Presidio Model Questions

Aptitude MCQ

1. What is the HCF of 18 and 24?
   (a) 6 (b) 12
   (c) 18 (d) 24

2. How many combinations are possible while selecting four letters from the word 'SMOKEJACK' with the condition that 'J' must appear in it?
   (a) 81 (b) 8!/2!
   (c) 3!/2! (d) 41

3. A box contains 4 black, 3 red and 6 green marbles. 2 marbles are drawn from the box at random. What is the probability that both the marbles are of the same color?
   (a) 12/74 (b) 24/78
   (c) 13/78 (d) None of these

4. Find the remainder when 2^{89}nis divided by 89?
   (a) 1 (b) 2
   (c) 87 (d) 88

5. What is the remainder when 3^7 is divided by 8?
   (a) 1 (b) 2
   (c) 3 (d) 5

6. Find the sum to 200 terms of the series 1 + 4 + 6 + 5 + 11 + 6 + ...
   (a) 30,200 (b) 29,800
   (c) 30,400 (d) None of these

7. A basket contains 3 blue, 5 black and 3 red balls. If 2 balls are drawn at random, what is the probability that one is black and one is red?
   (a) 2/11 (b) 8/11 (c) 9/11 (d) 3/11

8. The value $(78.95)^2 - (43.35)^2$ = ?
   (a) 4148 (b) 4235.78
   (c) 4305 (d) 4353.88

9. If the number 653 *xy* is divisible by 90, then $(x + y)$ = ?
   (a) 2 (b) 3 (c) 4 (d) 6

10. Which of the following is the correct simplified form of the equation $(4 \log_{10}10000) / (2 \log_{10}100)$?
    (a) 2 (b) 16
    (c) 8 (d) 4

11. What would be the value of $\log_5 12$, if $\log_{10}2 = x$ and $\log_{10}3 = y$?
    (a) (2x + y) / (1 – x) (b) (2y + x) / (1 – y)
    (c) xy / (y + 1) (d) x^2y^2 / (x + 1)

12. What could be the value of z, if $\log_5 (z^2 + z) - \log_5 (z + 1) = 2$?
    (a) 30 (b) 20 (c) 25 (d) 4

13. What is the HCF of 36, 48, and 60?
    (a) 12 (b) 18
    (c) 24 (d) 30

14. A box contains 2 white, 3 black and 5 red balls. In how many ways can three balls be drawn from the box if at least one black ball is to be included in the draw?
    (a) 29 (b) 36
    (c) 48 (d) 85
    (e) None of these

15. Find the LCM of 8 and 12.
    (a) 8 (b) 12
    (c) 24 (d) 48

16. In Daya's bag there are 3 books of History, 4 books of Science and 2 books of Maths. In how many ways can Daya arrange the books so that all the books of same subject are together?
    (a) 9 (b) 6
    (c) 8640 (d) 1728

Technical MCQ

1. Identify the output of the following program.

```
Public class Test{
    Public static void main(String argos[]){
 String str1 = "one";
 String str2 = "two";
 System.out.println(str1.concat(str2));
    }
}
```

(a) one (b) two
(c) onetwo (d) twoone

2. What does the following string do to given string str1?

String str1 = "Interviewbit".replace('e','s');
(a) Replaces single occurrence of 'e' to 's'.
(b) Replaces all occurrences of 'e' to 's'.
(c) Replaces single occurrence of 's' to 'e'.
(d) None of these.

3. To which of the following does the class string belong to?

(a) java.lang (b) java.awt
(c) java.applet (d) java.string

4. What does the following string do to given string str1 ?

```
String a = new String("Interviewbit");
String b = new String("Interviewbit");
Strinc c = "Interviewbit";
String d = "Interviewbit";
```

(a) 2 (b) 3
(c) 4 (d) None of these

5. Total constructor string class have?

(a) 3 (b) 7 (c) 13 (d) 20

6. Find the output of the following code.

```
int ++a = 100;
System.out.println(++a);
```

(a) 101
(b) Compile error as ++a is not valid identifier
(c) 100
(d) None of these

7. Find the output of the following code.

```
if(1 + 1 + 1 + 1 + 1 == 5){
  System.out.print("TRUE");
}
else{
  System.out.print("FALSE");
}
```

8. What will be the output of the following code snippet?

```
#include <stdio.h>
int main() {
int a = 3, b = 5;
int t = a;
a = b;
b = t;
printf("%d %d", a, b);
return 0;
}
```

(a) 3 5 (b) 3 3
(c) 5 5 (d) 5 3

9. What is required in each C program?

(a) The program must have at least one function.
(b) The program does not require any function.
(c) Input data
(d) Outputdata

10.
```
#include <stdio.h>
    int main()
    {
    int i = 3;
    printf("%d", (++i)++);
    return 0;
    }
```

What is the output of the above program?

(a) 3 (b) 4
(c) 5 (d) Compile- time error

11. All keywords in C are in _____

(a) Lower Case letters (b) Upper Case letters
(c) CamelCase letters (d) None of the mentioned

12. How is an array initialized in C language?

(a) int a[3] = {1, 2, 3}; (b) int a = {1, 2, 3};
(c) int a[] = new int[3] (d) int a(3) = [1, 2, 3];

13. What will this program print?

```
main()
{
 int i = 2;
 {
  int i = 4, j = 5;
   printf("%d %d", i, j);
 }
```

```
 printf("%d %d", i, j);
}
```

(a) 4525 (b) 2525

(c) 4545 (d) None of the these

14.
```
#include <stdio.h>
#if X == 3
        #define Y 3
#else
        #define Y 5
#endif
int main()
{
        printf("%d", Y);
        return 0;
}
```

(a) 3

(b) 5

(c) 3 or 5 depending on value of x

(d) Compile time error

15. What is the output of the following code snippet?

```
#include <stdio.h>
int main() {
int a[] = {1, 2, 3, 4};
int sum = 0;
for(int i = 0; i < 4; i++) {
sum += a[i];
}
printf("%d", sum);
return 0;
}
```

(a) 1 (b) 4

(c) 20 (d) 10

16. Which of the following is true for variable names in C?

(a) They can contain alphanumeric characters as well as special characters

(b) It is not an error to declare a variable to be one of the keywords(like goto, static)

(c) Variable names cannot start with a digit

(d) Variable can be of any length

Technical Coding Questions

1. The different utility is a data comparison tool that calculates and displays the difference between two text. It tries to determine the smallest set of deletions and insertions to create one texts from the other. Diff is line oriented rather than character oriented, unlike edit distance.

Input: String X = "XMJYAUZ" String Y= "XMJAATZ"

Output: X M J –Y A –U +A +T Z (– indicates that character is deleted from Y but it was present in X) (+indicates that character is inserted in Y but it was not present in X).

2. On a field represented as a matrix of N rows and M columns there is a donkey and two haystacks. The donkey is really hungry and he wants to get to a haystack as fast as possible. He can walk in four directions: up, down, left or right. The paradox of the donkey is that if the two haystacks are equally close to him, he won't be able to decide which one to choose and he will starve to death. You are given the cells of the haystacks, but you don't know where the donkey is. Compute the number of cells where the donkey will starve if he's there.

Input: The first line contains the two integers N and M. The second line contains two integers representing the row and the column of the first haystack. The third line contains two integers representing the row and the column of the second haystack.

Output: List of cells equally close to the two haystacks. In last line a single number representing the number of cells where the donkey will starve if he's there.

Constraints:

2≤N, M≤200 else print "M or N not in range" The haystacks and the donkey are situated in three different cells. The donkey takes into consideration only shortest routes to the haystacks.

3. You have 100 cards, numbered 1 to 100. You distribute them into k piles and collect back the piles in order. For example, if you distribute them into 4 piles, then the first pile will contain the cards numbered 1, 5, 9, … and the 4th pile will contain the cards numbered 4, 8, 12, …. While collecting back the cards you collect first the last pile, flip it bottom to top, then take the third pile, flip it bottom to top and put the cards on top of the 4th pile and so on. Next round, you distribute the cards into another set of piles and collect in the same manner (last pile first and first pile last).

If we have 10 cards, and put them into 2 piles, the order of the cards in the piles (top to b bottom) would be 9, 7, 5, 3, 1 and 10, 8, 6, 4, 2.

We flip the piles to get the order 1, 3, 5, 7, 9 and 2, 4, 6, 8, 10

We put the second pile at the bottom and first on top of it to get the deck 1, 3, 5, 7, 9, 2, 4, 6, 8, 10

Given the number of rounds (m), the number of piles in each round (ki), you need to write a program to find the Nth card from the top at the end of the final round.

Input:

The input consists of a single line of (m+2) comma-separated integers.

The first number is m, the number of rounds. The next m numbers are ki which represent the number of piles in each round.

The last number in the input is N, the position in the final pile whose value is to be determined.

Output:

One integer representing the Nth card after all rounds have been played.

Constraints:

Number of rounds <= 10, number of piles in each round <= 13.