**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:** Gracy S **Date:** 14-09-2022

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 = ptr1;

printf("%d", \*ptr2);

}

Output will be 10 and the output if we replace %d with %x will be a.

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

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

void reverse(char\*str)

{

if(\*str)

{

Reverse(str+1);

Printf(“%c”,\*str);

}

}

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

**Ans:** XOR EAX, EAX will makes the value to zero in a faster manner. CMP gives 2 bytes where the TEST gives no bytes.

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

**Ans:** CALL function is used to interrupt the execution process and RET function is used to return the original values from subroutine.

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:** Total distance =500+50 = 550 meter

Speed = 110km/hr

We need to convert km/hr into m/sec so the formula is speed\*(5/18)

= 110\*(5/18)

= 30.55

Now we can gain the time required to cross bridge is = Total distance/speed in the format of m/sec

= 550/30.55

= 18 seconds.

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

**Ans:** The given ratio of blue gems in the gems packet is 3:7.

Let x be the number of blue gems and y be the different colored gems in the packet.

Adding all the colored gems = 3x+7x = 10x

So, the fraction of blue gems in the packet is = 3/10.

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

**Ans:** The minimum age required to become the prime minister of India should be above 25 years of age if they are a member of Lok Sabha and should be above 30 years of years if they are a member of Rajya Sabha.

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

**Ans:** The most secure is Linux and the least secure is Windows.

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** By climbing the summit of Mount Everest , Ashwini was overwhelmed by the deep sense of joy and thankfulness . It was a joy which lasts a lifetime .When she climbed the mount she felt ”all her hard works was very mean to her “. The experience changed her completely. In Mount Everest the air has so little oxygen that even with tanks ,it can feel like “ running on a treadmill and breathing through a straw “. It is a unforgettable memory .Ashwini experienced this moment with her friends and enjoyed that moment at every second .She played games and did a many things with her friend ,Ashwini took many photos and send it to her family . when she stepped on to the mount Everest she felt like an Angel, and she felt like that she is flying over sky and all the clouds are pass over her . When she back to her place Ashwini cried because she felt that she was coming out from the heaven.

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1. Consider the test string **“Mozilla/5.0 (Windows NT 6.1; rv:13.0) Gecko/20100101 Firefox/13.0.1”** the questions will follow.
   1. What does the above string typically represent?

Ans: It represent the browser information

* 1. Write the **non-greedy** output of executing the following expression on the test string: **s/.\*\//|/**
  2. Write the **greedy** output of executing the following expression on the test string: **s/.+\//|/**
  3. Write the output of executing the following expression on the test string: **s/\./|/g**

1. Give one example each for the following:

**Ans:**

* 1. A connection-oriented protocol – TCP
  2. A service which uses a connection-oriented protocol – Telephone connection
  3. A connection-less protocol - UDP
  4. A service which uses a connection-less protocol – UDP provides connectionless services

1. How many years ago was **k7computing.com** created?

**Ans:** K7 computing.com was created in 1991.

1. Specify in suitable detail exactly what the following commands would accomplish:
   1. chmod 755 auto\_download.sh

Ans:

* 1. trib +r -s +h autoexec.bat

1. What is meant by a Domain Generation Algorithm (DGA)?

**Ans:** Domain Generation Algorithm a domain generating algorithm which is used by hackers to create new domains.

Why are DGAs useful for cyber criminals?

**Ans:** It make highly impossible to find out its existence in a computer, so it is much useful for cyber criminals to use

for hacking purpose.

1. Write an example Python/Perl program to connect to an SQL db called “patient\_data”, obtain all records and display the following data in the format shown for every patient in the db:

“Patient <patient\_name\_to\_be\_filled> aged <patient\_ age\_to\_be\_filled> has consulted Dr <doctor\_name\_to\_be\_filled> <consultation\_count\_to\_be\_filled> times.”

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**Ans:** The most secure is Linux and the least secure is Windows.

1. What are the symptoms that might suggest that a system is infected with malware?

**Ans:** Slow in daily operations and sudden crashes are the symptom of system is infected with malware.

1. Your friend has a computer with an antivirus product installed. He has downloaded a program from the internet and installed it on his computer. After this, his Internet Explorer start page was changed and he started receiving emails from people he did not know. These problems were not solved even after he removed the program. What would be your suggestion to him?

**Ans:** I will suggest him to take his computer to a professional service center.

1. 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 100 words).

**Ans** : By climbing the summit of Mount Everest , Ashwini was overwhelmed by the deep sense of joy and thankfulness . It was a joy which lasts a lifetime .When she climbed the mount she felt ”all her hard works was very mean to her “. The experience changed her completely. In Mount Everest the air has so little oxygen that even with tanks ,it can feel like “ running on a treadmill and breathing through a straw “. It is a unforgettable memory .Ashwini experienced this moment with her friends and enjoyed that moment at every second .She played games and did a many things with her friend ,Ashwini took many photos and send it to her family . when she stepped on to the mount Everest she felt like an Angel, and she felt like that she is flying over sky and all the clouds are pass over her . When she back to her place Ashwini cried because she felt that she was coming out from the heaven