

**Deadline to send: 24 hours from receiving the Email Questions.**

**Compulsory: For Question No: 10, please answer on your own. Don't Copy from Internet.**

We encourage you to attempt ALL questions using your OWN knowledge and words as much as possible. To answer these questions you are partially allowed to use the internet but as sparingly as possible, only where you really cannot answer the question yourself. However, please refrain from verbatim copy paste from the internet.

**If we find out, that any one has just done Copy & Paste from Internet, we not only reject them but cannot consider them to re-apply for a job with us.**

**Candidate's full name:** Nagiripati Thulasi

**Date:** 12/11/2022

1. The following code contains an error. Change the code to fix the error.

```
#include <stdio.h>
void main()
{
    int arr[5] = {10, 20, 30, 40, 50};
    int *ptr1 = arr;
    int *ptr2 = &ptr1;
    printf("%d", **ptr2);
}
```

- After fixing the error what will be the output?
- If you change %d to %x in the printf statement, what will be the output?

**Ans:** #include<stdio.h>  
void main()

```

{
int arr[5] = {10,20,30,40,50};
int *ptr1 = arr ;
int * ptr2 = arr+5;
printf("ptr2-ptr1=%d\n", ptr2 - ptr1);
printf("(char*)ptr2-(char*)ptr1=%d", (char*)ptr2-(char*)ptr1);
getchar(0);
return 0;
}

```

2. Write a function in C to reverse a given string using recursion?

**Ans:** #include<stdio.h>

```

void print_reverse(char*s);
int main()
{
char s [] = "c program example";
print_reverse(s);
printf("\n");
return 0;
}
void print_reverse(char*s)
{
if(*s !='\0')
{
print_reverse(s+1);
printf("%c",*s);
}
}
}

```

3. What will happen if you do XOR EAX, EAX? Compare CMP & TEST instructions and tell which one is efficient and explain why?

**Ans:**

4. What are the CALL & RET instructions and explain how they work?

**Ans:** The **CALL** instruction interrupts the flow of an exec by passing control to an internal or external subroutine. An internal subroutine is part of the calling exec. An external subroutine is another exec. The **RETURN** instruction returns control from a subroutine back to the calling exec and optionally returns a value.

5. A container is running at the speed of 110 kilometers per hour. If the length of the container is 50 meters, how long would it take to cross a bridge of 500 meters long?

**Ans:** According to the problem

Total distance = (500+50) metre

speed = 110km per hour

Time = distance/speed

$$T = 550/110$$

$$T = 5\text{hrs}$$

6. The ratio of blue gems in gems packet is 3:7. What fraction of the gems in the packet is blue?

**Ans:**

The ratio of blue gems in gems packet = 3:7

let x be the number of gems

the number of blue gems = 3x

the number of gems except blue = 7x

total no. of gems = 7x+3x = 10x

Fraction = No. of blue gems / Total No. of gems

$$F = 3x/10x$$

$$F = 3/10$$

The required fraction is 3/10

7. The minimum age required to become the prime minister of India is?

**Ans:** 25 years

8. What are the two states of India most richly endowed with iron ore?

**Ans:** Madhya pradesh and Odisha

9. Which is the MOST secure and LEAST secure of the following operating systems (OS):

- Windows
- Linux
- Android
- MAC

Support your answers with explanation / reason.

**Ans:** **Linux is the most secure** because it's highly configurable sure it is ,but it also practically useless . security and usuability go hand-in-hand ,and users will often make less secure decissions if they have to fight against the OS just to get their work done.

**Android beats IOS and windows as least secure** over two-thirds of all infected devices this year ran on the Android operating systems .

10. Ashwini has reached the summit of Mount Everest, and is exhilarated albeit exhausted and famished. Describe Ashwini's experiences and emotions atop the mountain (in around 150 words).

**Ans:** \* It will be different from everyone

\* surprise at seeing the summit just a few paces away ,she'd not expected to make it .

\* she feel a huge relief at not having failed .

\* she is utterly ,utterly exhausted ,after a 12 hrs climb through the night.

\* she take in that it's a calm morning,with a clear blue sky and a bright sun . The vista stretches over mountain ranges in all directions .

\* Aswini take few photos in all directions . Awini's hope at least 1 of the photos in the focus .

\* she has an overriding fear that i don't have enough energy to complete the return journey .