

Time : 2 hours

Maximum marks : 100

Name of the Candidate :

Examination Centre :

Regn. Number :

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Signature of the Candidate :

INSTRUCTIONS TO CANDIDATES

1. Do not open the Question Book until the Hall Superintendent gives the signal for the commencement of the examination.
2. Write your Name, your Registration Number and the Name of your Examination Centre (as found in the HALL TICKET) and sign in the space provided above. Other than these and what is mentioned in item 6 below, do not write or mark anything anywhere on the Question Book.
3. After the commencement of the examination, open the Question Book and take out the ANSWER SHEET. If the Question Book or the Answer Sheet is not in good condition then ask for immediate replacement. No replacement will be made 5 minutes after the commencement of the examination.
4. Write and shade your Registration Number and Question Book Number and write the Name of the Examination Centre and put your signature in the Answer Sheet in the spaces provided.
5. The Question Book contains 100 questions. Answer all the questions. They carry equal marks.
6. The last few pages of the Question Book are blank except for the words 'FOR ROUGH WORK'. You can make any relevant rough calculations on these pages.
7. **Each correct answer carries 1 mark. For every wrong answer $\frac{1}{3}$ mark will be deducted.**
8. Shade, with black ball point pen, one of the four options against each question number in the Answer Sheet which according to you corresponds to the correct answer.
9. **Answers with multiple shading will be considered as wrong answer.**
10. Use the Answer Sheet carefully. No spare Answer Sheet will be given.
11. At the end of the examination when the Hall Superintendent announces 'Stop Writing', you must **stop writing immediately** and handover the Answer sheet to Hall Superintendent.
12. When you have completed answering, stand up and remain in your place. The Hall Superintendent will come to you and collect your Answer Sheet. Under no circumstances should be taken out of the Examination Hall. No candidate shall leave the Hall until the Answer Sheet is collected.
13. No candidate can leave the Hall during the first 30 minutes and the last 15 minutes of the examination.
14. No candidate can re-enter the Hall after leaving.
15. Calculator, tables or any other calculating devices and cell phone are strictly prohibited for this examination.

MCR 23

- Which of the following numbers completely divides $(461+462+463+464)$?
 - 9
 - 11
 - 10
 - 7
- In how many ways can 10 engineers and 4 doctors be seated at a round table if all the 4 doctors sit together?
 - $10! \times 4!$
 - $10!10!$
 - $13! \times 4!$
 - $14!$
- What is $\log_5 200 \times \log_{200} 125$?
 - 25
 - 6
 - 5
 - 3
- How many signals can be made using 6 different colored flags when any number of them can be hoisted at a time?
 - 2020
 - 1720
 - 1956
 - 1822
- 5 coins are tossed together. What is the probability of getting exactly 2 heads?
 - $1/2$
 - $7/16$
 - $5/16$
 - $4/11$
- In 100 meters race, A covers the distance in 36 seconds and B in 45 seconds. In this race A beats B by:
 - 20 meters
 - 9 meters
 - 22.5 meters
 - 25 meters
- There are two buildings P and Q. If 15 persons are sent from P to Q, then the number of persons in each building is the same. If 20 persons are sent from Q to P, then the number of persons in P is double the number of persons in Q. How many persons are there in building P?
 - 140
 - 90
 - 80
 - 120
- A boy was asked to multiply a number by 22. He instead multiplied the number by 44 and got the answer 308 more than the correct answer. What was the number to be multiplied?
 - 10
 - 12
 - 16
 - 14

9. John gets on the elevator at the 14th floor of a building and rides up at the rate of 84 floors per minute. At the same time, Vinod gets on an elevator at the 58th floor of the same building and rides down at the rate of 92 floors per minute. If they continue travelling at these rates, then at which floor will their paths cross?
- 32
 - 36
 - 38
 - 35
10. Find the odd man out: 5, 6, 14, 45, 185, 925, 5556
- 925
 - 185
 - 66
 - 5556
11. The speed of a bus increases by 2 kmph after every one hour. If the distance travelled in the first one hour was 35 km, what was the total distance travelled in 12 hours?
- 502 km
 - 552 km
 - 492 km
 - 422 km
12. 6 men and 8 women can complete a work in 10 days. 26 men and 48 women can finish the same work in 2 days. How many days are needed for 15 men and 20 women to do the same work?
- 6
 - 2
 - 4
 - 8
13. If $3\sqrt{5} + \sqrt{125} = 17.88$, then what will be the value of $\sqrt{80} + 16\sqrt{5}$?
- 22.35
 - 44.7
 - 13.41
 - 21.66
14. If m and n are whole numbers and $mn = 196$, what is the value of $(m - 3)^{n+1}$?
- 1
 - 121
 - 2744
 - 1331
15. If each edge of a cube is increased by 50%, find the percentage increase in its surface area.
- 125
 - 150
 - 175
 - 110
16. The average age of a class of 22 students is 21 years. The average increased by 1 when the teacher's age also included. What is the age of the teacher?
- 48
 - 45
 - 43
 - 44
17. Four bells ring simultaneously at starting and an interval of 6 sec, 12 sec, 15 sec and 20 sec respectively. How many times they ring together in 2 hours?
- 120
 - 60
 - 121
 - 112

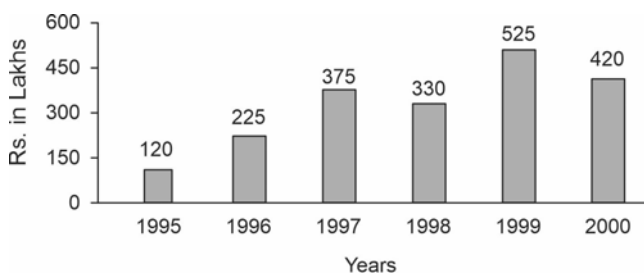
18. Two trains running in opposite directions cross a man standing on the platform in 27 seconds and 17 seconds respectively and they cross each other in 23 seconds. The ratio of their speeds is:
- 1 : 2
 - 3 : 4
 - 3 : 2
 - None of the above

19. The sum of first 45 natural numbers is:
- 1035
 - 1280
 - 2070
 - 2140

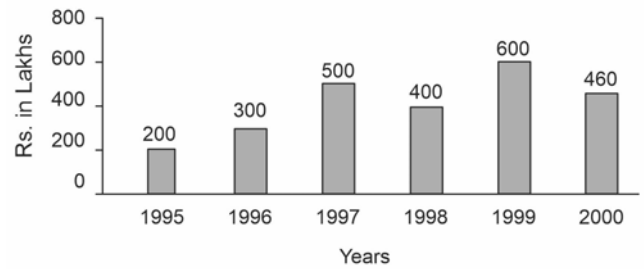
20. 49 pumps can empty a reservoir in 6.5 days, working 8 hours a day. If 196 pumps are used for 5 hours each day, then the same work will be completed in:
- 2 days
 - 2.5 days
 - 2.6 days
 - 3 days

Direction (21-25): Out of the two bar graphs provided below, one shows the amounts (in Lakh Rs.) invested by a Company in purchasing raw materials over the years and the other shows the values (in Lakh Rs.) of finished goods sold by the Company over the years.

Amount invested in Raw Materials (Rs. in Lakhs)



Value of Sales of Finished Goods (Rs. in Lakhs)

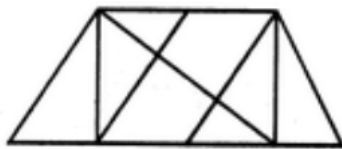


21. The maximum difference between the amount invested in Raw materials and value of sales of finished goods was during the year
- 1995
 - 1996
 - 1997
 - 1998
22. The value of sales of finished goods in 1999 was approximately what percent of the sum of amount invested in Raw materials in the years 1997, 1998 and 1999?
- 33
 - 37
 - 45
 - 49
23. What was the difference between the average amount invested in Raw materials during the given period and the average value of sales of finished goods during this period?
- Rs. 62.5 lakhs
 - Rs. 68.5 lakhs
 - Rs. 71.5 lakhs
 - Rs. 77.5 lakhs

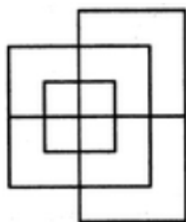
24. In which year, the percentage change (compared to the previous year) in the investment on Raw materials is same as that in the value of sales of finished goods?
- 1996
 - 1997
 - 1998
 - 1999

25. In which year, there has been a maximum percentage increase in the amount invested in Raw materials as compared to the previous year?
- 1996
 - 1997
 - 1998
 - 1999

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



- 8
 - 10
 - 12
 - 14
27. Find the minimum number of straight lines required to make the given figure.



- 13
- 15
- 17
- 19

28. Choose the alternative which is closely resembles the water image of the given combination/figure. **ADVANCE**
- ADVANCE
 - VDANVA
 - EVNVA
 - None of the above

29. A university library budget committee must reduce exactly five of eight areas of expenditure — I, J, K, L, M, N, O and P — in accordance with the following conditions:
- If both I and O are reduced, P is also reduced.
- If L is reduced, neither N nor O is reduced.
- If M is reduced, J is not reduced.
- Of the three areas J, K, and N exactly two are reduced.

Question :

If both K and N are reduced, which one of the following is a pair of areas neither of which could be reduced?

- I, L
 - J, L
 - J, M
 - I, J
30. Rahul, Prem, Shyam, Geet and Rinku are five friends among which Shyam is the tallest. Rahul is shorter than Prem but taller than Rinku. Geet is little shorter than Prem but little taller than Rahul. Who is taller than Rinku but shorter than Geet?
- Rahul
 - Rinku
 - Prem
 - Geet

31. What is the minimum number of colour pencils required to fill the spaces in the below figure with no two adjacent spaces have the same colour?



- a. 5
b. 2
c. 3
d. 6
32. Select the missing letter from the given options.

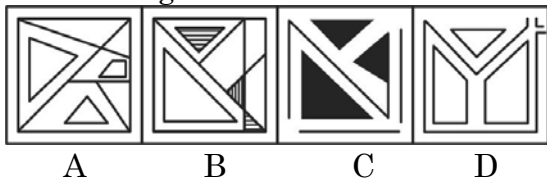
| | | |
|---|---|---|
| B | J | I |
| E | K | B |
| G | U | ? |

- a. O
b. M
c. K
d. P
33. The given problem figure is embedded in one of the given Answer Figures. Which is that Answer Figure?

Problem Figure



Answer Figure

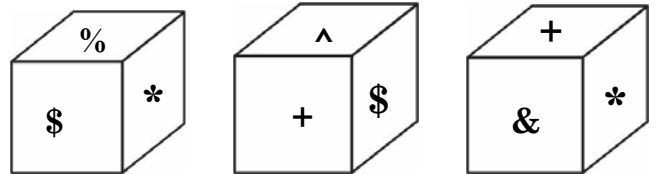


- a. C
b. D
c. B
d. A
34. What does this symbol mean '&'?
- a. Caret
b. Bar
c. Ampersand
d. Reversed Caret

35. $8(6+5) - 10 = ?$

- a. 76
b. 78
c. 80
d. 82

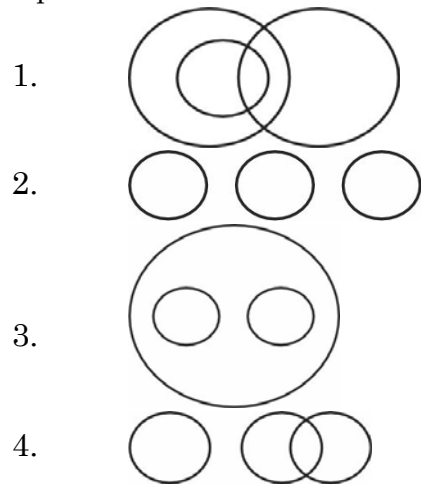
36. Three positions of a cube are shown below. What will come opposite to face containing '\$'?



- a. %
b. &
c. ^
d. +

37. Which of the following diagrams represent the relationship among males, fathers, advocates?

Options



1.
2.
3.
4.
- a. 1
b. 2
c. 3
d. 4

38. If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?



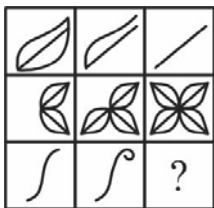
Options



1 2 3 4

- a. 1
b. 2
c. 3
d. 4
39. **Bread** is related to **Wheat** in the same way as **Brick** is related to
- a. Building
b. Cement
c. Clay
d. Fire
40. Select the Answer Figure that will correctly fit in the blank space in the Problem Figure.

Problem Figure



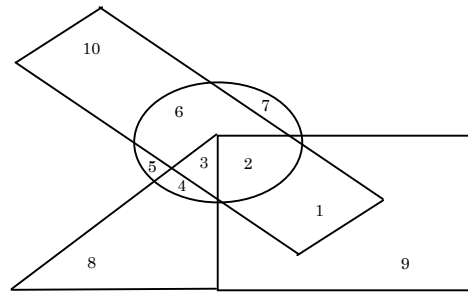
Answer Figures



A B C D

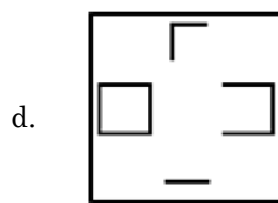
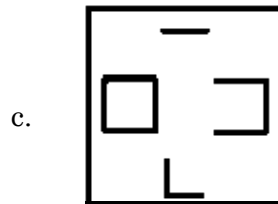
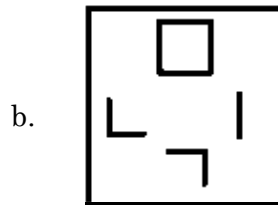
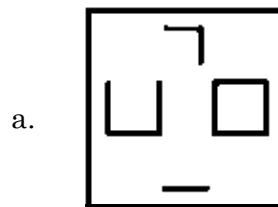
- a. A
b. B
c. C
d. D

41. According to the given Venn diagram, the total number of non-athletic and disciplined boys is



□ → Boys ○ → Athletic
△ → Girls ▭ → Disciplined

- a. 1
b. 28
c. 20
d. 10
42. Choose the figure which is different from the other three.



43. If white is called black, black is called red, red is called yellow, yellow is called green, green is called blue, blue is called violet and violet is called orange, what would be the colour of human blood?

- a. Green
- b. Black
- c. Red
- d. Yellow

44. A can work twice as fast as B. A and C together can work three times as fast as B. If A, B and C complete a job in 30 days working together, in how many days can each of them complete the work.

- a. 50, 100, 120
- b. 60, 120, 120
- c. 60, 100, 80
- d. 40, 80, 100

45. From the given alternatives, select the word which **CANNOT** be formed using the letters of the given word.

Demonstration

- a. Moon
- b. Most
- c. Train
- d. Damage

46. The LCM of the three numbers 45,30 and 35 is:

- a. 630
- b. 420
- c. 180
- d. 840

47. Answer the following questions based on the information given below:

The proportion of male students and the proportion of vegetarian students in a school are given below. The school has a total of 800 students, 80% of whom are in the secondary section and rest equally divided between class 1 and 12.

| | Male (M) | Vegetarian (V) |
|-------------------|------------|----------------|
| Class 12 | 0.60 | 0.54 |
| Class 11 | 0.55 | 0.50 |
| Secondary section | 0.275(288) | 0.55 (352) |
| Total | 0.475 | 0.53 |

What is the percentage of vegetarian students in class 12?

- a. 40
- b. 45
- c. 50
- d. 55

48. Answer the questions based on the following information:

Four sisters- Suvarna, Tara, Uma and Vibha are playing a game such that the loser doubles the money of each of the other players from her share. They played four games and each sister lost one game in alphabetical order. At the end of fourth game, each sister has Rs. 32. Who started with the lowest amount?

- a. Suvarna
- b. Tara
- c. Uma
- d. Vibha

49. Answer the questions based on the following information:

A, B, C and D are to be seated in a row. But C and D cannot be together. Also B cannot be at the third place.

Which of the following must be false?

- a. A is at the first place
 - b. A is at the second place
 - c. A is at the third place
 - d. A is at the fourth place
50. Answer the questions on the basis of the following information:

Four families decided to attend the marriage ceremony of one of their colleagues. One family has no kids, while the others have at least one kid each. Each family with kids has at least one kid attending the marriage. Given below some information about the families, and who reached when to attend the marriage. The family with 2 kids came just before the family with no kids. Shanti who does not have any kids reached just before Sridevi's family. Sunil and his wife reached last with their only kid. Anil is not the husband of Joya. Anil and Raj are fathers. Sridevi's and Anita's daughters go to the same school. Joya came before Shanti and met Anita when she reached the venue. Raman stays the farthest from the venue. Raj said his son could not come because of his exams. **Which woman arrived third?**

- a. Shanti
 - b. Sridevi
 - c. Anita
 - d. Joya
51. Look at this series: 8, 43, 11, 41, __, 39, 17. What number should fill in the blank?
- a. 8
 - b. 14
 - c. 43
 - d. 44

52. Which word does NOT belong with the others?

- a. unimportant
- b. trivial
- c. insignificant
- d. familiar

53. Which word does NOT belong with the others?

- a. mayor
- b. lawyer
- c. governor
- d. senator

54. Find the word that names a necessary part of the word 'Itinerary'.

- a. map
- b. route
- c. travel
- d. guidebook

Directions (55-56) The words in the bottom row are related in the same way as the words in the top row. For each item, find the word that completes the bottom row of words.

55. tadpole frog amphibian

lamb sheep ?

- a. animal
- b. wool
- c. farm
- d. mammal

56. fence wall boundary
path alley ?
- ramp
 - passageway
 - airfield
 - pedestrian

Directions (57-58) Choose the pair that best represents a similar relationship to the one expressed in the original pair of words.

57. METAPHOR : SYMBOL
- analogy : comparison
 - rhythm : melody
 - nuance : song
 - slang : usage
58. INTEREST : OBSESSION
- mood : feeling
 - weeping : sadness
 - dream : fantasy
 - plan : negation

59. Here are some words translated from an artificial language.
- daftafoni means advisement
imodafta means misadvice
imolokti means misconduct
- Which word could mean "statement"?
- Kratafoni
 - Kratadafta
 - Loktifoni
 - daftaimo

60. Find the statement that must be true according to the given information.

Ten new television shows appeared during the month of September. Five of the shows were sitcoms, three were hour-long dramas, and two were news-magazine shows. By January, only seven of these new shows were still on the air. Five of the shows that remained were sitcoms.

- Only one of the news-magazine shows remained on the air.
- Only one of the hour-long dramas remained on the air.
- At least one of the shows that was cancelled was an hour-long drama.
- Television viewers prefer hour-long dramas.

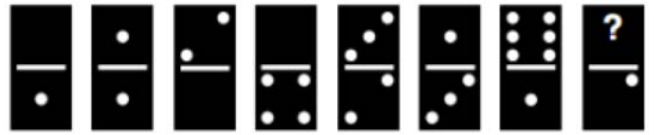
Directions (61-63) Read the below passage carefully and answer the questions:

Five cities all got more rain than usual this year. The five cities are: Last Stand, Mile City, New Town, Olliopolis, and Polberg. The cities are located in five different areas of the country: the mountains, the forest, the coast, the desert, and in a valley. The rainfall amounts were: 12 inches, 27 inches, 32 inches, 44 inches, and 65 inches.

- * The city in the desert got the least rain; the city in the forest got the most rain.
- * New Town is in the mountains.
- * Last Stand got more rain than Olliopolis.
- * Mile City got more rain than Polberg, but less rain than New Town.
- * Olliopolis got 44 inches of rain.
- * The city in the mountains got 32 inches of rain; the city on the coast got 27 inches of rain.

61. Which city got the most rain?
- Last Stand
 - Mile City
 - New Town
 - Olliopolis
62. Which city is in the desert?
- Last Stand
 - Polberg
 - New Town
 - Olliopolis
63. How much rain did Mile City get?
- 12 inches
 - 27 inches
 - 32 inches
 - 44 inches
64. A man walked 30 m towards the North. Then he turned right and walked 45 m. Then he turns right and walks 45 m. Then he turns left and walks 5 m. Finally, he turns left and walks 15 m. In which direction and how many meters is he from the starting position?
- 15 m West
 - 50 m East
 - 50 m West
 - 55 m East
65. Complete the series ZA5, Y4B, XC6, W3D, _____
- E7V
 - V2E
 - VE5
 - VE7

66. Which number replaces the question mark?

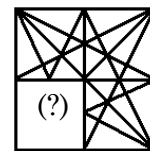


- 3
- 1
- 6
- 5

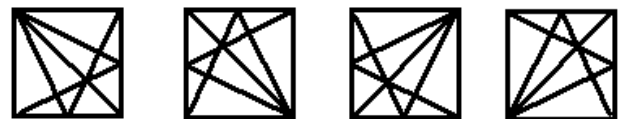
67. Fill the blank in the middle of the series P5QR, P4QS, P3QT, _____, P1QV

- PQW
- PQV2
- P2QU
- PQ3U

68. Identify the figure that completes the pattern.



(X)

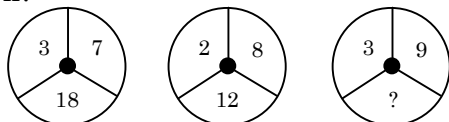


(1) (2) (3) (4)

- 1
- 2
- 3
- 4

Directions (69-71) In an examination, 43% passed in Maths, 48% passed in Physics and 52% passed in Chemistry. Only 8% students passed in all the three. 14% passed Maths and Physics and 21% passed in Maths and Chemistry and 20% passed in Physics and Chemistry. The number of students who took the exam is 200.

69. How many students passed in Maths only?
- 16
 - 32
 - 48
 - 80
70. Find the ratio of the number of students passing in Maths only to the number of students passing in Chemistry only?
- 16 : 37
 - 29 : 32
 - 16 : 19
 - 31 : 49
71. What is the ratio of the number of students passing in Physics only to the number of students passing in either Physics or Chemistry or both?
- 11/40
 - 34/46
 - 49/32
 - 31/49
72. Which number replaces the question mark?



- 33
- 44
- 22
- 55

73. A's son B is married with C whose sister D is married to E the brother of B. How D is related to A?
- Sister
 - Daughter-in-law
 - Sister-in-law
 - Cousin
74. A + B means A is the father of B, A – B means A is the wife of B, A × B means A is the brother of B, A / B means A is the daughter of B. If P / R + S + Q, which of the following is true?
- P is the daughter of Q
 - P is the aunt of Q
 - Q is the aunt of P
 - P is the mother of Q

75. In the question below, some statements followed by some conclusions are given. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts:

Statements:

All birds are tall.

Some tall are hens.

Conclusions:

- Some birds are definitely not hens.
 - Atleast some hens are tall.
- Only I follows
 - Only II follows
 - Either I or II follows
 - Both I and II follow

76. Binary equivalent of 15 is
- 1010
 - 1110
 - 1111
 - 1001
77. 1's complement of 1011
- 0100
 - 0111
 - 1111
 - 0101
78. BCD of 52 is
- 0101 0010
 - 0000 0110
 - 1000 0010
 - 0110 0110
79. In Boolean algebra $A+1=$
- A
 - A'
 - 1
 - 0
80. Half adder adds
- 2 bits
 - 1 bit
 - 3 bits
 - 1/2 bit
81. Odd parity bit for the given binary number 111100 is
- 0
 - 1
 - 2
 - ERROR
82. Flip flops can be generated using
- NOT gate
 - NAND/NOR gate
 - OR gate
 - AND gate
83. A functional unit of the computer that performs Arithmetic operations.
- ALU
 - Adder
 - AND gate
 - OR gate
84. Collection of wires that carry data signals from one unit to other unit of computer system is called as
- Data bus
 - Control bus
 - Address bus
 - Communication wires

85. High level programs translated to low level programs by
- Assembler
 - Compiler
 - Dynamic loader
 - Linker
86. Semiconductor memory whose contents may be set only once
- SRAM
 - DRAM
 - RAM
 - PROM
87. Data stored here can be read quickly by the processor.
- Main memory
 - Cache memory
 - Read only memory
 - Secondary memory
88. Binary addition $0010 + 0010$ equals
- 0111
 - 0101
 - 0100
 - 1000
89. Which one of the following software applications would be the most appropriate for performing numerical and statistical calculations?
- Database
 - Spreadsheets
 - Graphics Package
 - Document Processor
90. Which printer is very commonly used for desk top publishing?
- Laser printer
 - Ink jet printer
 - Daisywheel printer
 - Dot matrix printer
91. Which device is used to reproduce drawings using pens that are attached to movable arms?
- Plotter
 - Light Pen
 - Scanner
 - Printer
92. Which of these are normally used to initialize a computer system's hardware?
- Bootstrap memory
 - Volatile memory
 - External mass memory
 - Static memory

93. A (n) _____ is a personal journal posted on the Web for access by the public.
- Chat
 - Blog
 - Email
 - Instant Message
94. Which of the following is the largest unit of storage?
- GB
 - KB
 - MB
 - TB
95. Which of the following registers can hold both data and addresses?
- General Purpose Register
 - Data Register
 - Address Register
 - Status Register
96. In which form, a digital computer processes information?
- Continuous form
 - Discrete form
 - Semi-Continuous form
 - Semi-discrete form
97. Which shortcut keys must be used to select an entire row?
- ctrl+space
 - ctrl+alt+shift
 - shift+space
 - ctrl+L
98. What does PNG stand for?
- Portable Network Graphics
 - Processed Network Graphics
 - Personal Network Graphics
 - Picture Network Graphic
99. SIM means
- Speed In Mobile
 - Special Identity Module
 - Subscriber Identity Module
 - Subscriber Identify Module
100. The time for the actual data transfer after receiving the request for data from secondary storage is referred to as the disk's
- Transfer time
 - Movement time
 - Access time
 - Data input time

FOR ROUGH WORK

FOR ROUGH WORK