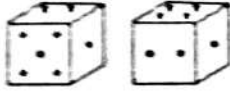


14. Two positions of dice are shown below. How many points will appear on the opposite to the face containing 5 points?



- 1) 3
3) 2

- 2) 1
4) 4

15. All the faces of a cube are painted with blue colour. Then it is cut into 125 small equal cubes.

How many small cubes will be formed having only one face coloured?

- 1) 54
3) 16

- 2) 8
4) 24

16. Which one will replace the question mark?



- 1) 45
3) 32

- 2) 41
4) 40

17. Choose the word which is different from the rest?

- 1) Japan
3) Sri Lanka

- 2) India
4) New Zealand

18. Choose the pair in which the words are differently related from the rest.

- 1) Scalpel : Surgeon
3) Awt : Cobbler

- 2) Chisel : Soldier
4) Knife : Chef

19. Which one of the following is always found in 'Bravery'?

- 1) Experience
3) Courage

- 2) Power
4) Knowledge

20. A camera always has

- 1) Reels
3) Stand

- 2) Flash
4) Lens

21. Which word does not belong with the others?

- 1) Noun
3) Punctuation

- 2) Preposition
4) Adverb

22. Statements :

I. The staff of an organisation called off the strike they were observing in protest against privatization.

II. The staff of an organisation went on strike anticipating a threat to their jobs

1. Statement I is the cause and statement II is its effect

2. Statement II is the cause and statement I is its effect

3. Both the statements I and II are independent causes

4. Both the statements I and II are effects of independent causes

23. Arrange the words given below in a meaningful sequence.

- i) Heel
iii) Skull
v) Knee
vii) Thigh
ix) Face

- ii) Shoulder
iv) Neck
vi) Chest
viii) Stomach
x) Hand

1) iii, iv, vii, ix, ii, v, viii, x, vi, i

2) iii, ix, iv, ii, x, vi, viii, vii, v, i

3) ii, iv, vii, x, i, v, viii, ix, vi, iii

4) iv, vii, x, i, ix, vi, ii, v, viii, iii

24. Flow : River :: Stagnant : ?

- 1) Rain
3) Pool

- 2) Stream
4) Canal

25. Dev, Kumar, Nilesh, Ankur and Pintu are standing facing to the North in a playground as given below:

I. Kumar is at 40 m to the right of Ankur.

II. Dev is at 60 m in the south of Kumar.

III. Nilesh is at a distance of 25 m in the west of Ankur

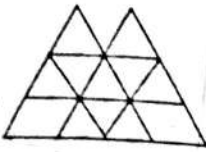
IV. Pintu is at a distance of 90 m in the North of Deve

Which one is in the North-East of the person who is to the left of Kumar?

- 1) Dev
3) Ankur

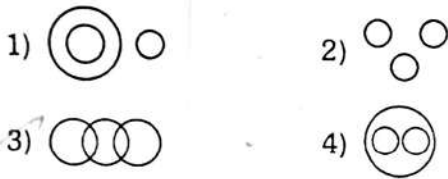
- 2) Nilesh
4) Pintu

26. Find the number of triangles in the given figure.

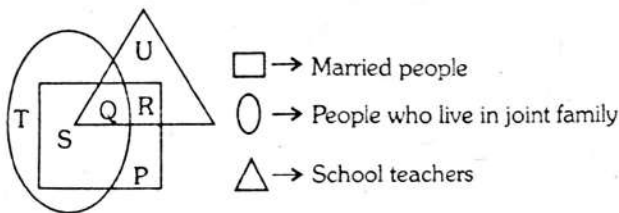


- 1) 16
3) 14
2) 18
4) 15

27. Which of the following diagrams indicates the best relation between Travelers, Train and Bus?



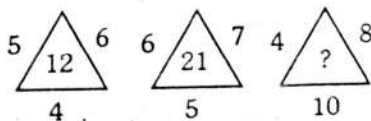
28. Study the following figure and answer the question given below.



By which letter, the married teachers who live in joint family are represented?

- 1) R
3) S
2) Q
4) P

29. Which one will replace the question mark?



- 1) 14
3) 32
2) 22
4) 320

30. A, B, C, D and E are sitting on a bench. A is sitting next to B, C is sitting next to D, D is not sitting with E who is on the left end of the bench. C is on the second position from the right. A is to the right of B and E. A and C are sitting together. In which position A is sitting?

- 1) Between B and D
3) Between E and D
2) Between B and C
4) Between C and E

31. I. A fruit basket contains more apples than lemons.
II. There are more lemons in the basket than there are oranges.
III. The basket contains more apples than oranges.

If the first two statements are true, the third statement is

- 1) True
3) Uncertain
2) False
4) Data not sufficient

32. Four defensive football players are chasing the opposing wide receiver, who has the ball. Calvin is directly behind the ball carrier. Jenkins and Burton are side by side behind Calvin. Zeller is behind Jenkins and Burton. Calvin tries for the tackle but misses and falls. Burton trips. Which defensive player tackles the receiver?

- 1) Burton
3) Jenkins
2) Zeller
4) Calvin

33. **Statements:** All bags are cakes. All lamps are cakes.
Conclusions:

I. Some lamps are bags II. No lamp is bag.

- 1) Only conclusion I follows
2) Only conclusion II follows
3) Either I or II follows
4) Neither I nor II follows

34. Look at this series: 14, 28, 20, 40, 32, 64, ...
What number should come next?

- 1) 52
3) 96
2) 56
4) 128

35. In the past, consumers would rarely walk into an ice cream store and order low-fat ice cream. But that isn't the case today. An increasing health consciousness combined with a much bigger selection of tasty low-fat foods in all categories has made low-fat ice cream a very profitable item for ice cream store owners. This paragraph best supports the statement that

- 1) low-fat ice cream produces more revenue than other low-fat foods
2) ice cream store owners would be better off carrying only low-fat ice cream
3) ice cream store owners no longer think that low fat ice cream is an unpopular item
4) low-fat ice cream is more popular than other kinds of ice cream

49. The film director wants an actress for the lead role of Lucy who perfectly fits the description that appears in the original screenplay. He is not willing to consider actresses who do not resemble the character as she is described in the screenplay, no matter how talented they are. The screenplay describes Lucy as an average-sized, forty something redhead, with deep brown eyes, very fair skin, and a brilliant smile. The casting agent has four actresses in mind.
- Actress #1 is a stunning red-haired beauty who is 5'9" and in her mid-twenties. Her eyes are brown and she has an olive complexion.
 - Actress #2 has red hair, big brown eyes, and a fair complexion. She is in her mid-forties and is 5'5".
 - Actress #3 is 5'4" and of medium build. She has red hair, brown eyes, and is in her early forties.
 - Actress #4 is a blue-eyed red head in her early thirties. She's of very slight build and stands at 5'.
- Who would perfectly fit as that of Lucy?
- I, II
 - II, III
 - I, IV
 - II, IV
50. The average monthly income of A and B is Rs. 5050. The average monthly income of B and C is Rs. 6250 and the average monthly income of A and C is Rs. 5200. What is the monthly income of A?
- 2000
 - 3000
 - 4000
 - 5000
51. How many days are there in x weeks x days?
- $14x$
 - $8x$
 - $7x^2$
 - 7
52. The speed of a boat in still water is 22 km/hr and the rate of current is 4 km/hr. The distance travelled downstream in 24 minutes is
- 9.4 km
 - 10.2 km
 - 10.4 km
 - 9.2 km
53. The current of a stream runs at the rate of 2 km per hr. A motor boat goes 10 km upstream and back again to the starting point in 55 min. Find the speed of the motor boat in still water?
- 22 km/hr
 - 12 km/hr
 - 20 km/hr
 - 16 km/hr
54. What is the HCF of 2.04, 0.24 and 0.8?
- 1
 - 2
 - 0.02
 - 0.04
55. A starts a business with Rs. 40,000. After 2 months, B joined him with Rs. 60,000. C joined them after some more time with Rs. 1,20,000. At the end of the year, out of a total profit of Rs. 3,75,000, C gets Rs. 1,50,000 as his share. How many months after B joined the business, did C join?
- 4 months
 - 5 months
 - 6 months
 - 7 months
56. The population of a town increased from 1,75,000 to 2,62,500 in a decade. What is the average increase in population per year?
- 4%
 - 6%
 - 5%
 - 50%
57. There are 5 yellow, 4 green and 3 black balls in a bag. All the 12 balls are drawn one by one and arranged in a row. Find out the number of different arrangements possible.
- 25230
 - 23420
 - 21200
 - 27720
58. In how many ways can 10 engineers and 4 doctors be seated at a round table if all the 4 doctors do not sit together?
- $13! - (10! \times 4!)13! - (10! \times 4!)$
 - $13! \times 4!13! \times 4!$
 - $14!14!$
 - $10! \times 4!$
59. A card is randomly drawn from a deck of 52 cards. What is the probability of getting a five of Spade or Club?
- 152
 - 113
 - 126
 - 112

60. A trader gives 12% additional discount on the discounted price, after giving an initial discount of 20% on the labelled price of an item. The final sale price of the item is Rs. 704. Find out the labelled price?
 1) Rs. 1,000 2) Rs. 2,000
 3) Rs. 1,200 4) Rs. 920
61. In a game of 90 points A can give B 15 points and C 30 points. How many points can B give C in a game of 100 points?
 1) 140 2) 20
 3) 300 4) 50
62. Find, the odd one out.
 187, 264, 386, 473, 682, 781
 1) 386 2) 187
 3) 781 4) 682
63. A sum of Rs. 2,500 amounts to Rs. 3,875 in 4 years with simple interest. What is the rate of interest?
 1) 12.25% 2) 12%
 3) 6% 4) 13.75%
64. The compound interest on Rs. 20,000 at 8% per annum is Rs. 3,328. What is the period (in year)?
 1) 1 2) 4
 3) 3 4) 2
65. What is the smallest number by which 3600 be divided to make it a perfect cube?
 1) 110 2) 210
 3) 420 4) 450
66. A train can travel 50% faster than a car. Both start from point A at the same time and reach point B, 75 kms away from A, at the same time. On the way, however, the train lost about 12.5 minutes while stopping at the stations. What is the speed of the car?
 1) 80 kmph 2) 102 kmph
 3) 120 kmph 4) 140 kmph
67. A can do a particular work in 6 days. B can do the same work in 8 days. A and B signed to do it for Rs. 3,200. They completed the work in 3 days with the help of C. How much is to be paid to C?
 1) Rs. 380
 2) Rs. 600
 3) Rs. 420
 4) Rs. 400
68. Two trains are running at 40 km/hr and 20 km/hr respectively in the same direction. If the faster train completely passes a man sitting in the slower train in 55 seconds, the length of the faster train is:
 1) 19 metre
 2) $27\frac{7}{9}$ metre
 3) $13\frac{2}{9}$ metre
 4) 33 metre
69. A wheel that has 6 cogs is meshed with a larger wheel of 14 cogs. If the smaller wheel has made 21 revolutions, what will be the number of revolutions made by the larger wheel?
 1) 15 2) 12
 3) 21 4) 9
70. Ayisha's age is $\frac{1}{6}$ th of her father's age. Ayisha's father's age will be twice Shankar's age after 10 years. If Shankar's eighth birthday was celebrated two years before, then what is Ayisha's present age?
 1) 10 years 2) 12 years
 3) 8 years 4) 5 years
71. $\log(64) = 1.806$, $\log(16) = ?$
 1) 1.204
 2) 0.903
 3) 1.806
 4) None of the above

72. A tank is filled by three pipes with uniform flow. The first two pipes operating simultaneously fill the tank in the same time during which the tank is filled by the third pipe alone. The second pipe fills the tank 5 hours faster than the first pipe and 4 hours slower than the third pipe. Time required by the first pipe to fill the tank is

- 1) 30 hours 2) 15 hours
3) 10 hours 4) 6 hours

73. The bankers discount and the true discount of a sum at 10% per annum simple interest for the same time are Rs. 100 and Rs. 80 respectively. What is the sum and the time?

- 1) Sum = Rs. 400 and Time = 5 years
2) Sum = Rs. 200 and Time = 2.5 Years
3) Sum = Rs. 400 and Time = 2.5 years
4) Sum = Rs. 200 and Time = 5 Years

74. Tea worth Rs. 126 per kg and Rs. 135 per kg are mixed with a third variety of tea in the ratio 1 : 1 : 2. If the mixture is worth Rs. 153 per kg, what is the price of the third variety per kg?

- 1) Rs.182.50 2) Rs. 170.5
3) Rs. 175.50 4) Rs 180

75. The price of commodity P increases by 40 paise every year, while the price of commodity Q increases by 15 paise every year. If in 2001, the price of commodity P was Rs. 4.20 and that of Q was Rs. 6.30, in which year commodity P will cost 40 paise more than the commodity Q?

- 1) 2008 2) 2009
3) 2010 4) 2011

76. Consider the following C program.

```
void f(int, short);
void main( )
{ int i = 100;
  short s = 12;
  short *p = &s;
  _____ ; // call to f( )
}
```

Which one of the following expressions, when placed in the blank above, will NOT result in a type checking error?

- 1) f(s,*s) 2) i=f(i, s)
3) f(i,*s) 4) f(i,*p)

77. The worst case running times of Insertion sort, Merge sort and Quick sort, respectively, are

- 1) $\Theta(n \log n)$, $\Theta(n \log n)$, and $\Theta(n^2)$
2) $\Theta(n^2)$, $\Theta(n^2)$, and $\Theta(n \log n)$
3) $\Theta(n^2)$, $\Theta(n \log n)$, and $\Theta(n \log n)$
4) $\Theta(n^2)$, $\Theta(n \log n)$, and $\Theta(n^2)$

78. Which one of the following protocols is NOT used to resolve one form of address to another one?

- 1) DNS 2) ARP
3) DHCP 4) RARP

79. Which of the following is/are example(s) of stateful application layer protocols?

- i) HTTP ii) FTP
iii) TCP iv) POP3
- 1) (i) and (ii) only
2) (ii) and (iii) only
3) (ii) and (iv) only
4) (iv) only

80. Match the following:

- | | |
|-------------------------|--------------------------|
| P) Lexical analysis | i) Leftmost derivation |
| Q) Top down parsing | ii) Type checking |
| R) Semantic analysis | iii) Regular expressions |
| S) Runtime environments | iv) Activation records |
- 1) P↔i, Q↔ii, R↔iv, S↔iii
2) P↔iii, Q↔i, R↔ii, S↔iv
3) P↔ii, Q↔iii, R↔i, S↔iv
4) P↔iv, Q↔i, R↔ii, S↔iii

81. In an Ethernet local area network, which one of the following statements is TRUE?

- 1) A station stops to sense the channel once it starts transmitting a frame
- 2) The purpose of the jamming signal is to pad the frames that are smaller than the minimum frame size
- 3) A station continues to transmit the packet even after the collision is detected
- 4) The exponential backoff mechanism reduces the probability of collision on retransmissions

82. Consider the following transaction involving two bank accounts x and y.

```
read (x) ; x := x - 50; write (x) ; read (y);  
y := y + 50 ; write (y)
```

The constraint that the sum of the accounts x and y should remain constant is that of

- | | |
|--------------|----------------|
| 1) Atomicity | 2) Consistency |
| 3) Isolation | 4) Durability |

83. A software requirements specification (SRS) document should avoid discussing which one of the following?

- 1) User interface issues
- 2) Non-functional requirements
- 3) Design specification
- 4) Interfaces with third party software

84. Identify the correct order in which a server process must invoke the function calls

accept, bind, listen, and recv according to UNIX socket APL

- 1) listen, accept, bind, recv
- 2) bind, listen, accept, recv
- 3) bind, accept, listen, recv
- 4) accept, listen, bind, recv

85. Consider the following relation Cinema (theater, address, capacity) Which of the following options will be needed at the end of the SQL query

```
SELECT P1. address  
FROM Cinema P1
```

Such that it always finds the addresses of theaters with maximum capacity?

- 1) WHERE P1. Capacity > = All (select P2. Capacity from Cinema P2)
- 2) WHERE P1. Capacity > = Any (select P2. Capacity from Cinema P2)
- 3) WHERE P1. Capacity > = All (select max (P2. Capacity) from Cinema P2)
- 4) WHERE P1. Capacity > = Any (select max (P2. Capacity) from Cinema P2)

86. Which one of the following fields of an IP header is NOT modified by a typical IP router?

- | | |
|-----------------------|-------------------|
| 1) Checksum | 2) Source address |
| 3) Time to Live (TTL) | 4) Length |

87. A file is organized so that the ordering of data records is the same as or close to the ordering of data entries in some index. Then that index is called

- | | |
|--------------|----------------|
| 1) Dense | 2) Sparse |
| 3) Clustered | 4) Unclustered |

88. Which of following statements is/are FALSE?

- I. XML overcomes the limitations in HTML to support a structured way of organizing content.
- II. XML specification is not case sensitive while HTML specification is case sensitive.
- III. XML supports user, defined tags while HTML uses pre-defined tags.
- IV. XML tags need not be closed while HTML tags must be closed.

- | | |
|-------------------|--------------------|
| 1) II only | 2) I only |
| 3) II and IV only | 4) III and IV only |

97. Which one of the following socket API functions converts an unconnected active TCP socket into a passive socket?

- 1) connect
- 2) bind
- 3) listen
- 4) accept

98. A thread is usually defined as a 'light weight process' because an operating system (OS) maintains smaller data structures for a thread than for a process. In relation to this, which of the following is TRUE?

- 1) On per-thread basis, the OS maintains only CPU register state
- 2) The OS does not maintain a separate stack for each thread

- 3) On per-thread basis, the OS does not maintain virtual memory state
- 4) On per thread basis, the OS maintains only scheduling and accounting information

99. The minimum number of D flip-flops needed to design a mod-258 counter is

- 1) 9
- 2) 8
- 3) 512
- 4) 258

100. In the IPv4 addressing format, the number of networks allowed under Class C addresses is

- 1) 2^{14}
- 2) 2^7
- 3) 2^{21}
- 4) 2^{24}

MCA 2018 - ANSWERS

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