

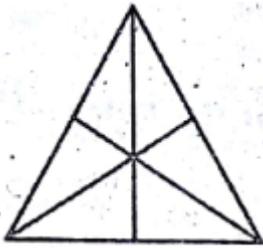
**MCA 2016 - EXAMINATION PAPER**

1. A train running at the speed of 60 km/hr crosses a pole in 9 seconds. What is the length of the train?
  - 1) 540 metres
  - 2) 180 metres
  - 3) 324 metres
  - 4) 150 metres
2. A, B and C can do a piece of work in 20, 30 and 60 days respectively. In how many days can A do the work if it is assisted by B and C on every third day?
  - 1) 12
  - 2) 15
  - 3) 16
  - 4) 18
3. In a store, the profit is 320% of the cost. If the cost increases by 25% but the selling price remains constant, approximately what percentage of the selling price is the profit?
  - 1) 30
  - 2) 70
  - 3) 100
  - 4) 250
4. The sum of ages of 5 children born at the intervals of 3 years each is 50 years. What is the age of the youngest child?
  - 1) 4 years
  - 2) 8 years
  - 3) 10 years
  - 4) None of the above
5. The average of 20 numbers is zero. Of them, at the most, how many may be greater than zero?
  - 1) 0
  - 2) 1
  - 3) 10
  - 4) 19
6. The average age of husband, wife and their child 3 years ago was 27 years and that of wife and the child 5 years ago was 20 years. The present age of the husband is
  - 1) 35 years
  - 2) 40 years
  - 3) 50 years
  - 4) None of the above
7. The greatest number of four digits which is divisible by 15, 25, 40 and 75 is :
  - 1) 9000
  - 2) 9400
  - 3) 9600
  - 4) 9800
8. What should come in place of both X in the equation  $\frac{x}{128} = \frac{162}{x}$ ?
  - 1) 12
  - 2) 14
  - 3) 144
  - 4) 196
9. Which one of the following is not a prime number?
  - 1) 31
  - 2) 61
  - 3) 71
  - 4) 91
10. A man complete a journey in 10 hours. He travels first half of the Journey at the rate of 21 km/hr and second half at the rate of 24 km/hr. Find the total journey?
  - 1) 220km
  - 2) 224km
  - 3) 230 km
  - 4) 234 km
11.  $(51+52+53+\dots+100) = ?$ 
  - 1) 2525
  - 2) 2975
  - 3) 3225
  - 4) 3775
12. If 20% of a=b, then b% of 20 is the same as
  - 1) 4% of a
  - 2) 5% of a
  - 3) 20% of a
  - 4) None of the above
13. A number consists of two digits. If the digits interchange places and the new number is added to the original number, then the resulting number will be divisible by
  - 1) 3
  - 2) 5
  - 3) 9
  - 4) 11
14. What is the probability of getting a sum 9 from two throws of a dice?
  - 1)  $\frac{1}{6}$
  - 2)  $\frac{1}{8}$
  - 3)  $\frac{1}{9}$
  - 4)  $\frac{1}{12}$
15. If  $a-b=3$  and  $a^2+b^2=29$ , find the value of  $ab$ .
  - 1) 10
  - 2) 12
  - 3) 15
  - 4) 18
16. Find the number of triangles in the given figure.



- 1) 8                                      2) 10  
3) 12                                      4) 14

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



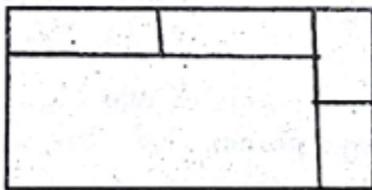
- 1) 16                                      2) 13  
3) 9                                        4) 7

18. Count the number of squares in the given figure.



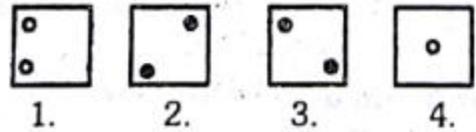
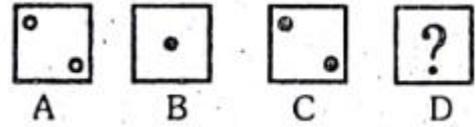
- 1) 32                                      2) 30  
3) 29                                      4) 28

19. What is the number of rectangles in the following figure?



- 1) 6                                        2) 7  
3) 9                                        4) 11

20. There is some relationship between diagrams A and B. The same relationship persists between C and D. Find the right diagram for D from the alternatives.



- 1) 2                                        2) 2  
3) 3                                        4) 4

21. B, D, G, I, L, ?

- 1) M                                        2) N  
3) O                                        4) P

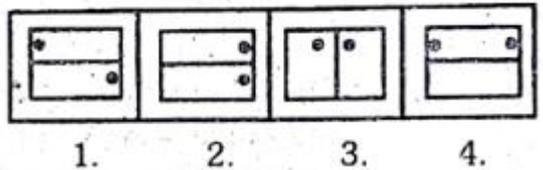
22. HI, JI, KL, ML, NO, ??

- 1) PO                                      2) PQ  
3) OP                                      4) QO

23. If SYSTEM is written as SYSMET and NEARER is written as AENRER, then FRACTION will be coded as

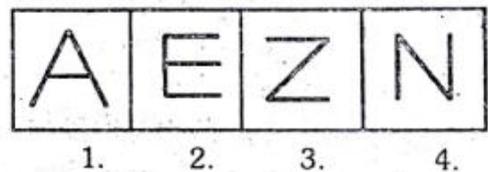
- 1) Carfnoit                                2) Carftion  
3) Noitfrac                                4) Fracnoit

24. Choose the figure which is different



- 1) 1                                        2) 2  
3) 3                                        4) 4

25. Choose the figure which is different



- 1) 1                                        2) 2  
3) 3                                        4) 4

26. If BAD is written as YZW and SAME as then LOVE will be coded as

- 1) ROWN                                    2) OJUC  
3) OLEV                                    4) NOPL

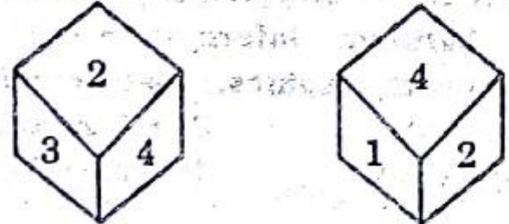
27. Find the missing term of the following series;

- DCXV, MGTS, POLK, TSHG  
1) KLOP                      2) LKOP  
3) KLPO                      4) LKPO
28. Find the odd man out:  
Iron Box, Grinder, Fan, Gas stove  
1) Iron Box                      2) Grinder  
3) Fan                              4) Gas stove
29. 1:1:: 25: ?  
1) 1                              2) 625  
3) 25                              4) 15
30. Knife : Chief : : ?  
1) Oxygen : Min              2) Plough : Farmer  
3) Carpenter: Saw  
4) Newspaper: Editor
31. Look at this series: 2, 1, (1/2), (1/4),....  
What number should come next?  
1) (1/3)                          2) (1/8)  
3) (2/8)                          4) (1/16)
32. Tanya is older than Eric.  
Cliff is older than Tanya  
Eric is older than Cliff  
If the first two statements are true, the  
third statement is  
1) True                              2) False  
3) Uncertain  
4) None of the above
33. Rahim moves 20 metres in east direction  
and then turns to his left and then moves  
15 metres and then he turns to his right and  
moves 25 metres. After this he turns to his  
right and moves 15 metres. Now how far is  
he from his starting point.  
1) zero metre                  2) 40 metres  
3) 50 metres                      4) 45 metres
34. Marathon is to race as hibernation is to  
1) winter                          2) bear  
3) dream                              4) sleep
35. Careful is to cautious as boastful is to  
1) arrogant                          2) humble  
3) joyful                              4) suspicious
36. Fill in the blank:  
SCD, TEF, UGH, \_\_\_\_\_, WKL  
1) CMN                              2) UJI
- 3) VIJ                              4) IJT
37. Fill in the blank:  
QAR, RAS, SAT, TAU, \_\_\_\_\_  
1) UAV                              2) UAT  
3) TAS                              4) TAT
38. Erin is twelve years old. For three years,  
she has been asking her parents for a dog.  
Her parents have her that they believe dog  
would not be happy in an apartment, but  
they have given her permission to have a  
bird. Erin has not yet decided what kind of  
bird she would like to here.  
Which is not the correct statement?  
1. Erin's parents like birds better than they  
like dogs  
2. Erin does not like birds  
3. Erin and her parents live in an apartment  
4. Erin and her parents would like to move
39. Statements:  
All tubes are handles.  
All cups are handles.  
Conclusions:  
I) An cups are tubes.  
II) Some handles are not cups.  
1) Only conclusion I follows  
2) Only conclusion II follows  
3) Either I or If follows  
4) Neither I nor II follows
40. Statements:  
Some books are tables.  
Some tables are mirrors.  
Conclusions:  
I) Some mirrors are books.  
II) No book is mirror.  
1) Only conclusion I follows  
2) Only conclusion II follows  
3) Either I or II follows  
4) Neither I nor II follows
41. Statements:  
In a one day cricket match, the total runs  
made by a team were 200. Out of these  
160 runs were made by spinners.  
Conclusions:

- I) 80% of the team consists of spinners.  
 II) The opening batsmen were spinners.  
 1) Only conclusion I follows  
 2) Only conclusion II follows  
 3) Either I or II follows  
 4) Neither I nor II follows
42. Statements:  
 A bird in hand is worth two in the bush.  
 Conclusions:  
 I) We should be content with what we have.  
 II) We should not crave (or what is not).  
 1) Only conclusion I follows  
 2) Only conclusion II follows  
 3) Either I or II follows  
 4) Both I and II follow
43. Which word does NOT belong with the others?  
 1) inch                      2) ounce  
 3) centimeter              4) yard
44. Which word does NOT belong with the others?  
 1) Leopard                  2) cougar  
 3) elephant                  4) Hon
45. When they heard news of the hurricane, Maya and Julian decided to change their vacation plans. Instead of travelling to the island beach resort, they booked a room at a fancy new spa in the mountains. Their plans were a bit more expensive, but they'd heard wonderful things about the spa and they were relieved to find availability on such short notice.  
 1) Maya and Julian take beach vacations every year  
 2) The spa is overpriced  
 3) It is usually necessary to book at least six months in advance at the spa  
 4) Maya and Julian decided to change their vacation plans because of the hurricane
46. The time required for the fetching and execution of one simple machine instruction is  
 1) Delay time                  2) CPU cycle  
 3) Real time                    4) Seek time
47. Which access method is used for obtaining a record from a cassette tape?  
 1) Direct                        2) Sequential  
 3) Random                      4) All of the above
48. Which type of system puts the user into direct conversation with the computer through a keyboard?  
 1) Real time processing  
 2) Interactive computer  
 3) Batch processing  
 4) Time sharing
49. A hybrid computer uses a \_\_\_\_\_ to convert digital signals from a computer into analog signals.  
 1) Modulator                  2) Demodulator  
 3) Modem                        4) Decoder
50. A medium for transferring data between two locations is called  
 1) Network  
 2) Communication channel  
 3) Modem  
 4) Bus
51. Conversion of an octal number 142s to binary number is  
 1) 1100010<sub>2</sub>                  2) 110110<sub>2</sub>  
 3) 1100011<sub>2</sub>                  4) 1101101<sub>2</sub>
52. Primary storage is \_\_\_\_\_ as compared to secondary storage.  
 1) Slow and inexpensive  
 2) Fast and inexpensive  
 3) Fast and expensive  
 4) Slow and expensive
53. What is the term which represents the use of links between Information- of all sorts whether text, graphics, video or audio-based?  
 1) Hypertext                    2) Hypermedia  
 3) HyperCard                  4) Wildcard
54. A sizeable geographical area with communication based on the telephone system is though as

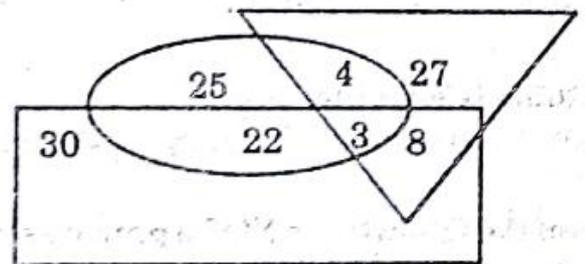
- 1) Local area network  
2) Wide area network  
3) Modulator-Demodulator  
4) All of the above
55. One nibble is equal to  
1) 4 bits                      2) 8 bits  
3) 6 bits                      4) 16 bits
56. Which of the following is NOT a primary storage device?  
1) Magnetic tape            2) Magnetic disk  
3) Optical disk                4) All of the above
57. How long is an IPv6 address?  
1) 32 bits                      2) 128 bytes  
3) 64 bits                      4) 128 bits
58. Which protocol does Ping use?  
1) TCP                         2) ARP  
3) ICMP                        4) BootP
59. What is Hypertext Transfer Protocol (HTTP)?  
1) The protocol to copy files between computers  
2) The transfer protocol to transfer Web pages to a browser  
3) The database access protocol for SQL statements  
4) The hardware/software protocol that limits access to company data
60. A proxy server is used for which of the following?  
1) To provide security against unauthorized users  
2) To process client requests for Web ipages  
3) To process client requests for database access  
4) To provide TCP/IP
61. If + means  $\times$ , - means + and  $\times$  means find the value of  $5 + 4 - 18 \times 3$ ?  
1) -34                         2) 6  
3) 26                            4) 15

62. Two positions of a dice are shown below, find out which number is opposite to face 4?



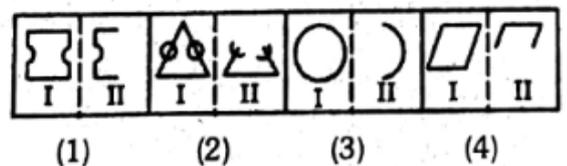
- 1) 3                              2) 6  
3) 5                              4) 1

**Direction:** In the following diagram the rectangle represents artists, Circle — players, triangle — doctors, then answer the following questions (63-66)

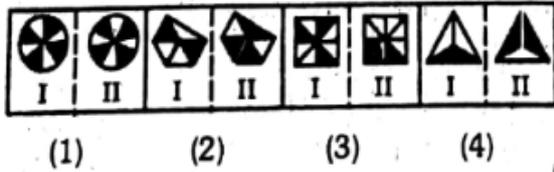


63. How many doctors are both players and artists?  
1) 4                              2) 8  
3) 3                              4) 11
64. How many artists are players?  
1) 22                             2) 25  
3) 30                             4) 29
65. How many artists are neither players nor doctors?  
1) 22                             2) 29  
3) 25                             4) None
66. How many doctors are neither players nor artists?  
1) 22                             2) 25  
3) 27                             4) 29
67. Pointing to a boy, Ramesh said, "His only brother's mother is my father's wife". How is Ramesh related to that boy?  
1) Uncle                        2) Father  
3) Nephew                      4) Brother

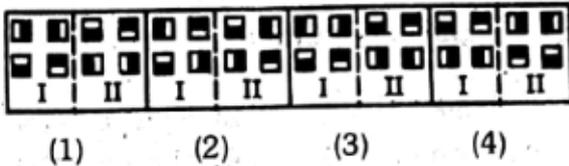
68. Introducing a woman, a man said, "Her mother's husband's sister is my aunt". How is the man related to the woman?  
1) Nephew                      2) Brother  
3) Uncle                        4) Cousin
69. If the day two days after tomorrow be Thursday, what day would have been two days before, yesterday?  
1) Friday                        2) Tuesday  
3) Monday                      4) Sunday
70. In a certain code BODY is written as APCZ. How would DELHI be written in that code?  
1) CFKGI                        2) BFKGI  
3) CFKIH                        4) CFKHI
71. A man sees a train passing over a bridge 1 km long. The length of the train is half that of the bridge. If the train clears the bridge in 2 minutes, the speed of the train is  
1) 30km/hr.                      2) 45km/hr.  
3) 50 km/hr.                      4) 60 km/hr.
72. The least number of complete years in which a sum of money put out at 20% compound interest will be more than doubled is  
1) 3                                2) 4  
3) 5                                4) 6
73. If the diagonal of a square is doubled to make the diagonal of another square, the area of the new square will become  
1) two-fold                        2) Three-fold  
3) four-fold                        4) remain the same
74. A toothed wheel of diameter 50 cm is attached to a smaller wheel of diameter 30 cm. How many revolutions will the smaller wheel make when the larger one makes 15 revolutions?  
1) 18                                2) 20  
3) 25                                4) 30
75. The number of rounds that a wheel of diameter  $\frac{7}{11}$  m will make in going 4 km is  
1) 1000                            2) 1500  
3) 1700                            4) 2000
76. Four circular cardboard pieces, each of radius 7 cm are placed in such a way that each piece touches two other pieces. The area of the space enclosed by the four pieces is  
1)  $21 \text{ cm}^2$                         2)  $42 \text{ cm}^2$   
3)  $84 \text{ cm}^2$                         4)  $168 \text{ cm}^2$
77. Four horses are tethered at four-corners of a square plot of side 63 metres so that they just cannot reach one another. The area left ungrazed is  
1)  $675.5 \text{ m}^2$                         2)  $780.6 \text{ m}^2$   
3)  $785.8 \text{ m}^2$                         4)  $850.5 \text{ m}^2$
78. The length of the longest rod that can be placed in a room 30 m long, 24 m broad and 18 m high, is  
1) 30m                              2)  $15\sqrt{2}$  m  
3)  $30\sqrt{2}$  m                        4) 60m
79. A well with 14m inside diameter is dug 10 m deep. Earth taken out of it has been spread evenly all around it to a width of 21 m to form an embankment. The height of the embankment is  
1)  $\frac{1}{2}$  m                              2)  $\frac{2}{3}$  m  
3)  $\frac{3}{4}$  m                              4)  $\frac{3}{5}$  m
80. Find the day of the week on 25th December, 1995.  
1) Monday                        2) Friday  
3) Saturday                        4) Tuesday
- Direction:** In each of the following figures (81-85) in three out of the given four pairs of figures, the first element is related to the second element in the same particular manner. Spot out the pair in which this relationship does not exist between the figures.
- 81.



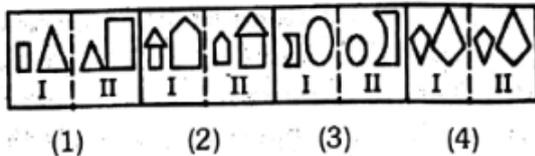
82.



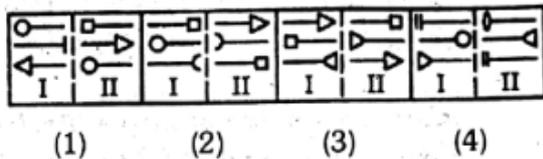
83.



84.

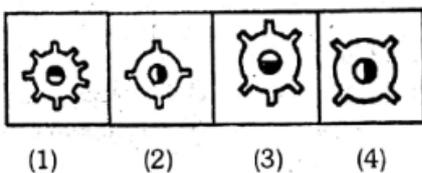


85.

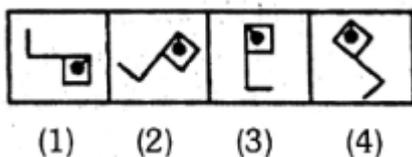


**Directions:** Out of four-figure in question (86-90) (1), (2), (3) and (4) given in each problem, three are similar in a certain way. However, one figure is not like the other three. Choose the figure, which is different from the rest.

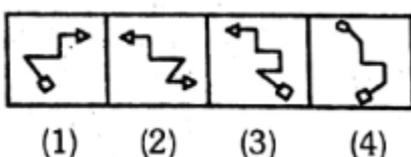
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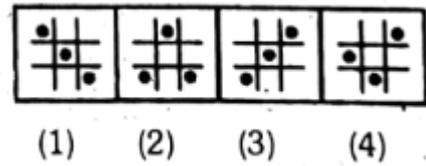
87.



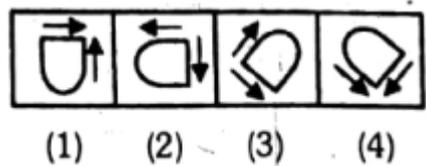
88.



89.



90.



91. The output of a 2 Input OR gate is 0 only when its

- 1) both inputs are 0
- 2) either input is 1
- 3) both inputs are 1
- 4) either input is 0

92. In a disk pack containing 6 disks there are 200 tracks on each disk surface, each track is divided into 50 sectors and each sector contains 512 characters of one byte each. What is the total storage capacity of disk pack in bytes?

- 1)  $512 \times 50 \times 200 \times 12$
- 2)  $512 \times 50 \times 200 \times 10$
- 3)  $512 \times 50 \times 200 \times 6$
- 4)  $512 \times 50 \times 200 / 10$

93. A microchip is usually put into a plastic case which protects it and makes it easier to handle. Next, the chip is connected to the pins in the case with the help of tiny wires. What are these wires made of?

- 1) Silver
- 2) Copper
- 3) Aluminium
- 4) Gold

94. Ethernet uses

- 1) Bus topology
- 2) Ring topology
- 3) Star topology
- 4) Tree topology

95. A family of polynomial block codes designed to correct burst errors is known as

- 1) Bar codes
- 2) Gray codes
- 3) Fire codes
- 4) Mnemonics codes

96. A method of implementing a memory management is

- 1) Buddy system
- 2) Bridgware
- 3) Broadband coaxial system

- 4) All of the above
97. A language based on graphics for use in education is  
1) PROLOG                      2) LOGO  
3) COBOL                      4) BASIC
98. Which is the test of a program, usually in a high level language?  
1) Bard code                      2) Gray code  
3) Source code                      4) Object code
99. Which is a term peculiar to direct access storage?  
1) Blocking                      2) Bucket  
3) Chaining                      4) Channel
100. Which is a programming language for military applications?  
1) COBOL                      2) CORAL  
3) C                      4) FORTRAN

**MCA 2016 – ANSWERS**

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

**MCA 2016 – DETAILED SOLUTIONS**

1. (4)  
Speed of the train = 60 km / hr  
=  $60 \times \frac{5}{18}$  m/sec.  
Length of the train =  
Speed  $\times$  time taken to cross the pole  
=  $60 \times \frac{5}{18} \times 9 = 150$  metres
2. (2)  
Part of the work completed in 3 days  
=  $\frac{2}{20} + \left(\frac{1}{20} + \frac{1}{30} + \frac{1}{60}\right)$   
=  $\frac{1}{10} + \frac{3+2+1}{60}$   
=  $\frac{1}{10} + \frac{6}{60} = \frac{1}{10} + \frac{1}{10} = \frac{2}{10} = \frac{1}{5}$   
 $\therefore$  The work is completed in  $5 \times 3 = 15$  days.
3. (2)  
Let the cost price be Rs. 100  
Profit % = 320  
Selling price =  $100 + 320 =$  Rs. 420  
New cost price =  $100 + 25 = 125$   
New Profit =  $420 - 125 = 295$   
Required Percentage =  $\frac{295}{420} \times 100$   
=  $70.2381 = \approx 70\%$  (approx)
4. (1)  
Let the ages of fire children be  $x, x+3, x+6, x+9, x+12$  respectively.  
Sum =  $x + (x+3) + (x+6) + (x+9) + (x+12)$   
=  $50$   
 $5x + 30 = 50$   
 $5x = 50 - 30 = 20$   
 $\therefore x = \frac{20}{5} = 4$   
Age of the youngest child =  $X = 4$  years
5. (4)  
Average of 20 numbers is 0 if atleast one number is negative.  
Therefore average of 20 numbers is 0 then almost 19 number greater than zero.
6. (2)  
Let the present ages of husband wife and child be  $X, y$  and  $z$  respectively.

Then

$$\frac{(x-3) + (y-3)(z-3)}{3} = 27$$

$$\Rightarrow x+y+z-9 = 3 \times 27 = 81$$

$$\therefore x+y+z = 81+9 = 90 \dots (1)$$

Also

$$\frac{(y-5)(z-5)}{2} = 20$$

$$\Rightarrow y+z-10 = 2 \times 20 = 40$$

$$\Rightarrow y+z = 40+10 = 50 \dots (2)$$

$$(1)-(2) \Rightarrow$$

$$(x+y+z)-(y+z) = 90-50$$

$$\Rightarrow x = 40 \text{ years}$$

7. (3)

5	15, 25, 40, 75
5	3, 5, 8, 15
3	3, 1, 8, 3
	1, 1, 8, 1

LCM of (15, 25, 40, 75)

$$= 5 \times 5 \times 3 \times 8 = 600$$

Greatest four digit number divisible by 600 = 9600

8. (3)

$$\frac{x}{128} = \frac{162}{x}$$

$$x^2 = 128 \times 162$$

$$= 8 \times 16 \times 2 \times 81$$

$$= 16 \times 16 \times 81$$

$$\therefore x = \sqrt{16 \times 16 \times 81}$$

$$= 16 \times 9 = 144$$

9. (4)

$$91 = 7 \times 13$$

 $\therefore 91$  is not a prime number.

10. (2)

Let time taken to travel the first half be  $x'$  hr. Then time taken to travel the second half

$$= (10-x)\text{hr}$$

Distance covered in the first half =  $21x$ 

Distance covered in the second half =

$$24(10-x)$$

Distance-covered in the first half =

Distance covered in the second half

$$21x = 24(10-x)$$

$$= 240 - 24x$$

$$45x = 240$$

$$\therefore x = \frac{240}{45} = \frac{16}{3} \left(\frac{16}{3}\right)$$

$$\text{Total distance} = 2 \times 21 \left(\frac{16}{3}\right) = 224 \text{ km.}$$

11. (4)

Formula:

$$1+2+3+\dots n = \frac{n(n+1)}{2}$$

$$51+52+\dots + 100$$

$$= (1+2+3+\dots + 100) - (1+2+3+\dots + 50)$$

$$= \frac{100 \times 101}{2} - \frac{50 \times 51}{2}$$

$$= 5050 - 1275 = 3775$$

12. (1)

$$20\% \text{ of } a = b$$

$$\Rightarrow \frac{20}{100} \times a = b \Rightarrow \frac{a}{b} = 5$$

$$= \frac{4}{100} \times a = 4\% \text{ of } a$$

13. (4)

Let the two digit number be  $10a + b$

If the digits are interchanged then new number =  $10b + a$

$$\text{Sum} = (10a+b) + (10b+a)$$

$$= 11a + 11b$$

$$= 11(a+b)$$

$\therefore$  The sum is divisible by 11.

14. (3)

$$S = \{(1, 1), (1, 2), \dots, (1, 6)\}$$

$$(2, 1), (2, 2), \dots, (2, 6)$$

$\vdots$

$$(6,1), (6,2), \dots, (6, 6)\}$$

$$n(S) = 36$$

Favourable cases

$$A = \{(3, 6), (6, 3), (4, 5), (5, 4)\}$$

$$n(A) = 4$$

$$\text{Required Probability} = \frac{n(A)}{n(S)} = \frac{4}{36} = \frac{1}{9}$$

15. (1)

$$a-b = 3$$

$$a^2+b^2 = 29$$

Now

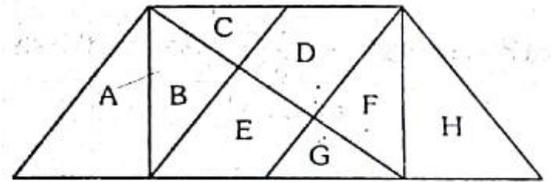
$$(a-b)^2 = a^2+b^2-2ab$$

$$\Rightarrow 3^2 = 29-2ab$$

$$2ab = 29-9 = 20$$

$$\therefore ab = \frac{20}{2} = 10$$

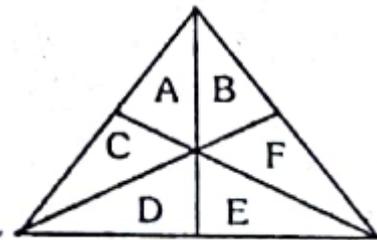
16. (4)



Triangles = A, B, C, G, F, H, BC, GF, EG, CD, BEG, CDF, GFH, ABEG

Total = 14

17. (1)



Triangles = A, B, C, D, E, F, DE, FB, AC, CDE, DEF, EFB, FBA, ABC, ACD, ABCDEF

Total = 16

18. (2)

Formula:

A square with  $n$  rows and  $n$  columns contains  $1^2+2^2+\dots+n^2$

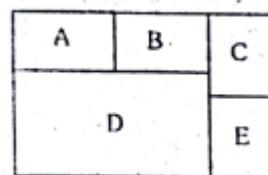
$$= \frac{n(n+1)(2n+1)}{6} \text{ squares}$$

Given square contains 4 rows and 4 columns.

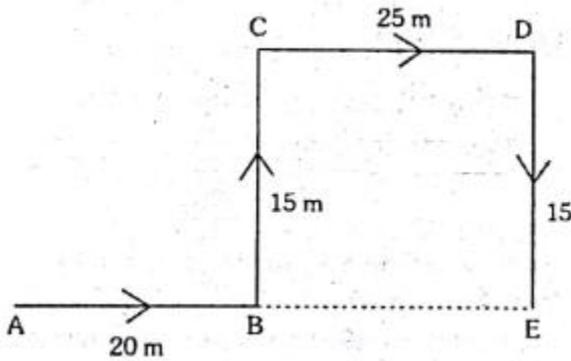
$$\therefore \text{Total squares} = 1^2+2^2+3^2+4^2$$

$$= \frac{4 \times 5 \times 9}{6} = 30$$

19. (3)

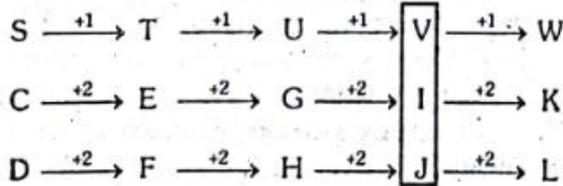




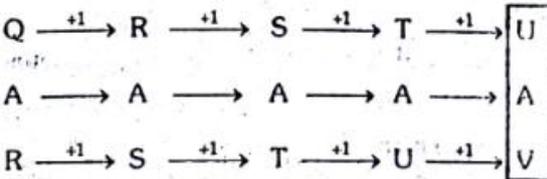


Required distance = AE  
 = AB + BE  
 = 20 + 25  
 = 45 m

36. (3)



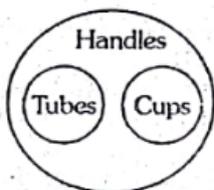
37. (1)



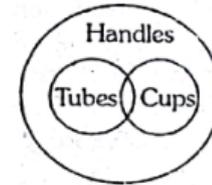
38. (3)

Since Erin's parents think a dog would not be happy in an apartment, we can reasonably conclude that the family lives in an apartment. We do not know if Erin's parents dislike dogs (choice (1)) or if Erin dislike bird (choice (2)). There is no support for choice (4)

39. (4)

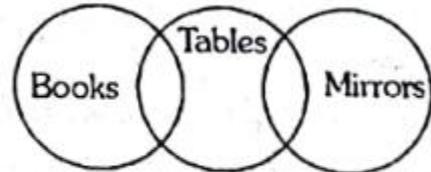


[OR]

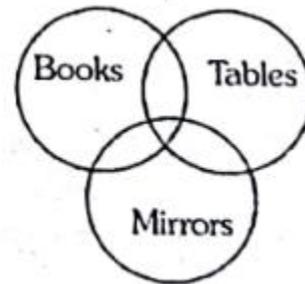


Neither conclusion I nor II follows.

40. (3)



[OR]



Either conclusions I or II follows.

41. (4)

According to the statement, 80% of the total runs were made by spinners. So (I) does not follow. Nothing about the open batsmen is mentioned in the statement. So conclusion II does not follow.

42. (4)

Both the given conclusions clearly bring out the central theme of the proverb given in the statement. So both conclusions (I) and (II) follow.

43. (2)

Length can be measured with the help of inch, centimeter and yard. Whereas ounce is used to measure weight of an object.

44. (3)

Lion, Leopard and Cougar are all belong to Cat family.

- Where as elephant does not belong to cat family.
45. (4)  
Statement 4 is true because of the first sentence. Statement I is nowhere supported. From the passage we conclude that Spa vacation is more expensive than the Island beach resort vacation, but it does not imply that Spa is overpriced. Hence Statement II is ruled out. From the passage there is no mention about reservation for a room atleast six months in advance. Hence statement 3 is not true. Only Statement 4 is true.
46. (2)  
CPO cycle is the time required for the execution of one simple processor operation such as an addition. Here note that this time is normally the reciprocal of the clock rate. The CPU cycle is one of many figures-of-merit for a computer system.
47. (2)  
**Sequential Access:**  
A sequential access is that in which the records are accessed in some sequence (i.e.) the information in the file is processed in order, one record after the other. This access method is the most primitive one. In order to obtaining a record from a cassette type, sequential access method is used.
48. (2)  
Interactive computer systems are programs that allow users to enter data or commands.  
Word processors and spreadsheet applications are most popular interactive programs.  
In other words, interactive computing refers to software which accepts input from humans as it runs.
49. (4)  
Hybrid computers are computers that exhibit features of analog computers and digital computers. Decoder is a device capable of converting audio or video signals into a different form.  
A phone with an integrated digital TV decoder is an example for digital to analogue.
50. (2)  
**Communication Channel:**  
It refers either to a physical transmission medium such as a wire or to a logical connection over a multiplexed medium such as a radio channel in telecommunications and computer networking.
51. (1)  
First convert  $142_8$  to decimal.
- |   |   |                |                                      |
|---|---|----------------|--------------------------------------|
| 1 | 4 | 2              |                                      |
|   |   |                |                                      |
|   |   | $\times 8^0 =$ | 2                                    |
|   |   | $\times 8^1 =$ | 32                                   |
|   |   | $\times 8^2 =$ | 64                                   |
|   |   |                | <hr style="width: 50%; margin: 0;"/> |
|   |   |                | $98_{10}$                            |
- Now convert  $98_{10}$  to binomial number.  
 $98 \div 2 = 49 - 0$  (remainder)  
 $49 \div 2 = 24 - 1$  (remainder)  
 $24 \div 2 = 12 - 0$  (remainder)  
 $12 \div 2 = 6 - 0$  (remainder)  
 $6 \div 2 = 3 - 0$  (remainder)  
 $3 \div 2 = 1 - 1$  (remainder)  
 $\therefore 142_8 = 1100010_2$
52. (4)  
A primary storage device is any storage device or component that can store non-volatile data in computers, servers and other computing devices (Hard disk, RAM)

- A secondary storage device refers to any volatile storage device that is internal or external to the computer (Pen drive, etc.) Primary storage is slow and expensive.
53. (2)  
**Hypermedia**  
Hypermedia is an extension to what is known as hypertext, or the ability to open new web pages by clicking text links on a web browser.  
Hypermedia extends upon this by allowing the person to click images; graphics and other media apart from text in order to create a non-linear network of information.
54. (2)  
A Wide Area Network (WAN) is a network that exists over a large-scale geographical area. A WAN connects different smaller networks, including MAN (Metro Area Networks) and LAN (Local Area Networks).
55. (1)  
1 nibble = 4 bits  
A bit is a value of either a 1 or 0  
A byte is 8 bits  
A kilobyte is 1024 bytes  
A megabyte is 1024 kilobytes  
A gigabyte is 1024 megabytes  
A terabyte is 1024 gigabytes
56. (4)  
Magnetic Tape, Magnetic disk and Optical disk are all secondary storage devices. All they are not primary storage devices.
57. (4)  
The length of an IPv6 address is 128 bits compared with 32 bits in IPv4.  
The address space therefore has  $2^{128}$  or approximately  $3.4 \times 10^{38}$  addresses.
58. (3)  
ICMP means Internet Control Message Protocol and is always coupled with the IP Protocol.
- The 'Ping' means the art of using the Ping utility or command. Ping uses ICMP at the network layer for communication.
59. (2)  
The Hypertext Transfer Protocol (HTTP) is an application protocol for distributed collaborative and hypermedia information systems.  
Hypertext transfer protocol is a communications protocol that transfers information on intranets and the world wide web to retrieve and publish hypertext.
60. (1)  
A proxy server is a computer that acts as a gateway between a local network and a larger-scale network such as the Internet.  
As advantage of a proxy server is that its/cache can serve all users.
61. (3)  
 $? = 5+4-18 \times 3$   
 $= 5 \times 4 + 18 \div 3$   
 $= 20 + 6 = 26$
62. (\*)  
Number opposite to face 4 is either 5 (or) 6.
63. (3)  
Number of doctors both players and artists = Intersection of triangle-circle and rectangle = 3
64. (2)  
Number of artists who are players = Common to rectangle and circle =  $22 + 3 = 25$
65. (4)  
Number of artists neither players nor doctors =  
= only rectangle = 30
66. (3)  
Number of Doctors neither players nor artists = Only triangle part = 27
67. (4)

Ramesh is brother of the boy.

68. (2)  
The man is brother of the woman.
69. (1)  
Tomorrow - Tuesday  
Today - Monday  
Yesterday - Sunday  
Two days before Sunday - Friday.

70. (3)
- |      |      |      |      |
|------|------|------|------|
| B    | O    | D    | Y    |
| ↓ -1 | ↓ +1 | ↓ -1 | ↓ +1 |
| A    | P    | C    | Z    |

In the same way

D	E	L	H	I
↓ -1	↓ +1	↓ -1	↓ +1	↓ -1
C	F	K	I	H

71. (2)  
Length of the bridge = 1 km  
Length of the train = 4 km  
Time taken = 2 min.  $\frac{2}{60} = \frac{1}{30}$  hrs.

Speed of the train

$$= \frac{\text{Length of the bridges} + \text{Length of the train}}{\text{Time taken}}$$

$$= \frac{1 + \frac{4}{30}}{\frac{1}{30}} = \frac{3}{2} \times 30$$

$$= 45 \text{ km / hr.}$$

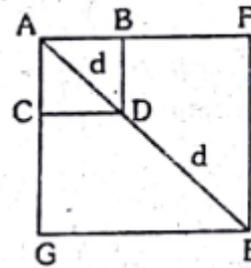
72. (2)
- $$P \left(1 + \frac{20}{100}\right)^n > 2P$$
- $$\Rightarrow \left(\frac{120}{100}\right)^n > 2$$
- $$\Rightarrow \left(\frac{6}{5}\right)^n > 2$$

Clearly,  $\left(\frac{6}{5}\right)^4 = \frac{6 \times 6 \times 6 \times 6}{5 \times 5 \times 5 \times 5}$

$$\frac{1296}{625} = 2.0736 > 2$$

$$\therefore n = 4 \text{ years}$$

73. (3)



Let the diagonal of the square ABCD be d.

Then Area of ABCD =  $\left(\frac{d^2}{2}\right)$

Diagonal of AFEG is 2d

Area of AFEG =  $\left(\frac{2d^2}{2}\right) = 2d^2$

$$= 4\left(\frac{d^2}{2}\right) = 4 \text{ (Area of ABCD)}$$

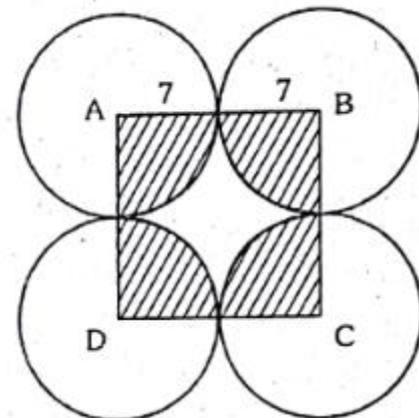
74. (3)  
Distance covered by smaller wheel in 1 revolution =  $2\pi \times 15 = 30\pi \text{ cm}$

Distance covered by the bigger wheel in 1 revolution =  $2\pi \times 25 = 50\pi \text{ cm}$

Then required revolutions =  $\frac{15 \times 50\pi}{30\pi}$   
= 25

75. (4)  
Required rounds =  $\frac{4000}{2 \times \frac{22}{7} \times \frac{7}{2} \times 11} = 2000$

76. (2)



Area of the shaded portion

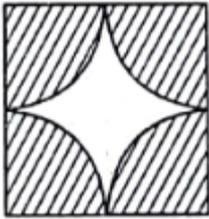
$$= 4\left(\frac{1}{4} \times \pi \times 7^2\right) = 154$$

$$= 4 \times \frac{1}{4} \times \frac{22}{7} \times 7 \times 7 = 154$$

Required area =  $14^2 - 154$

$$= 196 - 154 = 42 \text{ cm}$$

77. (4)



Area of the shaded portion

$$= 4\left(\frac{1}{4}\pi r^2\right)$$

$$= \frac{22}{7} \times \left(\frac{63}{2}\right)^2$$

$$= \frac{22}{7} \times \frac{63}{2} \times \frac{63}{2}$$

$$= 3118.5$$

$$\text{Required area} = 63^2 - 3118.5$$

$$= 3969 - 118.5$$

$$= 850.5$$

78. (3)

Length of the longest rod = Diagonal of the cube

$$= \sqrt{30^2 + 24^2 + 18^2}$$

$$= \sqrt{900 + 576 + 324}$$

$$= \sqrt{1800}$$

$$= \sqrt{2 \times 900}$$

$$= 30\sqrt{2}\text{m}$$

79. (2)

$$\text{Earth taken out} = \pi r^2 h$$

$$= \pi \cdot 7^2 \cdot 10$$

$$= 490\pi$$

$$\text{Earth spread out} = \pi (21+7)^2 h - \pi \cdot 7^2 h$$

$$= 490\pi$$

$$\Rightarrow \pi h [28^2 - 7^2] = 490\pi$$

$$h (28+7)(28-7) = 490$$

$$h \times 35 \times 21 = 490$$

$$h = \frac{490}{21 \times 35} = \frac{2}{3}\text{m}$$

80. (1)

$$25^{\text{th}} \text{ Dec. 1995}$$

$$= 1994 \text{ years} + \text{period from 1st January 1995 to 25th Dec. 1995}$$

$$1600 \text{ years} = 0 \text{ odd day}$$

$$300 \text{ years} = 1 \text{ odd day}$$

94 years = 5 odd days

1st Jan 1995 to 25th Dec. 1995

= 359 days = 2 odd days

Total odd days = 0 + 1 + 5 + 7

= 8 odd days

= 1 odd day (Divide by 7)

= Monday

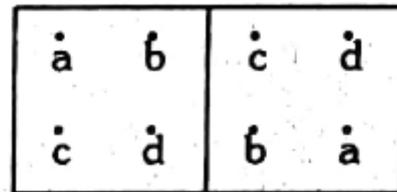
81. (2)

Except (2) in all other figures symmetrical half is removed from (I) to (II)

82. (3)

From I to II complement of shaded portion is shaded.

83. (2)

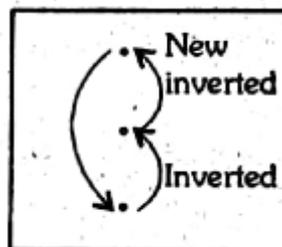


From I to II

84. (4)

From I to II the smaller design becomes bigger and bigger design becomes smaller.

85. (3)



From I to II

86. (1)

In all other figures the wheel has an even number of projections.

87. (4)

In all other figures, the pin inside the square is attached to one end of the extended side of the square.

88. (2)

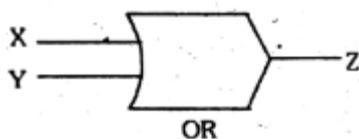
For all other figures the shapes on either ends of the curve are different. But in figure (2) the shapes on either ends of the curve are same.

89. (2)  
Except (2) in all other figures, dot appears in each row and each column.

90. (2)  
If all the figures are rotated to a position with the flat side up, then each one of the figures except in fig. (2) an arrow appears on the top and another one appears on the right hand side.

91. (1)  
The truth table for an OR-gate with two inputs looks like this.

X	Y	Z
0	0	0
0	1	1
1	0	1
1	1	1



92. (1)  
Storage capacity of an optical disk =  
No. of sectors  $\times$  No. of bytes per second  
Suppose a HDD (or disk pack) having 'n' plates then '2n' be the no. of recording surfaces/

$$\begin{aligned} \text{The disk capacity} &= 6 \times 2 \times 200 \times 50 \times 512 \\ &= 512 \times 50 \times 200 \times 12 \end{aligned}$$

93. (4)  
A microchip is usually put into a plastic case which protects it and makes it easier to handle. The chip is connected to the pins in the case with the help of tiny wires. These wires made of Gold.

94. (1)  
Ethernet uses a Bus logical Topology. All the devices on the network share the same

medium and all are identified based on their MAC address. Ethernet Topologies are fast, reliable throughout speed-10 Mbps.

Ethernet is the most widely used network Topology.

95. (3)  
A family polynomial block codes designed to correct burst errors is known as Fire Codes.

A code known as a fire code, can correct all burst errors of length N or less, where N is a strict parameter of the fire code defined by its generator polynomial.

96. (1)  
Memory management is a form of resource management applied to computer memory. Various methods of implementing a memory management are  
i) Fixed-size blocks allocation  
ii) Buddy blocks  
iii) Slab allocation  
iv) Stack allocation  
v) Garbage collection

In Buddy blocks, memory is allocated into several pools of memory instead of just one, where each pool represents blocks of memory of a certain power of two in size or blocks of some other convenient size progression.

97. (2)  
A language based on graphics for use in education is LOGO.

LOGO is an educational programming language, designed in 1967 by G. Bobrow. It is alternatively referred to as turtle graphics. LoGo is often used for young school children as a basic method of programming instructions into a computer to create a graphic.

98. (3)

In computing, source code is any collection of computer instructions, possibly with comments, written using a human-readable programming language, usually as ordinary text.

99. (2)

A direct-access storage device is another name for secondary storage devices that store data in discrete locations with a unique address, such as hard disk drives,

optical drives and most magnetic storage devices.

Records in a file are stored in blocks or as they are called in direct file notation, buckets.

100. (3)

The 'C' programming language is a computer programming language that was developed to do system programming for the operating system UNIX. They are used in Industrial and military applications.

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