

SECTION 1 - SECTION 1

Question No.1

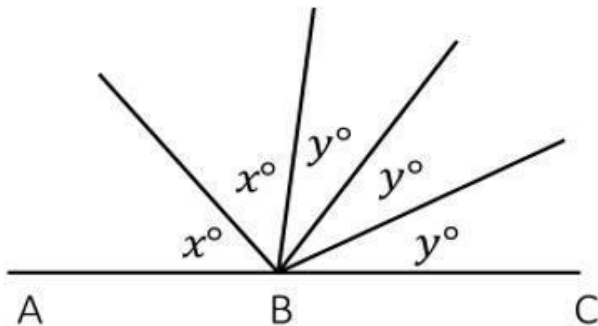
Read the information given in the questions and on the basis of the information, select the question given after the information.

Seven friends Kiran, Mahesh, Rajesh, Abhi, Ganesh, Prasad and Parveen are sitting in a circle. Kiran, Mahesh, Rajesh, Abhi, Prasad and Parveen are sitting at equal distances from each other. Rajesh is sitting after two places right of Prasad, who is sitting one place right of Abhi. Kiran forms an angle of 90 degrees from Ganesh and an angle of 120 degrees from Mahesh. Mahesh is just opposite Parveen and is sitting on the left of Ganesh. Which of the following statements is not correct ?

- Ganesh is sitting opposite Prasad
- All of these
- Mahesh is two places away from Parveen
- Prasad is between Mahesh and Kiran

Question No.2

If ABC is a straight line as shown in the figure below, and the angles x & y are integer multiples of 20, what is the value of x ?



- 80°
- 60°
- 40°
- 20°

Question No.3

Which of the following is a list of architectures for web application frameworks?

- Server side frameworks
- Model-view controller
- Client side frameworks
- Model-view controller and three-tier organization

Question No.4

Which of the following is used to add styling to the web pages?

- Apache

- CSS
- Servlets
- Applets

Question No.5

Siva Reddy walked 2 km west of his house and then turned south covering 4 km. Finally, He moved 3 km towards east and then again 1 km west. How far is he from his initial position?

- 4
- 9
- 2
- 10

Question No.6

What is the maximum number of arguments that can be passed in a single function in C?

- 253
- 361
- 8
- 127

Question No.7

In a certain batch of guests in a museum, there are 50 guests; each guest buys either a Rs. 40/- ticket or a Rs. 60/- ticket, with at least one guest of each ticket type. The average (arithmetic mean) value of ticket-receipts from the batch is more than Rs.50/-. If the average value of ticket-receipts is to be reduced to less than Rs.50/- by including few new guests with Rs. 40/- tickets, what could definitely NOT be the number of new guests with Rs. 40/- tickets that could be included?

- 2
- 4
- 3
- 5

Question No.8

Kerberos is an encryption-based system that uses

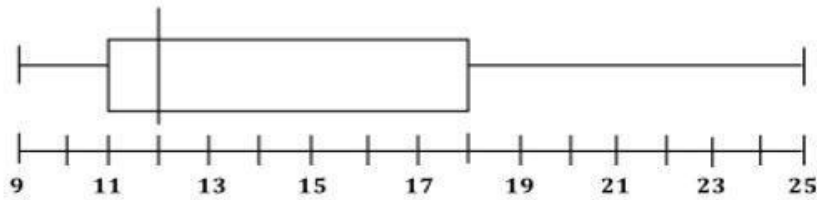
- Public key encryption
- Data key encryption
- Secret key encryption
- Private key encryption

Question No.9

Which of the following is a complete function?

- `Void funct(int) {printf("Hello");}`
- `Int funct();`
- `Void funct(x) {printf("Hello");}`
- `Int funct(int x) {return x=x+1;}`

Question No.10



The box-and-whisker plot above shows weights for 60 kids in a playgroup. How many kids weight between 18 kilograms and 23 kilograms, inclusive, if the 23 kilograms represents the 90th percentile value on the plot above?

- 3
- 9
- 6
- 12

Question No.11

If $P(2n+1, n-1) : P(2n-1, n) = 3:5$, find n .

- 2
- 8
- 4
- 6

Question No.12

Which of the following problems cannot be solved by divide and conquer method?

- Multiplication of large numbers
- n queens problem
- Merge sort
- Binary search

Question No.13

Which of the following data structures would be more suited for traversing a graph by breadth first search?

- Queue
- Set
- List
- Stack

Question No.14

Find the output of the following program.

```
void main()
{
    int array[10];
    int *i=&array[2], *j=&array[5];
    int diff=j-i;
    printf("%d", diff);
}
```

- 4
- Error
- 3
- Garbage value

Question No.15

The cloud infrastructure operated solely for a single organization is called

- O-Cloud
- Private Cloud
- Public Cloud
- I-Cloud

Question No.16

There are n stations in a slotted LAN. Each station attempts to transmit with a probability p in each time slot. What is the probability that ONLY one station transmits in a given time slot?

- $np(1-p)^{n-1}$
- $(1-p)^{n-1}$
- $1-(1-p)^{n-1}$
- $p(1-p)^{n-1}$

Question No.17

Consider a schema $R = (A, B, C, G, H, I)$ and the set F of functional dependencies $\{A \rightarrow B, A \rightarrow C, CG \rightarrow H, CG \rightarrow I, B \rightarrow H\}$. Members of F + does not include

- $AG \rightarrow I$
- $A \rightarrow H$
- $HI \rightarrow AB$
- $CG \rightarrow HI$

Question No.18

A declaration "short int" is used for variables

- all of these
- which may require less storage than normal integers
- which have short names
- which have a short duration in a program

Question No.19

Automatic variables in C are allocated memory in

- Code segment
- Heap
- Stack
- Data segment

Question No.20

In a school 5 colours are allotted to each house. If the flag of Tagore House has to be a sequence of three blocks of different colours, then how many flags can they choose from?

- 20
- 27
- 60
- 9

Question No.21

A program P reads and processes 1000 consecutive records from a sequential file F stored on device D without using any file system facilities.

Given the following:

- (i) Size of each record = 3200 bytes.
- (ii) Access time of D = 10 m secs.
- (iii) Data transfer rate of D = 800×10^3 bytes/sec
- (iv) CPU time to process each record = 3 m secs.

What is the elapsed time of P if records of F are organized using-a blocking factor of 2 (i.e. each block on D contains two records of F) and P uses one buffer?

- 17 sec
- 12 sec
- 14 sec
- 18 sec

Question No.22

If 25 students in one class has an average of 93% and 20 students from another class has an average of 98%. What is the average of total 45 students approximately

- 93
- 94.2
- 92
- 95.2

Question No.23

Which of the following regular expression describes "all strings containing an even no of a's?"

- $(b^* a b^* a b^*)^*$

- $(b^* a b^* a b^*)^+$
- $(a b^* a b^*)^*$
- $(b^* a a b^*)^+$

Question No.24

Which error detection method consists of just one redundant bit per data unit?

- Checksum
- Two-dimensional parity check
- Simple parity check
- CRC

Question No.25

Statements: $F \$ P$, $P @ R$, $R © S$, $S \% T$

Conclusions:

I. $R \% F$

II. $S \cdot P$

III. $P © T$

IV. $S \% F$

- Only I, Hand III are true
- Only I and II are true
- Only I, II and IV are true
- Only III and IV are true

Question No.26

If + means divide, x means minus, + means multiply and - means plus, then find the value of $9 + 3 + 4 - 8 \times 2$?

- 15
- 17
- 19
- 18

Question No.27

How long does a train 110 meters long running at the speed of 72 km/hour take to cross a bridge 132 meters in length?

- 10 seconds
- 15.5 seconds
- 12.1 seconds
- 8.1 seconds

Question No.28

Which of the following is not associated with Machine learning?

- Test Set
- Training Set
- Univesal Set
- Confusion Matrix

Question No.29

Global locks

- prevent access to global resources
- synchronize access to local resources
- are used to avoid local locks
- synchronize access to global resources

Question No.30

What will be output if you will compile and execute the following c code?

```
main()
{
int i=3;
switch(i)
{
default:printf("zero");
case 1: printf("one");
break;
case 2: printf("two");
break;
case 3: printf("three");
break;
}
}
```

- zero one two three
- three
- Compiler error
- zero three

Question No.31

The function tolower(c) defined in library works for which of the following.

- Any character set
- Ascii and utf-8 but not EBSIDIC character set
- Ascii character set
- Unicode character set

Question No.32

Which of the following is a classification algorithm?

- A*
- Binary Search
- J48
- J40

Question No.33

LOGIC : BHFNK :: CLERK : _____

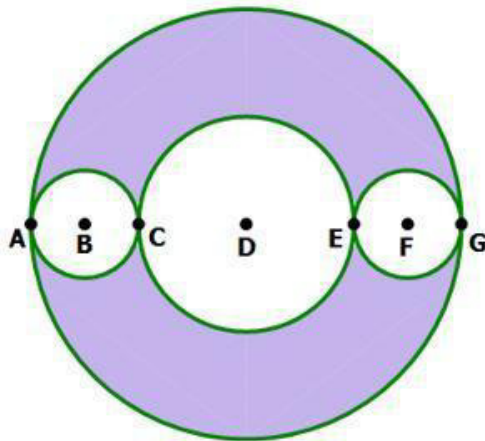
- XVRPA
- QBKJA
- LPRTU
- JQDKB

Question No.34

If the average (arithmetic mean) of five distinct positive integers is 10, what is the difference between the largest possible value of the greatest integer and the least possible value of the greatest of the five integers?

- 5
- 12
- 28
- 40

Question No.35



In the diagram, point D is the center of the medium-sized circle that passes through C and E, and it is also the center of the largest circle that passes through A and G. Each of the diameters of the small circles with centers B and F equals the radius of the medium-sized circle with center D. The shaded area is what fraction of the largest circle?

- 8/5
- 13/22
- 5/8
- 22/13

Question No.36

Which of the following mechanism is used to achieve concurrency control?

- Triggers
- Control access
- Locks
- Clusters

Question No.37

What is the maximum size of data, the application layer can pass on to the TCP layer below.

- 1500 bytes
- 2^{16} bytes
- Any size
- 2^{32} bytes

Question No.38

An equivalent Boolean expression for $x + x'y$ is

- $x+y$
- xy
- $x'y'$
- $x+y'$

Question No.39

0.25% of 25 is

- 6.25×10^{-2}
- 6.25×10^{-5}
- 6.25×10^{-3}
- 6.25×10^{-4}

Question No.40

Support Vector Machine is

- a network design
- a protocol
- a hardware
- a supervised ML algorithm

Question No.41

If $x^2y^3 < 0$, which of the following must be true?

- $x^2y < 0$
- $xy < 0$
- $xy^2 > 0$
- $x > 0$

Question No.42

A thief is noticed by a policeman from a distance of 200 m. The thief starts running and the policeman chases him. The thief and the policeman run at the rate of 10 km and 11 km per hour respectively. What is the distance between them after 6 minutes?

- 110 m
- 50 m
- 120 m
- 100 m

Question No.43

The _____ memory allocation function modifies the previous allocated space.

- realloc
- calloc
- malloc
- free

Question No.44

Cooja is a

- Network Simulator
- Error corrector
- Programming language
- Code Beautifier

Question No.45

Two numbers are less than third number by 30% and 37% respectively. By how much percent is the second number less than the first?

- 8%
- 9%
- 11%
- 10%

Question No.46

_____ cannot be ensured by digital signature

- Confidentiality
- Non repudiation
- Authentication
- Integrity

Question No.47

Most appropriate sentence to describe unions is

- Union contain members of different data types which share the same storage area in memory
- Union are like structures
- Union are less frequently used in program
- Union are used for set operations

Question No.48

Read the information given in the questions and on the basis of the information, select the questions given after the information.

Seven friends Kiran, Mahesh, Rajesh, Abhi, Ganesh, Prasad and Parveen are sitting in a circle. Kiran, Mahesh, Rajesh, Abhi, Prasad and Parveen are sitting at equal distances from each other. Rajesh is sitting after two places right of Prasad, who is sitting one place right of Abhi. Kiran forms an angle of 90 degrees from Ganesh and an angle of 120 degrees from Mahesh. Mahesh is just opposite Parveen and is sitting on the left of Ganesh. The angle between Ganesh and Mahesh in the clockwise direction is ?

- 30°
- 90°
- 210°
-

Question No.49

What is the output of the following C program

```
#include <stdio.h>
int main( ) {
    extern int test (float);
    int a;
    a = test (3.14);
    printf("%d", a);
    return 0;
}
int test (aa) {
    return ((int)aa);
}
```

- compilation error
- 3.14
- 0
- 3.0

Question No.50

For a sorting task inputs are given in ascending order. Which of the following are true?

- I. Quicksort runs in $\theta(n^2)$ time
 - II. Bubble sort runs in $\theta(n^2)$ time
 - III. Merge sort runs in $\theta(n)$ time
 - IV. Insertion sort runs in $\theta(n)$ time
- I and III only
 - I and II only
 - I and IV only
 - II and IV only

Question No.51

The branch of machine learning in which the features are automatically extracted for learning is called

- Deep learning
- Code Learning
- Feature Learning
- Feature Ensembler

Question No.52

$f(n) = 3n^2 + 46n \log n + \log n$ can be written in O notation as

- $O(n \log n)$
- $O(\log n)$
- $O(n)$
- $O(n^2)$

Question No.53

A popular website requires users to create a password consisting of digits only. If no digit may be repeated and each password must be at least 9 digits long, how many passwords are possible?

- $2 \times 10!$
- $9! \times 10!$
- $9! + 10!$
- $2 + 10!$

Question No.54

Ashu and Manoj start running simultaneously from the ends A and B respectively, of a straight track of length 800 m, with speeds that are in the ratio 5 : 3. Whenever Ashu reaches either of the ends, he turns around and continues running at the same speed. Whenever Manoj meets Ashu, he turns around and continues running at the same speed. When Ashu comes back at A for the first time, how far (in meters)

- 360
- 435
- 510
- 475

Question No.55

What is the output of the following code?

```
int a[3] = {5,10,15}, *b, *c;  
b = &a;  
c = b+2;  
printf("%d", c-b);
```

- 10
- 2
- 0
- 1

Question No.56

If $-1 < h < 0$, which of the following has the greatest value?

- $1-(1/h)$
- $1-h^2$
- $1-h$
- $1+h$

Question No.57

Which of the following is not a HTML tag

- `< a >`
- `< meta >`
- `< AJAX >`
- `< table >`

Question No.58

How many different binary trees can be formed with 4 nodes?

- 13
- 14
- 12
- 15

Question No.59

MySQL is a

- Programming language
- Database Management System
- Code Editor
- Compiler

Question No.60

If $84 \times 13 = 8$, $37 \times 13 = 6$, $26 \times 11 = 6$, then $56 \times 22 = ?$

- 36
- 39
- 11
- 7

Question No.61

```
void main()
```

```
{
```

```
    int i=320;
```

```
    char *ptr=(char *)&i;
```

```
    printf("%d",*ptr);
```

```
}
```

- 320
- 1
- 64
- Compiler error

Question No.62

A straight road runs from north to south. It has two turnings towards east and three turnings towards west. In how many ways can a person coming from east get on the road and go west?

- 5
- 6
- 3
- 2

Question No.63

What will be the output of the following code?

```
int array[2][2][3] = {0,1,2,3,4,5,6,7,8,9,10,11};  
printf("%d", array[1][1][1]);
```

- 9
- 10
- 0
- 6

Question No.64

```
#include<stdio.h>
```

```
#define prod(a,b) a*b
```

```
void main()
```

```
{
```

```
int x=3,y=4
```

```
printf(“%d”,prod(x+2,y-1));
```

```
}
```

- 12
- 15
- 10
- 11

Question No.65

The following loop

```
for ( putchar ( 'c' ); putchar ( 'a' ); putchar ( ' r' ))  
putchar ( 't' );
```

- a syntax error
- catratratrat
- catrat
- cartrt

Question No.66

A compiler for a high level language that runs on one machine and produces code for a different machine is

called _____

- Cross Compiler
- Compiler-Compiler
- bootstrap complier
- Interpreter

Question No.67

If $x > 0$, which of the following expressions are equal 3.6% of $(5x / 12)$?

- x percent of $3/2$
- 0.05 percent of $3x$
- $3x$ percent of 2
- $3x$ percent of 0.2

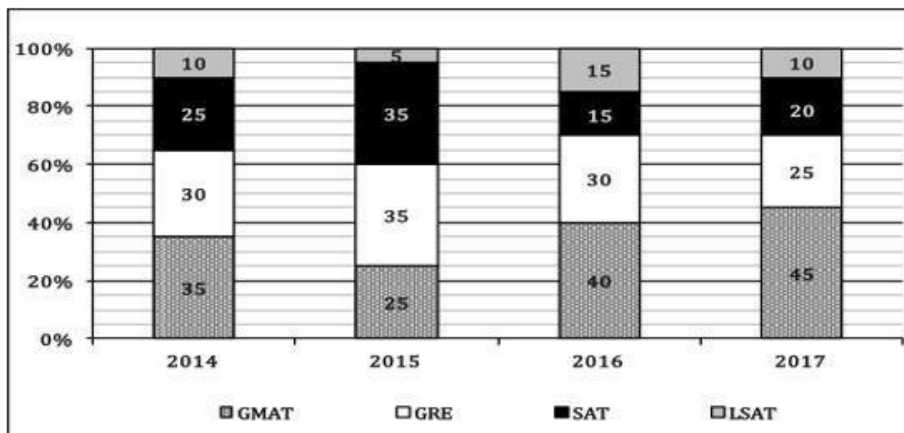
Question No.68

If x is a non-negative integer such that $7^{\sqrt{x}} + 24^{\sqrt{x}} = 25^{\sqrt{x}}$, what is the value of x ?

- 2
- 4
- 3
- 1

Question No.69

The following chart shows the percent distribution of the number of candidates enrolled in a certain test-prep company from 2014 to 2017 for four.



If the total number of candidates increased by 40% from the year 2014 to the year 2017, what is the simple annual percent increase (if necessary whole number rounded) in the number of candidates for the GMAT course between 2014 and 2017?

- 29
- 27
- 28
- 30

Question No.70

The disk controller can be told to replace each bad sector logically with one of the spare sectors in the disk. This scheme is known as_____

- Sector sparing
- Sector replace
- Sector slipping
- Back word replacing

Question No.71

How many such paier of letters are there in the word "CHRONICLE" each of which has as many letters between them in the word as in the English Alphabet

- Five
- Two
- Three
- Four

Question No.72

If $(a-3)^2 + (b-3) = 0$, what is the value of $a-b$?

- 0
- 3
- 2
- 1

Question No.73

In a test, five students of a class scored 39, 37, 40, 34, and 36, respectively. If the sixth student scored nn marks, for which of the following values of nn does the average (arithmetic mean) score per student for the six students equal the median score?

- 42
- 37
- 39
- 38

Question No.74

What is right way to initialize array?

- `int n[] = { 2, 4, 12, 5, 45, 5 } ;`
- `int n(6) = { 2, 4, 12, 5, 45, 5 } ;`
- `int num[6] = { 2, 4, 12, 5, 45, 5 } ;`
- `int n{6} = { 2, 4, 12 } ;`

Question No.75

Identify error in following code fragment

```
int min() {  
    int i, n;  
    for (i=0; i<n; i++);  
}
```

- only lexical error
- only syntactic error
- semantic error
- both lexical and syntactic error

Question No.76

How many solutions does the equation $x_1 + x_2 + x_3 = 11$ have, where x_1, x_2 and x_3 are non-negative integers?

- 88
- 68
- 78
- 58

Question No.77

The conversion from URL to IP address is done by

- DNS
- HTTP
- Firewall
- Cookies

Question No.78

Pick the machine dependent phase of the compiler?

- Lexical analysis
- Syntax analysis
- Code optimization
- Intermediate code generation

Question No.79

The regular expression $(a+b)^*$ is equivalent to _____

- $a^* + b^*$
- $(a b)^*$
- a^*
- $a^* b^*$

Question No.80

Which of the following is not related to web page designing

- Color Selection
- Compilation
- Meta tagging
- Layout

Question No.81

The function/macro putchar(c) always outputs character c to the

- Depends on the compiler
- Depends on the standard
- Standard output
- Screen

Question No.82

Read the information given in the questions and on the basis of the information, select the question given after the information:

Seven friends Kiran, Mahesh, Rajesh, Abhi, Ganesh, Prasad and Parveen are sitting in a circle. Kiran, Mahesh, Rajesh, Abhi, Prasad and Parveen are sitting at equal distances from each other. Rajesh is sitting after two places right of Prasad, who is sitting one place right of Abhi. Kiran forms an angle of 90 degrees from Ganesh and an angle of 120 degrees from Mahesh. Mahesh is just opposite Parveen and is sitting on the left of Ganesh. Who is sitting ____ of Praveen

- two places right
- to the left
- three places left
- to the right

Question No.83

Year	Population	Number of TVs
1935	680	16
1940	750	20
1945	840	30
1950	960	50
1955	1200	80
1960	1500	150

If the above chart shows the population of a town and the number of televisions in the town through the middle of part of the 20th century. The ratio of people to televisions in town decreased by approximately what percent from 1955 to 1960?

Give your answer to the nearest integer percent and do not enter the percent sign.

- 30
- 35
- 33
- 25

Question No.84

Consider the program below and choose the output

```
#include <stdio.h>
int fun(int n, int *f_p)
{
    int t= 5, f;
    if(n <=1)
    {
        *f_p = 1;
        return 1;
    }
    f= t+*f_p;
    *f_p = t;
    return f;
}
int main( ) {
    int x = 15;
    printf("%d\n", fun(5, &x));
    getchar();
    return 0;
}
```

- 20
- 15
- 30
- 10

Question No.85

Bluetooth Low energy is also known as

- Bluetooth 3.5
- Bluetooth 2.5
- Bluetooth 4.0
- Bluetooth 2.7

Question No.86

Minimum number of interchange needed to convert the array 89,19,40,14,17,12,10,2,5,7,11,6,9,70, into a heap with the maximum element at the root is

- 0
- 3
- 2
- 1

Question No.87

$(P \vee Q) \wedge (P \rightarrow R) \wedge (Q \rightarrow S)$ is equivalent to

- $R \rightarrow Q$

- $S \rightarrow R$
- $S \wedge R$
- $S \vee R$

Question No.88



What is the output of the code snippet given below?

```
#include<stdio.h>

main()
{
    int a = 5, b = 3, c = 4;
    printf("a = %d, b = %d\n", a, b, c);
}
```

- compile error
- a=5, b=3
- a=5,b=3,0
- a=5,b=3,c=0

Question No.89



LPWA refers to

- Link Performing Web Analytics
- Low Power Wide Area
- Low Power Web Application
- Logical Power Web Application

Question No.90



If two sets, Set A: $\{-10, -3, y^2, 9, 10, 11\}$ and Set B: $\{0, 2, -2y, 12, 13, 15\}$ have their elements arranged in ascending order, and have equal median values, what is the value of y ?

- 2
- 3
- 1
- 1

Question No.91

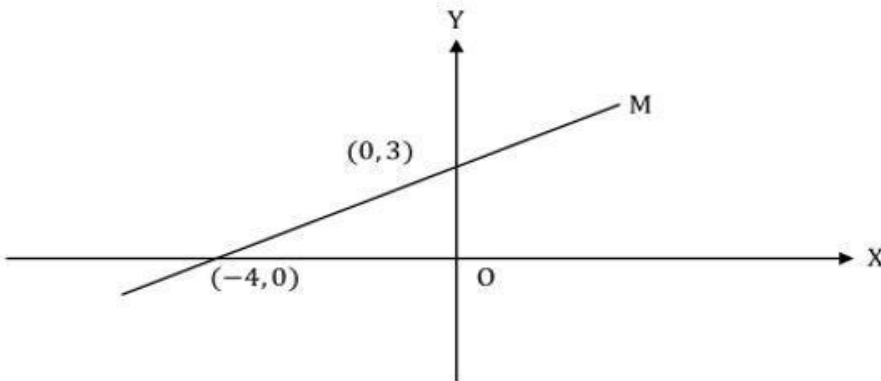


B' is sister of 'R', 'M' is brother of 'R', 'D' is mother of 'R', 'H' is husband of 'D'. How many children does 'H' have?

- No children
- One
- Two
- Three

Question No.92

The graph of which of the following equations is a straight line that is parallel to line M in the figure below and intersects the negative direction of Y-axis?



- $4y - 3x = 0$
- $4y + 3x = -1$
- $4y + 3x = 0$
- $4y - 3x = -1$

Question No.93

Pointing to a photograph, a woman says, "This man's son's sister is my mother-in-law." How is the woman's husband related to the man in the photograph?

- Son
- Nephew
- Son-in-law
- Grandson

Question No.94

A quadratic polynomial with real number coefficients has,

- At most two real roots
- Exactly two real roots
- More than two real roots
- Exactly two roots that are natural numbers

Question No.95

Choose the correct statement that is a combination of these two statements,

Statement 1: `char *p;`

Statement 2: `p = (char*) malloc(100);`

- char p = *malloc(100);
- char *p = (char*)malloc(100);
- char *p = (char) malloc(100);
- None of these

Question No.96

Let (16, 9, 11) are the lengths of programs (1, 2, 3). What is the ordering of the programs when placed in a tape with the Mean Retrieval time minimized?

- (3, 1, 2)
- (2, 3, 1)
- (1, 3, 2)
- (2, 1, 3)

Question No.97

What will be printed after compiling and running the following code?

```
main()
{
char *p;
printf(“%d %d”, sizeof(*p), sizeof(p));
}
```

- 1 2
- 2 2
- 2 1
- 1 1

Question No.98

Expression ((fpt=fopen("Samples","w"))==NULL) would be true if

- The file sample could not be created for writing
- The file sample is read only
- The file sample does not exist while fopen is being executed
- fpt is declared as a FILE pointer

Question No.99

Type checking is normally done during?

- Lexical analysis
- Syntax directed translation
- Syntax analysis
- Code generation

Question No.100

If the positions of the third and tenth letters of the word 'DOCUMENTATION' are interchanged, and likewise the position of the fourth and seventh letters, the second and sixth letters, is also interchanged, which of the following will be eleventh letter from the right end

- U
- I
- T
- C