

MENTAL ABILITY

- In a 100 metre race A beats B by 20 metres or 5 seconds. Find the speed of A.
 (A) 5 metre/sec (B) 4 metre/sec (C) 6 metre/sec (D) 4 metre/sec
- The unit digit of product of first 40 natural numbers is
 (A) 7 (B) 0 (C) 5 (D) None of these
- The salary of a worker is first increased by 12% and there after it was decreased by 12%. What was the change in salary ?
 (A) 1.44% Decrease (B) 1% Increase (C) 1.44% Increase (D) No Change
- The mean of $x + \frac{1}{x}$ is N. Then the mean of $x^2 + \frac{1}{x^2}$ is
 (A) N^2 (B) $N^2 - 2$ (C) $2N^2 - 1$ (D) $4N^2 - 2$
- If $x^{47} + 1$ is divided by $x^2 - 1$, the remainder will be
 (A) $x - 1$ (B) $x + 1$ (C) x (D) $-x$
- If $\frac{p}{q} + \frac{q}{p} = 2$, what is the value of $\left(\frac{p}{q}\right)^{23} + \left(\frac{q}{p}\right)^7$?
 (A) 0 (B) 2 (C) -2 (D) None of these
- Which one of the following is in ascending order ?
 (A) $\frac{7}{6}, \frac{5}{4}, \frac{4}{3}, \frac{9}{7}$ (B) $\frac{7}{6}, \frac{5}{4}, \frac{9}{7}, \frac{4}{3}$ (C) $\frac{4}{3}, \frac{9}{7}, \frac{5}{4}, \frac{7}{6}$ (D) $\frac{9}{7}, \frac{4}{3}, \frac{7}{6}, \frac{5}{4}$

Directions (Q. No. 8 to 11): There is a (number / letter) series in the following questions with an item missing, marked with question mark (?). Find the best appropriate option from the given option.

- 4, 18, (?), 100, 180, 294
 (A) 32 (B) 36 (C) 48 (D) 44
- 30, 68, 130, 222, (?), 520, 738
 (A) 420 (B) 350 (C) 250 (D) 280
- 6072, (?), 200, 48, 14, 5, 3
 (A) 1010 (B) 1001 (C) 1100 (D) 1110
- N5V, K7T, (?), E14P, B19N
 (A) H 9 R (B) H 10 Q (C) H 10 R (D) I 10 R
- An elevator has the capacity to carry 12 adults or 20 children. How many adults can be carried by the elevator with 15 children ?
 (A) 4 (B) 3 (C) 5 (D) 6
- If HE = 41 and SHE = 49 then COME = ?
 (A) 36 (B) 70 (C) 72 (D) 78
- Which of the following four logical diagrams represent correctly the relationship between whale, fish, crocodile?



Directions (Q. No. 15 to 18): In each of the following questions there are given a combination of letters. Followed by from (A, B, C, D) alternatives choose the alternative which resembles the mirror image of the given combination most appropriately.

15. BUZZER
 (A) ЯЭЗЗUB (B) REZZUB (C) BUZZER (D) REZZUB
16. JUDGEMENT
 (A) TNEMEGDUJ (B) TИEMEGDUL (C) TИEMEMDUL (D) LUDGEMET
17. R4E3N2U
 (A) ЯЭ4N2U3 (B) U2N3E4R (C) USNЭEЯ (D) USNЭEЯ
18. DBV8476
 (A) 8V478DB (B) 6748VBD (C) 8476DBV (D) 8V478DB

Directions (Q. No. 19 to 22): In each of the following questions a matrix of certain number is given with a question mark (?) in one block. These numbers follow a certain trend carefully go through the numbers and choose the missing (?) character.

19.

4	5	6
2	3	7
1	8	3
21	98	?

 (A) 94 (B) 76 (C) 73 (D) 16
20.

38	44	42
23	55	28
37	?	39

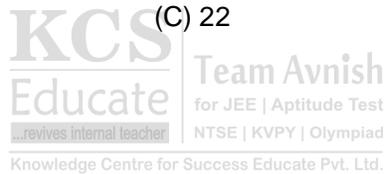
 (A) 33 (B) 66 (C) 22 (D) 77
21.

?	13	49
9	17	69
13	11	59

 (A) 9 (B) 5 (C) 10 (D) 11
22.

1	5	7	75
8	3	4	?
9	7	8	194

 (A) 20 (B) 43 (C) 89 (D) 96



Directions (Q. No. 23 to 26): Read the information carefully and answer the question that follow.
 A Blacksmith has five iron articles A, B, C, D, E each having a different weight.

- (i) A weighs twice as much as B.
 (ii) B weighs four and half times as much as C.
 (iii) C weighs half as much as D.
 (iv) D weighs half as much as E.
 (v) E weighs less than A but more than C.
23. Which of the following is lightest in weight ?
 (A) A (B) B (C) C (D) D

24. E is lighter in weight than which of the other two articles ?
 (A) A, B (B) D, C (C) A, C (D) D, B
25. E is heavier than which of the following two articles ?
 (A) D, B (B) D, C (C) A, C (D) A, B
26. Which of the following is heaviest in weight ?
 (A) A (B) B (C) C (D) D

Directions (Q. No. 27 to 30): Read the information carefully and answer the questions that follow.

There are six children taking part in an essay competition, namely A, B, C, D, E and F. A and E are brothers. F and D are sisters of E. C is the only son of A's uncle. B and D are the daughters of the brother of C's father.

27. How is D related to A ?
 (A) Uncle (B) Sister (C) Niece (D) Cousin Sister
28. How many male competitors are there ?
 (A) 6 (B) 5 (C) 4 (D) 3
29. How many female competitors are there ?
 (A) 5 (B) 4 (C) 3 (D) 2
30. How is C related to F ?
 (A) Cousin brother (B) Brother (C) Son (D) Uncle

Directions (Q. No. 31 to 35): Read the information carefully and answer the questions.

- (i) Six friends Rahul, Kabeer, Anup, Raghu, Amit and Alok were engineering graduates. All six of them were placed in six different companies and were posted in six different locations namely Tisco-Jamshedpur, Telco-Pune, Wipro-Bengaluru, H.C.L.-Noida, Mecon-Ranchi and Usha Martin-Kolkata. Each of them has their personal e-mail ids with different e-mail providers i.e. gmail, indiatimes, rediffmail, yahoo, hotmail, sancharnet though not necessarily in same order.
- (ii) The one having e-mail account with sancharnet works in Noida and the one having email account with india times works for Tisco.
- (iii) Amit does not stay in Bengaluru and does not work for Mecon, the one who works for Mecon has an email id with gmail.
- (iv) Rahul has email id with rediffmail and works at Pune.
- (v) Alok does not work for Mecon and the one who works for Wipro does not have an email account with yahoo.
- (vi) Kabeer is posted in Kolkata and does not have an account with hotmail.
- (vii) Neither Alok nor Raghu work in Noida.
- (viii) The one who posted in Ranchi, has an email id which is not an account of rediffmail or hotmail.
- (ix) Anup is posted in Jamshedpur.
31. The man who works in Wipro has an email account with
 (A) Sancharnet (B) Yahoo (C) Rediffmail (D) Hotmail
32. Which of the following email, place of posting and person combination is correct?
 (A) Kabeer – Kolkata – Rediffmail
 (B) Alok – Bengaluru – Indatimes
 (C) Amit – Noida – Yahoo
 (D) Raghu – Ranchi – gmail

33. Which of the following is true
 (A) Amit is posted in Ranchi (B) Raghu is posted in Jamshedpur
 (C) Kabeer has an email id with yahoo (D) Raghu has an email is with indiatimes
34. Which of the following sequence of location represent Alok, kabeer, Anup, Rahul, Raghu and Amit in the same order.
 (A) Bengaluru, Noida, Pune, Jamshedpur, Ranchi, Kolkata
 (B) Bengaluru, Kolkata, Jamshedpur, Pune, Noida, Ranchi
 (C) Kolkata, Bengaluru, Jamshedpur, Pune, Noida, Ranchi
 (D) None of these
35. People who have email account with indiatimes, sancharnet and yahoo work for which companies in the name sequence as the email account maintained ?
 (A) Usha martin, H.C.L., Wipro (B) Tisco, Wipro, Usha Martin
 (C) H.C.L., Tisco, Wipro (D) Tisco, H.C.L., Usha martin
36. The number of boys in a class is three times the number of girls. Which one of the following number cannot represent the total number of children in the class ?
 (A) 48 (B) 44 (C) 42 (D) 40
37. $A + B > C + D$ and $B + C > A + D$ then it is definite that
 (A) $D > B$ (B) $C > D$ (C) $A > D$ (D) $B > D$
38. If $264 * 2 = 6$, $870 * 3 = 11$ then $735 * 5$ be
 (A) 5 (B) 12 (C) 16 (D) 3
39. There are 35 students in a class. Suman ranks 3rd among the girls in the class. Amit ranks 5th among the boys in the class. Suman is one rank below Amit in the class. No two students hold the same rank in the class. What is Amits rank in the class ?
 (A) 7th rank (B) 5th rank (C) 8th rank (D) Cannot be determined

Directions (Q. No. 40 to 44): Refer to the data below and answer the questions that follow.

A national level competition held last year, participants were free to choose their respective areas from which they were asked questions. Out of 880 participants, 224 choose philosophy, 240 choose science and 336 choose sports, 64 choose both science and sports, 80 choose philosophy and sports, 40 choose philosophy and science and 24 choose all the three areas.

40. The percentage of participants who did not choose any area is
 (A) 23.59% (B) 30.25% (C) 37.46% (D) 27.27%
41. Of these participating, the percentage who choose only one area is
 (A) 60% (B) More than 60% (C) Less than 60% (D) More than 75%
42. Number of participants who choose at least two area is
 (A) 112 (B) 24 (C) 136 (D) None of these
43. Which of the following areas shows a ratio of 1:8 ?
 (A) Philosophy & science but not sports : philosophy (only)
 (B) Philosophy & sports but not science : science (only)
 (C) Science : sports
 (D) None of these
44. The ratio of students choosing sports & science but not philosophy to science but not philosophy & sports is
 (A) 2 : 5 (B) 1 : 4 (C) 1 : 5 (D) 1 : 2

Directions (Q. No. 45 to 47): Read the following information carefully and answer the questions based on them.

Ravi and Kunal are good in hockey and volleyball. Sachin and Ravi are good in hockey and base ball. Gaurav and Kunal are good in volleyball and cricket. Sachin, Sagar and Gaurav are good in baseball and football.

45. Who is good in hockey, cricket and volleyball?
(A) Sachin (B) Kunal (C) Sagar (D) Ravi
46. Who is good in baseball, cricket, volleyball and football ?
(A) Sachin (B) Kunal (C) Gaurav (D) Sagar
47. Who is good in football and baseball but not good in hockey, volleyball and cricket ?
(A) Sagar (B) Sachin (C) Ravi (D) Gaurav

Directions (Q. No. 48 to 49): Find the correct choice from the given 4 options in place of question mark (?)

48. Bank : Rupees : : Transport : ?
(A) Goods (B) Road (C) Traffic (D) Speed
49. Market : Demand : : Farming : ?
(A) Farmer (B) Monsoon (C) Foodgrain (D) Supply
50. In certain language DEAF is coded as 3587 and FILLR is coded as 74665. How is IDEAL written in that code ?
(A) 43568 (B) 43586 (C) 48536 (D) 63548

LANGUAGE COMPREHENSIVE (LCT)

Instructions for Q. No. 51, 52 & 53):

The following five sentences come from a paragraph/dialogue. The first and last sentences are given; choose the order in which the three sentences (PQR) should appear to complete the paragraph/dialogue.

51. S1. Remove the thermometer from its tube.
S2.
S3.
S4.
S5. Then move the thermometer from the patient's mouth and read the temperature.
P. Ask the patient to keep the mouth close.
Q. Shake down the column of mercury.
R. Place the bulb of the thermometer inside the patient's mouth below the tongue for two minutes.

Choose from the options below-

- (A) PQR (B) PRQ (C) QRP (D) RQP

52. S1. May I speak to Mrs. Mehta ?
S2.
S3.
S4.
S5. Tell your mother that there is a party at my home at nine in the evening tomorrow.
P. I am Mrs. Verma. May I leave a message?
Q. Sorry, mother is not at home.
R. Yes, of course aunty.

Choose from the options below-

- (A) PQR (B) QRP (C) RQP (D) QPR

53. S1. A gentleman who lived alone always had two plates placed on the table at dinner time.
S2.
S3.
S4.
S5. In this way the cat showed her gratitude to the master.
P. One day just as he sat down to dine, the cat rushed into the room.
Q. One plate was for himself and other was for his cat and he used to give the cat a piece of meat from his plate.
R. She dropped a mouse into her own plate and another into her master's plate

Choose from the options below-

- (A) QPR (B) RPQ (C) POR (D) PRQ

54. 1. One day a hungry fox saw a crow.
2.
3. The fox planned to get the piece of bread from the crow.
(A) The crow looked very ugly. (B) It had a piece of bread in its beak.
(C) It was staring at the fox. (D) The fox was angry at the crow.

55. 1. Ram went for a bike ride.
 2.
 3. He hurt his knee so his mother put a band aid
 (A) He enjoyed the ride.
 (B) He hit a bump and fell down
 (C) He stopped and had snacks on the way
 (D) His mother loved him very much
56. 1. Take two slices of bread.
 2.
 3. Put the two slices together and enjoy the butter and jelly sandwich
 (A) Spread butter on one slice and jelly on the other slice
 (B) Go to shop and buy some bread
 (C) Place them in the fridge
 (D) Call your friends and enjoy the sandwich

Instructions for Q. No. 57 to 61):

Choose the word which best fills the blank from the four options given below:

57. Roots the tree tightly to the soil.
 (A) grow (B) push (C) pull (D) hold
58. I will tomorrow morning.
 (A) coming (B) came (C) be come (D) come
59. Would you mind the window.
 (A) close (B) closing (C) closed (D) have closed
60. Vitamin C helps to diseases
 (A) know (B) find (C) fought (D) fight
61. My mother is reading newspaper
 (A) today's (B) today (C) todays (D) to days

Instructions for Q. No. 62 to 66):

Choose the correct meanings for the given idioms/phrases:

62. Bed of roses:
 (A) very soft bed (B) dull fife (C) belong to (D) full of joys
63. By leaps and bounds:
 (A) very slow (B) very fast (C) in details (D) aimlessly
64. Back stair influence:
 (A) fair and proper influence (B) secret and unfair influence
 (C) political influence (D) no influence
65. Baker's dozen:
 (A) ten (B) eleven (C) thirteen (D) twelve
66. To tie a knot
 (A) to hit someone (B) to stay calm (C) to get educated (D) to get married

Instructions for Q. No. 67 to 70):

Find out the alternatives which are most opposite in meanings to the words given:

67. Guilty :
(A) criminal (B) innocent (C) humble (D) good
68. Expand:
(A) bend (B) contract (C) tie (D) stretch
69. Brisk:
(A) agile (B) fast (C) sluggish (D) swift
70. Minor:
(A) tall (B) major (C) big (D) heavy

Instructions for Q. No. 71 to 73):

Select the most appropriate options to fill in the blank from the following alternatives given below.

71. I'm very happy as my favorite singer to my town next October for a big concert for a big concert.
(A) has come (B) has been coming (C) is going to come (D) doesn't come
72. Can the juicer by Saturday?
(A) repaired (B) be repaired (C) has repaired (D) being repaired
73. one is yours?
(A) Which (B) Who (C) What (D) How

Instructions for Q. No. 74 to 76):

Choose the alternative which can be substituted for the sentence:

74. A group of stars-
(A) Constellation (B) Solar system (C) Satellite (D) Orbit
75. A paper written by hand:
(A) Document (B) Report (C) Manuscript (D) Essay
76. That which can be easily burnt:
(A) Inflexible (B) Invincible (C) Inflammable (D) Incurable

Instructions for Q. No. 77 to 85):

In the following passage there are some numbered blanks. Fill in the blanks by selecting the most appropriate word from the options:

The foundations of good reading 77 the same for all children, regardless of 78 gender, background, or special learning needs. 79 children use the same processes in learning 80 read. Some will need more help 81 others and may need more instructions 82 one reading skill than another. 83 all children must ultimately master the same basic skills 84 fluency and comprehensions to become 85 life long reader

77. (A) is (B) has (C) are (D) was
78. (A) their (B) there (C) his (D) them
79. (A) All (B) None (C) no (D) each
80. (A) to (B) of (C) for (D) in
81. (A) as (B) then (C) to (D) than
82. (A) with (B) by (C) in (D) on
83. (A) but (B) and (C) so (D) of
84. (A) from (B) by (C) on (D) for
85. (A) as (B) the (C) an (D) a

Instructions for Q. No. 86 to 90):

Read the passage and choose the best alternative for the questions given below:

Clarkson is a large town. It has more than fifty thousand people. It is situated next to a large river, the Clark River. Every day people take the ferry from North Clarkson to South Clarkson to go to work.

Most people live in North Clarkson. There are many trees and the streets are very broad. When the sun shines and the children run and play in the safe streets, North Clarkson looks wonderful.

South Clarkson has a lot of shops and factories. People don't live there but they come in the morning to work. There is a big stadium where the Carson Tigers play. On Sundays, many people go to watch their favorite team.

At the weekend, the people from Clarkson enjoy walking along the bank of Clark River. They also sail small boats on the water and if there is a little wind, they fly kites in the large park.

Every year, Clarkson grows in size because a lot of people come to live there. The government builds more houses and the streets get busier. Maybe in the future, if the town continues to grow, it will become a city.

86. What is there near Clarkson?
(A) a river (B) a sea (C) a mountain (D) a forest
87. What do you see in North Clarkson?
(A) offices (B) factories (C) wide streets (D) stadium
88. Where is the stadium?
(A) in south Clarkson (B) outside the town
(C) near the river (D) on the bank of the river
89. What do people in Clarkson do at the weekend?
(A) swim in the river (B) do shopping (C) go for walks (D) take rest
90. Which statement is not true about Clarkson?
(A) It is situated next to a small river
(B) Every year it grows in size
(C) More than fifty thousand people live there
(D) The people take a ferry to go to work

Instructions for Q. No. 91 to 100):

A robot is a machine. But it is not just any machine. It is a special kind of machine. It is a machine that moves. It follows instructions. The instructions come from a computer. Because it is a machine, it does not make mistakes. And it does not get tired. And it never complains unless you tell it to!

Robots are all around us. Some robots are used to make things, example cars. Some robots are used to explore dangerous places. For example, robots can help to explore volcanoes. Some robots are used to clean things. These robots can help vacuum your house. Some robots can even recognize words. They can be used to answer telephone calls. Some robots look like humans but most do not. Most robots just look like machines.

Long ago people imagined robots. Over 2,000 years ago, famous poet imagined robots. The poet's name was Homer. His robots were made of gold. They cleaned and made things. But they were not real robots. They were all imaginary. Nobody was able to make a real robot. The real robot was made in 1961. It was called Unimate. It was used to make cars. It looked like a giant arm.

90. As used in paragraph 1, we can understand that robot does not get-
(A) tired (B) happy (C) angry (D) sad

91. According to the author, robots may be used to:
(i) make cars
(ii) explore volcanoes
(iii) answer telephone calls
(A) I only (B) I and II only (C) I, II, and III (D) II and III only
92. What is the main purpose of paragraph 2?
(A) to show how easy it is to make a robot.
(B) to describe the things a robot can do.
(C) to tell what a robot is.
(D) to explain the difference between a robot and a machine.
93. According to the passage, when was the first real robot made?
(A) 1961 (B) 1900 (C) 2003 (D) 2000 years ago
94. The robots imagined by Homer were made of:
(A) silver (B) steel (C) gold (D) bronze
95. Which of these statements correctly summarizes this passage?
(A) Robots are old. (B) Robots are confusing.
(C) Robots are dangerous. (D) Robots are helpful.
96. The name of the poet who imagined robots 2000 years ago was:
(A) Ravindranath Tagore (B) Blake
(C) Homer (D) Wordsworth
97. According to the passage the robot follows the instructions that come from a:
(A) Computer (B) human beings (C) children (D) all the above
98. The 1st real robot looked like a-
(A) gaint foot (B) giant man (C) giant arm (D) giant
99. The first robot was named:
(A) Ultimate (B) Unimate (C) Uninate (D) Unicex
100. Which title best expresses the main idea of this text?
(A) Robot and its invention (B) The first robot
(C) Robot has made man lazy (D) Robot and its importance

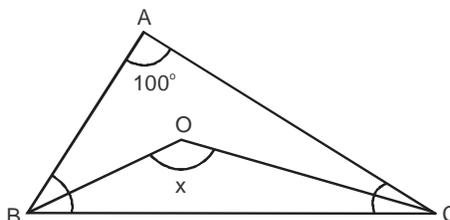
ANSWERS

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

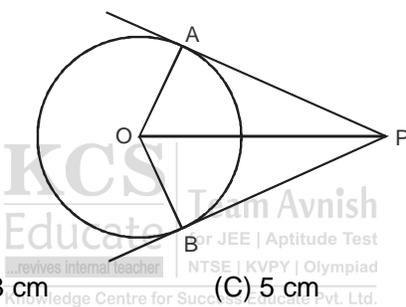
SCHOLASTIC APTITUDE TEST (SAT)

- The sum of squares of two successive natural numbers is 145. The numbers will be-
(A) 6, 7 (B) 7, 8 (C) 8, 9 (D) 9, 10
- $22\frac{1}{2}$ has how many $\frac{1}{4}$?
(A) 22 (B) 44 (C) 45 (D) 90
- Two coins are tossed simultaneously. What is the probability of having at least one head ?
(A) $\frac{1}{4}$ (B) $\frac{2}{4}$ (C) $\frac{3}{4}$ (D) $\frac{4}{4}$
- What is the correct relation in the given data ?
2, 3, 0, -1, 1, 5, 6, 4, 5, 8, 11
(A) Mean = Median (B) Mean = 5 (C) Median = Mode (D) Median = Mean + Mode
- What is the distance between the points (3, -6) and (-2, 6) ?
(A) 12 unit (B) 13 unit (C) 14 unit (D) 15 unit
- If the sum of a progression $17 + 15 + 13 + 11 + \dots$ is 72, then number of terms in the progression will be-
(A) 6 (B) 7 (C) 8 (D) 9
- If $\tan\theta + \cot\theta = 3$ then $\tan^2\theta + \cot^2\theta = ?$
(A) 7 (B) 9 (C) 11 (D) 27
- If $\sin\theta - 1 = 0$, then θ will be-
(A) 0° (B) 90° (C) 30° (D) 60°
- A wheel rotates 100 times to cover a distance of 88 meters. What is its diameter?
(A) 7 cm (B) 14 cm (C) 22 cm (D) 10 cm
- Three cubes of edges of 3 cm, 4 cm, and 5 cm respectively are melted to form a bigger cube. The edge of the bigger cube will be-
(A) 12 cm (B) 8 cm (C) 7 cm (D) 6 cm
- H.C.F. and L.C.M. of two polynomials are x and $(x^3 - 9x)$ respectively. If one polynomial is $(x^2 + 3x)$, then second will be-
(A) $(x^2 + 3x)$ (B) $(x^2 - 9x)$ (C) $(x^2 + 9x)$ (D) $(x^2 - 3x)$
- There are 20 students in a class. The mean value of their scores is 135. On rechecking, two mistakes were found. After correction, the marks of one student was increased by 35 and the marks of the other was decreased by 15. What is the mean value of the marks after correction?
(A) 135.5 (B) 136 (C) 155 (D) 134.5
- Some people complete a work in 20 days. If the number of people is doubled and work is halved, in how many days will they complete it?
(A) 5 (B) 10 (C) 20 (D) 40
- If $3\sqrt{3} \times 3^3 \div 3^{-3/2} = 3^{a+2}$, then $a = ?$
(A) 2 (B) $1/2$ (C) 4 (D) 0

15. In the given figure, the angle bisector of $\angle B$ and $\angle C$ are BO and CO respectively. What is the value of x ?

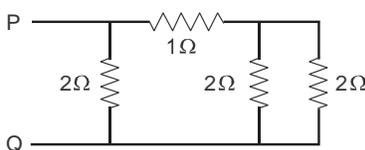


- (A) 120° (B) 130° (C) 140° (D) 150°
16. If $3A = 4B = 6C$ then $A : B : C$ will be-
- (A) $3 : 4 : 6$ (B) $\frac{1}{4} : \frac{1}{3} : \frac{1}{2}$ (C) $6 : 4 : 3$ (D) $4 : 3 : 2$
17. Number of axis of symmetry in an isosceles triangle is-
- (A) 3 (B) 2 (C) 1 (D) 0
18. If $a + b = 2$ and $\frac{1}{a} + \frac{1}{b} = 2$, then $a^3 + b^3$ will be-
- (A) 1 (B) 2 (C) 3 (D) 4
19. In the given figure O is the center of circle and PA, PB are its tangents. If $PA = 8$ cm and $PO = 10$ cm then what is the value of OB ?



- (A) 4 cm (B) 3 cm (C) 5 cm (D) 6 cm
20. $\frac{8}{40}$ is equivalent to-
- (A) 20% (B) 40% (C) 25% (D) 8%
21. Angstrom is the unit used to express-
- (A) Length (B) Mass (C) Time (D) None of these
22. A man walks 8 m towards East and then 6 m towards North. Magnitude of his displacement will be-
- (A) 10 m (B) 14 m (C) 2 m (D) Zero
23. A machine gun fires n bullets per second and the mass of each bullet in m . If the speed of bullets is v , then force exerted on the machine gun will be-
- (A) mng (B) mnv (C) $mnvg$ (D) $\frac{mnv}{g}$
24. A body weight 60 kg on the earth's surface. What would be its weight at the centre of the earth-
- (A) 60 kg wt (B) 6 kg wt (C) 60×9.8 kg wt (D) Zero
25. When the momentum of a body decreases by 10%, its Kinetic energy decreases by-
- (A) 20% (B) 40% (C) 36% (D) None of these

26. A fan produces a feeling of comfort during hot weather because-
 (A) Fan supplies cold air (B) Our perspiration evaporates rapidly
 (C) Our body radiates more heat in air (D) Conductivity of air increases
27. If a ray of light incident on a plane mirror is such that it makes an angle of 30° with the mirror, then the angle of reflection will be-
 (A) 30° (B) 45° (C) 55° (D) 60°
28. When we pluck the wire of a sitar, the waves produced in the wire are-
 (A) Longitudinal
 (B) Transverse
 (C) Sometimes longitudinal and sometimes transverse
 (D) Electromagnetic
29. The unit of refractive index is-
 (A) Metre (B) Degree (C) Dioptre (D) It has no unit
30. Which of the following colour of light undergoes the maximum deviation while passing through a glass prism?
 (A) Red (B) Blue (C) Violet (D) Green
31. The equivalent resistance between P and Q as shown in figure will be-
 (A) 7Ω (B) 2Ω (C) $\frac{5}{3}\Omega$ (D) 1Ω



32. The strength of magnetic field of magnet increases when –
 (A) The number of magnetic lines of forces passing through a given area increases.
 (B) Strength of the pole increases
 (C) Distance between the magnetic pole increases
 (D) Both A and B
33. Biogas is a mixture of –
 (A) $\text{CO} + \text{H}_2 + \text{CH}_4$ (B) $\text{CO}_2 + \text{CH}_4 + \text{H}_2\text{S}$
 (C) $\text{CO} + \text{H}_2$ (D) CH_4
34. On arranging water, sugar and oxygen in increasing order of attraction between their particles. Which of the following will be the correct arrangement-
 (A) Water, Oxygen, Sugar (B) Oxygen, Sugar, Water
 (C) Sugar, Oxygen, Water (D) Oxygen, Water, Sugar
35. Which of the following will show Tyndall effect-
 (A) Solution of common salt in water (B) Starch Solution
 (C) Solution of sugar in water (D) Vinegar
36. The atomic number of Mg is 12. The number of electrons in its M shell will be-
 (A) Eight (B) Ten (C) Two (D) Zero
37. The atomic masses of two isotopes of chlorine are 35 and 37. The number of neutrons will be-
 (A) 18, 20 (B) 20, 18 (C) 17, 18 (D) 18, 17

38. $\text{Fe}_2\text{O}_3 + 2\text{Al} \rightarrow \text{Al}_2\text{O}_3 + 2\text{Fe}$
The above reaction is of which type-
(A) Combination (B) Dissociation (C) Displacement (D) Double displacement
39. The aqueous solution of Na_2SO_4 will have a pH value –
(A) 7 (B) less than 7 (C) more than 7 (D) Zero
40. What is the mass of 12.044×10^{23} number of O_2 molecules?
(A) 8g (B) 16g (C) 32g (D) 64g
41. An element has electronic configuration 2, 8, 4. It belong to which group and period of the modern periodic table-
(A) Third group and fourth period (B) Fourth group and third period
(C) Fourteenth group and third period (D) Fourteenth group and fourth period
42. Which of the following hydrocarbon have a triple bond-
(A) C_2H_6 (B) C_3H_4 (C) C_3H_6 (D) C_3H_8
43. Objective of roasting of ore is-
(A) To oxidize it (B) To reduce it
(C) To remove volatile matters (D) A and C both
44. Which of the following has electrovalent bond-
(A) O_2 (B) CHCl_3 (C) NaCl (D) CCl_4
45. The compound obtained by reaction of $\text{C}_2\text{H}_5\text{OH}$ with concentrated H_2SO_4 at 443 K is-
(A) C_2H_4 (B) CH_3CHO (C) CH_3COOH (D) CH_3COCH_3
46. Teflon is a polymer of which of the following monomer-
(A) Mono fluoro ethane (B) Tetra fluoro ethane
(C) Difluoro ethane (D) Trifluoro ethane
47. Ecosystem comprises both abiotic and biotic component. Biotic component of an ecosystem consists of-
(A) Producers (B) Consumers (C) Decomposers (D) All the above
48. In human beings sugar level in blood is controlled by-
(A) Adrenaline (B) Eestrogen (C) Insulin (D) Thyroxine
49. In whittker's classification unicellular organisms are grouped under-
(A) Kingdom Protista (B) Kingdom Fungi
(C) Kingdom Monera (D) Kingdom Plantae
50. Which of the following are simple tissues-
(A) Parenchyma, Xylem, Collenchyma (B) Parenchyma, Collenchyma, Sclerenchyma
(C) parenchyma, Xylem, Sclerenchyma (D) Parenchyma, Xylem, Phloem
51. The best way to get rid of non biodegradable waste is-
(A) Dumping (B) Burying (C) Recycling (D) Burning
52. Asha found a plant possess tap root and reticulate venation in leaves. This plant may be-
(A) Monocot (B) Dicot (C) Both A and B (D) None of above
53. Which of the following plays an important role in nitrogen cycle-
(A) Yeast (B) Nitrobacter (C) Mucor (D) Spirogyra
54. Ginger is a stem and is not a root because-
(A) It stores food material (B) It has nodes and internodes
(C) It lacks chlorophyll (D) It grows horizontally in the soil

55. Which organ of the body is most affected by excessive intake of alcohol-
 (A) Stomach (B) Lungs (C) Liver (D) Spleen
56. In which of the following plant generally root nodules are found-
 (A) Black pepper (B) Pea (C) Onion (D) Radish
57. If a heterozygous tall plant is crossed with a homozygous dwarf plant, the proportion of dwarf progeny will-
 (A) 50% (B) 75% (C) 100% (D) 25%
58. Which one of the following does not have valves-
 (A) Auricle (B) Ventricle (C) Artery (D) Vein
59. Which one of the following is not a viral disease-
 (A) Polio (B) Mumps (C) AIDS (D) Cholera
60. The main function of phloem in plants is the conduction of –
 (A) Food (B) Minerals (C) Water (D) all the above
61. In which subject area was Panini a great scholar?
 (A) language and Grammar (B) Ayurveda
 (C) Astronomy (D) Biology
62. Between whom was The third battle of Panipat fought?
 (A) Hemu and Akbar (B) Humayun and Shershah
 (C) Marathas and Ahmadshah Abdali (D) British and Teepu Sultan
63. By which name was Iraq Known in ancient times?
 (A) Babylon (B) Abyssinia (C) Syria (D) Mesopotamia
64. Who was the first hindu courtier accepted Din-e-Ilahi-?
 (A) Todar Mal (B) Man Singh (C) Birbal (D) Bhagwan Das
65. Who implemented the doctrine of lapse?
 (A) Lord Dalhousie (B) Lord Vesley (C) Lord Canning (D) Lord Wellesley
66. When was the battle of plassey fought?
 (A) 1556 (B) 1755 (C) 1757 (D) 1857
67. When was the United Nations Organization established?
 (A) 24 October 1945 (B) 02 October 1945
 (C) 10 December 1945 (D) 15 August 1945
68. Gandhiji's famous "Dandi march" was related to which movement?
 (A) Quit India movement (B) Khilafat Andolan
 (C) Non Co-operation movement (D) Civil Disobedience Movement
69. Which ruler earned fame for road construction in the medieval period?
 (A) Akbar (B) Shah Jahan (C) Shershah Suri (D) Raziya Begum
70. Which one of the following groups of countries known as "Axis Power"?
 (A) Germany, Japan and Italy (B) Britain, France and Soviet Union
 (C) India, Britain and Italy (D) U. S. A., Britain and France
71. Who was the fascist dictator of Italy?
 (A) Hitler (B) Nepolean (C) Mussolini (D) Bismarck
72. 'Open door Policy' was declared to establish trade relation with which country?
 (A) United State of America (B) Japan
 (C) Great Britain (D) China
73. Which is the standard meridian of India?
 (A) 80° East Longitude (B) 81° East Longitude
 (C) $82\frac{1}{2}$ ° East Longitude (D) $81\frac{1}{2}$ ° East Longitude

74. At the mouth of which river is the Sunderban delta formed?
 (A) Godavari (B) Krishna (C) Kaveri (D) Ganga
75. What is meant by the term 'Loo'?
 (A) Cold and dry winds (B) Strong hot and dry winds
 (C) Retreating Monsoon (D) The Trade winds
76. Which Continent is divided into almost two equal parts by the Tropic of Capricorn?
 (A) Australia (B) Africa (C) Asia (D) South America
77. Which one of the following is not a tiger reserve in India-
 (A) Sunderban National Park (B) Kaziranga National Park
 (C) Sariska wildlife sanctuary (D) Manas wildlife sanctuary
78. Which of the following group of crops is grown in Rabi season?
 (A) Rice, Jute, Maize (B) Pulses, melons, Vegetables
 (C) Sugarcane Tobacco, Tea (D) Wheat, Peas, Mustard
79. What is the name of the Hill station which is not in Himalayas?
 (A) Ooty (B) Darjeeling (C) Shimla (D) Nainital
80. What is "Jet Stream"?
 (A) House boat (B) Fast blowing air current of the upper Atmosphere
 (C) Warm ocean current (D) Small river
81. Choose the name of the state which touches the boundary of Chhattisgarh?
 (A) Andhra Pradesh (B) Bihar
 (C) Uttarakhand (D) Telangana
82. Which one of the following cities has emerged as the "Electronic Capital" of India?
 (A) Delhi (B) Bengaluru (C) Kolkata (D) Hyderabad
83. In which country is the Mount Everest situated?
 (A) India (B) Bhutan (C) Nepal (D) China
84. Which soil is the best for production of Jute?
 (A) Red Soil (B) Black Soil (C) Laterite Soil (D) Alluvial Soil
85. The Indian constitution is a Republican constitution because it has?
 (A) an elected Prime minister (B) a federal form of government
 (C) a Parliamentary supremacy (D) an elected President
86. Which is the importance of Public Opinion in democracy?
 (A) Political awareness among people
 (B) Control dictatorship of the ruler
 (C) Co-ordination between legislative and executive
 (D) All the above
87. Who can call the joint session of both house of the Parliament and address them?
 (A) The Governor (B) The Prime minister
 (C) The President (D) The Speaker of Lok Sabha
88. Which effective tool of the parliament controls the council of ministers?
 (A) Calling attention motion (B) Adjournment motion
 (C) No confidence motion (D) Asking questions
89. Which one of the following subjects is included in the concurrent list?
 (A) Trade (B) Education (C) Police (D) Banking

90. In which system of elected bodies about one third seats are reserved for women?
(A) Panchayats and urban bodies (B) Lok Sabha
(C) Rajya Sabha (D) State Assemblies
91. The Voting age was lowered from 21 years to 18 years according to which amendment of constitution?
(A) 52nd (B) 61st (C) 86th (D) 92nd
92. Which is the Headquarters of the United Nation Educational Scientific and Cultural Organization located....?
(A) Rome (B) Paris (C) Mexico (D) New York
93. When does the growth rate of Population became very high?
(A) Both the birth rate and death rate remain high
(B) The death rate decreases but the birth rate remains high
(C) There is reduction in both
(D) All the above
94. Which is meant by division of labour?
(A) Specialization of economic activity
(B) Production on large scale
(C) Specialization of quantity and quality of production
(D) Increase in Production
95. What is increased due to the gap between the demand and supply?
(A) Un employment (B) Price of goods
(C) Mobility of Labour (D) Poverty
96. Which type of tax is land revenue in India?
(A) Direct tax (B) Indirect tax (C) Income tax (D) Custom duty
97. "Hallmark" is used as a logo for which of the following-
(A) Agricultural Products (B) Jewellery
(C) Electrical goods (D) Milk Products
98. When do we celebrate "Population day" every year?
(A) 10th July (B) 11th August (C) 11th January (D) 10th December
99. Who was the first President of the Indian planning commission-
(A) Lal Bahadur Shastri (B) Jagjeevan Ram
(C) Pt. Jawahar Lal Nehru (D) Indira Gandhi
100. Which one of the following is the most appropriate meaning of under employment?
(A) Workers are not Paid for their work
(B) Workers are working less than what they are capable of doing
(C) Workers are working in a lazy manner
(D) Workers do not want to work

ANSWERS

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

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***NOTE** – Correct answer is 28 but it is not given in the options.