.m.) will the second racer overtake the other runner?
(a) 8:00   (b) 4:00
(c) 6:30   (d) 5:30

60. A sum amounts to Rs 7727.104 at the rate of 12% per annum compounded annually after three years. What is the value of principal (in Rs)?
(a) 5000   (b) 5200
(c) 5350   (d) 5500

61. When $[x + (1/x)] = 5$, then what is the value of $[x - (1/x)]$?
(a) 11   (b) $\pm\sqrt{22}$
(c) 21   (d) $\pm\sqrt{21}$

62. If $x = (\sqrt{2} + 1)/(\sqrt{2} - 1)$, then what is the value of $(x^5 + x^4 + x^2 + x)/x^3$?
(a) 40   (b) 37.5
(c) 38   (d) $20\sqrt{2}$

63. If $x = 5 - 2\sqrt{6}$, then what is the value of $\sqrt{x} + (1/\sqrt{x})$?
(a) 5   (b) 2
(c) $2\sqrt{3}$ (d) $2\sqrt{2}$

Q64.   If $27^x + 27^{[x-(1/3)]} = 972$, then what is the value of x?
(a) 2   (b) 3
(c) 4   (d) 5

65. The inradius of a equilateral triangle is 10 cm. What is the circum-radius (in cm) of the same triangle?
(a) 5   (b) $10\sqrt{3}$
(c) 20   (d) $20\sqrt{3}$

66. The point of intersection of all the angle bisector of a triangle is _____ of the triangle.
(a) Incenter   (b) Circumcenter
(c) Centroid   (d) Orthocenter

67. ABC is an equilateral triangle and P is the orthocenter of the triangle, then what is the value (in degrees) of ∠BPC?
(a) 90   (b) 120
(c) 135   (d) 145

68. In a triangle ABC, AD is angle bisector of ∠A and AB : AC = 3 : 4. If the area of triangle ABC is 350 cm², then what is the area (in cm²) of triangle ABD?
(a) 150   (b) 200
(c) 210   (d) 240

69. A boat is sailing towards a lighthouse of height $20\sqrt{3}$ m at a certain speed. The angle of elevation of the top of the lighthouse changes from 30° to 60° in 10 seconds. What is the time taken (in seconds) by the boat to reach the lighthouse from its initial position?
(a) 10   (b) 15
(c) 20   (d) 60

70. What is the value of $[\sec\theta/(\sec\theta - 1)] + [\sec\theta/(\sec\theta + 1)]$?
(a) $2\sin^2\theta$ (b) $2(1 + \tan^2\theta)$
(c) $2\csc^2\theta$ (d) $\sin^2\theta$

71. If $\csc\theta = \frac{1}{4x} + x$, then what is the value of $\csc\theta + \cot\theta$?
(a) 3x   (b) x
(c) 4x   (d) 2x or 1/(2x)

Direction (72-75): The pie chart given below shows the runs scored by Pujara against team of different counties.

72. The runs scored by Pujara against South Africa is more than runs scored against Bangladesh by what percentage?
(a) 100   (b) 150
(c) 200   (d) 250

73. If Pujara has scored 1875 runs in total, then what is the difference in runs scored by Pujara against South Africa and New Zealand ?
(a) 150   (b) 175

(c) 200   (d) 250

74. What is the sectorial angle (in degrees) made by the runs scored against Australia in the given pie chart ?
(a) 106.8   (b) 109.6
(c) 112.4   (d) 115.2

75. What should be the least number of runs that Pujara must have scored in total (runs can only be integers) ?
(a) 25   (b) 225
(c) 375   (d) 625

ENGLISH LANGUAGE

Directions (76-77): In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No error'.

76. I am vexed at him (1)/ for what all he has (2)/ done for him till date. (3)/ No Error (4)
(a) 1   (b) 2
(c) 3   (d) 4

77. The Manager warned his team members (1)/ that if they persist in their (2)/ obstructionist attitude they would be punished. (3)/ No Error (4)
(a) 1   (b) 2
(c) 3   (d) 4

Directions (78-79): In the following question, the sentence given with blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.

78. Both taciturn and ____ , Daniel seldom spoke and never spent money.
(a) wary   (b) cheap
(c) discreet   (d) miserly

79. He was too ____ to make a statement before the Boss.
(a) shy   (b) tired
(c) timid   (d) coward

Directions (80-81): In the following question, out of the four alternatives, select the word similar in meaning to the word given.

80. Reiterate
(a) Abuse   (b) Pretend
(c) Detest   (d) Repeat

81. Nincompoop
(a) Wise   (b) Fool
(c) Lover   (d) Companion

Directions (82-83): In the following question, out of the four alternatives, select the word opposite in meaning to the word given.

82. Pellucid
(a) Torpid   (b) Explicit
(c) Murky   (d) Limpid

83. Adamant
(a) Rigid   (b) Flexible
(c) Fixed   (d) Unshakable

Directions (84-85): In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/Phrase.

84. To wrangle over an ass's shadow
(a) To waste money over trifles
(b) To punish a person severely for his arrogance
(c) To quarrel over trifles
(d) To keep away from extreme poverty

85. Make one's flesh creep
(a) To confuse someone   (b) To flatter someone
(c) To abuse someone   (d) To frighten someone

Directions (86-87): Improve the bracketed part of the sentence.

86. Father (would have been appreciated) your efforts if you had informed him.
(a) would be appreciated
(b) would have appreciated
(c) should have been appreciated
(d) No improvement

87. Neha was (surprised by) her result.
(a) surprised to   (b) surprised from
(c) surprised at   (d) No improvement

Directions (88-89): In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase.

88. Study of tumors
(a) Oenology   (b) Oncology
(c) Phrenology   (d) Upology

89. The highest point
(a) Tempest   (b) Outpost
(c) Archive   (d) Zenith

Directions (90-91): In the following question, four words are given out of which one word is incorrectly spelt. Find the incorrectly spelt word.

90. (a) Literary   (b) Leakeage
(c) Laudable   (d) Loafer

91. (a) Anasthetic   (b) Obliterate
(c) Concurrence   (d) Blithesome

Directions (91-92): The question below consists of a set of labelled sentences. Out of the four options given, select the most logical order of the sentences to form a coherent paragraph.

92. P: Yet making loans to poor people is hardly a Poverty cure.

    Q: Segmenting the industry, might be worth while if it allows more of the poor to get access to credit.

    R: Multinational corporations could take the top microfinance institutions to the next level, and the remainder could take the responsibility of development groups and regional banks.

    S: Property rights and the role of law matter too.

    (a) PRQS   (b) QRPS

    (c) SPQR   (d) RSPQ

93. P: But the scenario has quite changed now-a-days by allocating a special budget of funds for security.

    Q: In the last ten years, budget towards the development of military forces is higher when compared to others.

    R: India earlier days gave more importance to the development of industry and less importance to other departments.

    S: This is because of the frightening increase in terrorism all around the world especially emerging after the 9/11 terror attack in U.S.

    (a) PRQS   (b) SPQR

    (c) QSPR   (d) RPSQ

94. In the following question, a sentence has been given in Active/Passive voice. Out of four alternatives suggested, select the one which best expresses the same sentence in Passive/Active voice.

    One should keep one's word.

    (a) A word should be kept.

    (b) A word should be keeping.

    (c) One's word has to be kept.

    (d) One's word should be kept by us.

95. In the following question, a sentence has been given in Direct/Indirect speech. Out of the four alternatives suggested, select the one which best expresses the same sentence in Indirect/Direct speech.

    The old man said, "Thanks I shall never forget this kindness, Ankit."

    (a) The old man applauded Ankit for his kindness and he shall never forget Ankit.

    (b) The old man thanked Ankit and assured him that he would never forget his kindness.

    (c) Ankit was being thanked by the old man for his kindness towards an old man.

    (d) The old man said thank you to Ankit for his kindness.

Directions (96-100): In the following passage some of the words have been left out. Read the passage carefully and select the correct answer for the given blank out of the four alternatives.

National integration means ____ all the people of the nation into a single whole. It is a ____ that bends together all people in one ____ bond no matter what their religion, caste, language or history may be. It is a ____ cementing force whereby all kinds of people live ____ peacefully and can identify themselves as a part and parcel of a nation.

96. National integration means ____ all the people of the nation into a single whole.

    (a) segregating   (b) combining

    (c) residing   (d) complying

97. It is a ____ that binds together

    (a) sentiment   (b) resources

    (c) essentials   (d) finances

98. All people in one ____ bond no matter what their religion, caste, language or history

    (a) real   (b) common

    (c) nominal   (d) similar

99. It is a ____ cementing force whereby all kinds of people

    (a) weakening   (b) natural

    (c) strong   (d) settled

100. Live ____ peacefully and can identify themselves as a part and parcel of a nation.

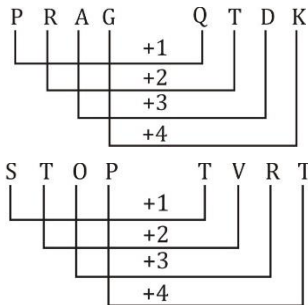   (a) separately   (b) jointly

    (c) happily   (d) together

Mock-20: Solutions

GENERAL INTELLIGENCE & REASONING

1. **(c);** Young one of sheep is lamb and young one of cow is calf.

2. **(c);**

3. **(c);** $5 \times 2 \times \frac{6}{2} = 30$
   $6 \times 3 \times \frac{6}{2} = 54$

4. **(a);** All are indoor games except Cricket

5. **(c);** $+4, +11$ series except GWK

6. **(b);** $11 \times 11 + 1 = 121$
   $11 \times 11 \times 11 = 1331$
   $14 \times 14 + 1 = 197$
   $14 \times 14 \times 14 = 2744$
   $17 \times 17 + 1 = 290$
   $17 \times 17 \times 17 = 4913$

7. **(a);** 3. Xanthic
   4. Xenians
   1. Xenons
   2. Xylyls
   5. Xyst

8. **(a);** $+7, +7, +7$ series

9. **(d);** $13 \times 2 + 1 = 27$
   $27 \times 2 + 2 = 56$
   $56 \times 2 + 3 = 115$
   $115 \times 2 + 4 = 234$

10. **(c);** According to Sumitra,
    13 Feb < Birthday < 16 Feb
    According to her brother
    14 Feb < Birthday < 17 Feb
    ∴ Sumitra's mother's birthday will be celebrated on 15th Feb.

11. **(c);** Moto > Red > Bull > Energy > Lion
    Red is having the second most sugar content.

12. **(b);** 'TANING', there is no double 'N' is the given word.

13. **(d);** WILDHORN = 23 + 9 + 12 + 4 + 8 + 15 + 18 + 14 = 103
    = 103 × 11 = 1133
    RAPTURE = 18 + 1 + 16 + 20 + 21 + 18 + 5 = 99
    = 99 × 11 = 1089
    PORTLOUIS = 16 + 15 + 18 + 20 + 12 + 15 + 21 + 9 + 19 = 145
    = 145 × 11 = 1595

14. **(c);** 13 C 13 A 13 B 13 D 13 = 157
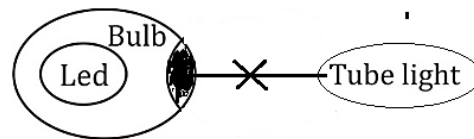
⇒ 13 ÷ 13 – 13 + 13 × 13 = 157
⇒ 1 − 13 + 169 = 157
⇒ 157 = 157

15. **(a);** $925 = 529 = 23^2$
    $148 = 841 = 29^2$
    $163 = 361 = 19^2$

16. **(d);** $9^2 + 6^2 = 117$
    $8^2 + 2^2 = 68$
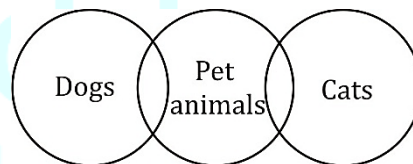 $7^2 + 3^2 = 58$

17. **(a);** 20 triangles

18. **(c);**

I. ×
II. ×
Neither conclusion I nor conclusion II follows.

19. **(d);** Opposite face of α is θ

20. **(c);**

21. **(b);**
22. **(b);**
23. **(d);**
24. **(b);**
25. **(a);**

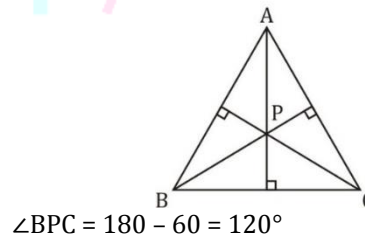| 00,	41,	99,	96
↓	↓	↓	↓
M	A	Z	E

GENERAL AWARENESS

26. (b); An indifference curve is a graph showing combination of two goods that give the consumer equal satisfaction and utility. Each point on an indifference curve indicates that a consumer is indifferent between the two and all points give him the same utility.

27. (b); Cabinet proposed to provide 'Housing for all' by 2022.

28. (a); India has taken concept of 'Judicial Review' from United States (US) constitution.

29. (d); There is no such limit specified in Indian Constitution. So there is no bar on number of times a person can be elected as the President of India.

30. (a); On 17th December, 1927 Bhagat Singh and Shivaram Rajguru shot and killed the assistant police superintendent John Saunders. He was shot by Bhagat Singh and Rajguru while leaving the District Police Headquarters in Lahore.

31. (c); The Bardoli Satyagraha of 1928, in the state of Gujarat, India during the period of the British Raj, was a major episode of civil disobedience and revolt in the Indian Independence Movement. The movement was led by Vallabhbhai Patel.

32. (b); Tundra is a type of biome where the tree growth is hindered by low temperatures and short growing seasons. In tundra, the vegetation is composed of dwarf shrubs, sedges and grasses, mosses, and lichens.

33. (a); The diurnal temperature range (DTR) is the difference between the daily maximum and minimum temperature. Desert areas typically have the greatest diurnal temperature variations.

34. (d); Night Blindness is caused by deficiency of Vitamin A.

35. (b); The right side of the heart collects impure blood from the body and pumps it to the lungs. The left side of the heart collects pure blood from the lungs and pumps it to the body. The left and right sides of the heart are divided by walls called septums.

36. (b); Liver is the largest gland in human body.

37. (b); Pascal's Law states that pressure that is applied to an enclosed fluid is transmitted equally to all other points. A hydraulic pump is a water pump that uses the kinetic energy of flowing water to force a small fraction of that water to a reservoir at a higher level. The hydraulic lift works because of Pascal's law. If force is put on(according to Pascal's Law), that force should be entirely felt on all points throughout the liquid.

38. (a); At -40 degrees, the numerical values on Celsius and Fahrenheit scales become equal.

39. (c); Magnetic Ink Character Recognition (MICR code) is a character-recognition technology used mainly by the banking industry to ease the processing and clearance of cheques and other documents. So, in MICR 'I' stands for Ink.

40. (c); Sublimation is the phase transition of a substance directly from the solid to the without passing through the intermediate liquid phase.

41. (b); Bronze Alloy is an alloy composed of copper and tin.

42. (b); Fly ash is a byproduct from burning pulverized coal in electric power generating plants. During combustion, mineral impurities in the coal (clay, feldspar, quartz, and shale) fuse in suspension and float out of the combustion chamber with the exhaust gases. As the fused material rises, it cools and solidifies into spherical glassy particles called fly ash.

43. (a); On 26 January 2017, the state government of Arunachal Pradesh has launched a special scheme named as "Dulari Kanya Yojana" to bring down the infant mortality in the state. It will track all the pregnant mothers to provide them better care for safe and secured delivery. It also provide an amount of Rs. 20,000 for girl child born in any government hospital. And this amount will directly be deposited to the bank accounts of girl child.

44. (d); The Theory of Relativity, proposed by the physicist Albert Einstein (1879-1955) in the early part of the 20th century.

45. (b); Queensbury rules are a code of generally accepted rules in the sport of boxing.

46. (c); Amrita Sher-Gill(30 January1913–5 December 1941) was an eminent Hungarian-Indian painter. The beauty and depth of Amrita Sher Gil's paintings has led to her being popularly called as 'India's Frida Kahlo'. All the other three in options are eminent classical dancers.

47. (b); Parattu Raveendran Sreejesh is an Indian field hockey player and played as a goalkeeper in the Indian national team. He was awarded with padma-shri 2017 in the field of hockey.

48. (c); "Hema Malini: Beyond the Dream girl" is Hema Malini's biography written by Ram Kamal Mukherjee. The book discusses Hema Malini life and achievement, since she has been extrmelly active as a stage performer, actor and a class.

49. (c); The Yiwu-London train covered over 12,000-kilometers (7,500 miles), making it the second-longest rail route was launched on 10 April 2017 between Great Britain and China. It left London on April 10, passing through France, Belgium, Germany, Poland, Belarus, Russia and Kazakhstan during its 20-day trip, two days longer than expected, before arriving in Yiwu in eastern Zhejiang province, China.

50. (d); The 19th SAARC summit is a scheduled diplomatic conference, which was originally planned to be held in Islamabad, Pakistan on 15–16 November 2016. Following the rising diplomatic tensions after the Uri terrorist attack, India announced its boycott of the summit, alleging Pakistan's involvement in the attack.
Later, Bangladesh, Afghanistan and Bhutan also pulled out of the summit culminating in an indefinite postponement of the summit.
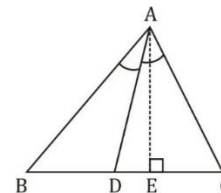
QUANTITATIVE APTITUDE

51. (c); So,

On factorizing the given number i.e. 1287

1287 = 3 × 3 × 11 × 13 = 9 × 11 × 13

So, highest number is 13.

52. (c); 45m = 60 B

3M = 4B

(15m + 20B) x = 45m × 20

(15m + 15m)x = 45m × 20

30m × x = 45m × 20   ⇒   x = 30 days

53. (b); $\frac{2}{3}\pi R^3 = \frac{4}{3}\pi r^3 n$

$216 = 2 \times (1)^3 \times n$

(where n = number of spherical balls)

n = 108

54. (c); MP = 1280

$Discount\ percent = \frac{1280 - 900}{1280} \times 100$

$= \frac{380}{1280} \times 100 = 29.6875\%$

55. (a); Let number of cans of Orange, pineapple and mixed fruit be 800x, 900x and 1500x respectively

Remaining cans of Orange

$= \frac{75}{100} \times 800x = 600x$

Remaining cans of Pineapple

$= \frac{2}{3} \times 900x = 600x$

Remaining cans of mixed Fruit Juices

$= \frac{80}{100} \times 1500x = 1200x$

Required ratio = 1 : 1 : 2

56. (a); Let number of boys and girls be 2x and 3x respectively.

Required average weight

$= \frac{2x \times 18 + 3x \times 21}{5x} = \frac{36x + 63x}{5x} = \frac{99}{5}$

57. (d); Total C.P. = 50 × 40 = 2000 Rs.

Total S.P. = (50 + 5) × 42

= 55 × 42 = 2310

Profit percentage

$= \frac{310}{2000} \times 100 = 15.5\%$

58. (d); Let B = x

Then A will be = x + 6x = 7x

$Required\ percentage = \frac{7x - x}{7x} \times 100$

$= \frac{6}{7} \times 100 = 85.71\%$

59. (c); Upto 8:30 AM first runner would have run for = 2.5 × 8 = 20 km

Time taken by second runner to overtake first runner

$= \frac{20}{10 - 8} = 10\ hour$

So, second runner will overtake first runner after 8 : 30 AM+ 10 hours = 6 : 30 PM

60. (d); $7727.104 = P\left(1 + \frac{12}{100}\right)^3 = P\left(\frac{28}{25}\right)^3 = Rs.\,5500$

61. (d); $x + \frac{1}{x} = 5$

$\Rightarrow x^2 + \frac{1}{x^2} = 23$

$\Rightarrow \left(x - \frac{1}{x}\right)^2 = x^2 + \frac{1}{x^2} - 2 = 23 - 2$

$x - \frac{1}{x} = \pm\sqrt{21}$

62. (a); $x = \frac{\sqrt{2}+1}{\sqrt{2}-1}$

$x = \frac{(\sqrt{2}+1)^2}{2-1} = 2 + 1 + 2\sqrt{2} = 3 + 2\sqrt{2}$

$\frac{1}{x} = \frac{1}{3+2\sqrt{2}} = \frac{3-2\sqrt{2}}{9-8} = 3 - 2\sqrt{2}$

$x + \frac{1}{x} = 3 + 2\sqrt{2} + 3 - 2\sqrt{2} = 6$

Now, $\frac{x^5 + x^4 + x^2 + x}{x^3}$

$= x^2 + x + \frac{1}{x} + \frac{1}{x^2}$

$= \left(x^2 + \frac{1}{x^2}\right) + \left(x + \frac{1}{x}\right) = (36 - 2) + 6 = 40$

63. (c); x = 5 − 2√6

$x = \left(\sqrt{2}\right)^2 + \left(\sqrt{3}\right)^2 - 2\sqrt{3} \times \sqrt{2} = \left(\sqrt{3} - \sqrt{2}\right)^2$

$\sqrt{x} = \sqrt{3} - \sqrt{2}$

$\frac{1}{\sqrt{x}} = \frac{1}{\sqrt{3}-\sqrt{2}} = \sqrt{3} + \sqrt{2}$

$\sqrt{x} + \frac{1}{\sqrt{x}} = \sqrt{3} - \sqrt{2} + \sqrt{3} + \sqrt{2} = 2\sqrt{3}$

64. (a); $27^x + 27^{\left[x - \left(\frac{1}{3}\right)\right]} = 972$

We can write it as

$27^x + 27^{\left[x - \frac{1}{3}\right]} = 729 + 243$

$27^x + 27^{\left(x - \frac{1}{3}\right)} = 27^2 + (27)^{\frac{5}{3}}$

On comparing, x = 2

65. (c); $10 = \frac{a}{2\sqrt{3}}$ (where a is side of equilateral triangle)

$Circumradius\ of\ equilateral\ triangle = \frac{a}{\sqrt{3}}$

$\frac{a}{\sqrt{3}} = 20\ cm$

66. (a); Point of intersection of angle bisector of angles of triangle is called Incentre of triangle.
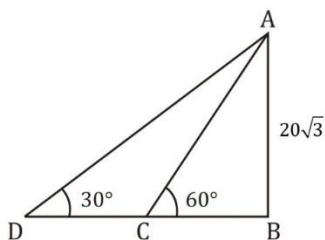
67. (b);

∠BPC = 180 − 60 = 120°

68. (a);

If AD is angle bisector of ∠BAC then

$\frac{AB}{AC} = \frac{BD}{DC} \Rightarrow \frac{BD}{DC} = \frac{3}{4}$

Draw perpendicular AE on BC

So, Area of ∆ABD + Area of ∆ADC = 350

$\frac{1}{2} \times 3y \times AE + \frac{1}{2} \times 4y \times AE = 350$

$AE = \frac{100}{y}$

Now Area of ∆ABD

$= \frac{1}{2} BD \times AE = \frac{1}{2} \times 3y \times \frac{100}{y} = 150\ cm^2$

69. (b);

$$\tan 30° = \frac{20\sqrt{3}}{BD}$$

BD = 60 m

$$\tan 60 = \frac{20\sqrt{3}}{BC}$$

BC = 20 m

DC = 40 m

$$Speed\ of\ boat = \frac{40}{10} = 4\ m/sec$$

Total time taken to reach light house

$$= 10 + \frac{20}{4} = 15\ sec$$

70. (c); $\left[\frac{sec\,\theta}{(sec\,\theta-1)}\right] + \left[\frac{sec\,\theta}{(sec\,\theta+1)}\right]$

$$= \frac{sec\,\theta(sec\,\theta + sec\,\theta + 1 - 1)}{sec^2\,\theta - 1}$$

$$= \frac{2\,sec^2\,\theta}{tan^2\,\theta} = 2\,cosec^2\,\theta$$

71. (d); $cosec\,\theta = \frac{1}{4x} + x$

$$cosec\,\theta = \frac{1+4x^2}{4x}$$

$$1 + cot^2\,\theta = cosec^2\,\theta$$

$$cot^2\,\theta = \left(\frac{1+4x^2}{4x}\right)^2 - 1$$

$$= \frac{1 + 16x^4 + 2\times4x^2 - 16x^2}{16x^2}$$

$$= \frac{16x^4 - 8x^2 + 1}{16x^2} = \frac{(4x^2-1)^2}{(4x)^2}$$

$$cot\,\theta = \pm\frac{4x^2-1}{4x}$$

taking +ve value

$$cosec\,\theta + cot\,\theta = \frac{1+4x^2}{4x} + \frac{4x^2-1}{4x}$$

$$= \frac{8x^2}{4x} = 2x$$

Taking (–ve) value

$$= \frac{1+4x^2}{4x} - \frac{4x^2-1}{4x} = \frac{2}{4x} = \frac{1}{2x}$$

72. (c); $Required\ percent = \frac{24-8}{8} \times 100$

$$= \frac{16}{8} \times 100 = 200\%$$

73. (a); $Required\ difference = \frac{1875}{100}(24-16) = 150$

74. (d); Let sectorial angle for runs made against Australia be x

$$\frac{x}{32} = \frac{360}{100}$$

$$\frac{x}{32} = \frac{18}{5}$$

$$x = \frac{18\times32}{5} = 115.2$$

75. (a); Taking option (a)

Runs scored against each team is in integral value when total runs scored is 25.

ENGLISH LANGUAGE

76. (a); Vexed means annoyed.
Vexed at a thing.
Vexed with a person for doing something.

77. (b); As the main clause is in past tense then the subordinate clause should be in past tense as well thus "persist" should changed to persisted.

78. (d); As the money has not been spent by Daniel thus he must be "miserly". Miserly is an adjective. Thus option (d) is correct.

79. (c); timid is the one who is easily frightened.
Coward is used in a context when we have to show afraid of danger.
Shy people are the one who is afraid of company of other people.
Thus, option (c) is correct.

80. (d); Reiterate: say something again or a number of times or to repeat something.

81. (b); Nincompoop: a foolish or stupid person.

82. (c); Pellucid: translucently clear.
Murky: dark and gloomy, especially due to thick mist.

83. (b); adamant: refusing to be persuaded or to change one's mind.
Flexible: capable of bending easily without breaking.

84. (c); To wrangle over an ass's shadow: To fight or quarrel over trivial and insignificant matters.

85. (d); Make one's flesh creep: to frighten and horrify one

86. (b); father is the doer thus passive should not be used, if the "doer" had been someone else then passive could have been used however father is appreciating the efforts not the other way round that is he is being appreciated by someone.

87. (c); with surprise we use "at".

88. **(b);** Oncology: Oncology is a branch of medicine that deals with the prevention, diagnosis, and treatment of cancer or tumor.
89. **(d);** Zenith: the time at which something is most powerful or successful.
90. **(b);** leakage: the accidental admission or escape of liquid or gas through a hole or crack.
91. **(a);** Anesthetic: An anesthetic is a drug to prevent pain during surgery.

92. **(b);**
93. **(d);**
94. **(a);**
95. **(b);**
96. **(b);**
97. **(a);**
98. **(b);**
99. **(c);**
100. **(d);**