This document details the Slot Analysis as well as Answers to Questions that students recollected post their TCS NQT (Slot 2) on 24th October 2020.

Disclaimer:
1. The questions showcased in this document have been recreated through memory, thanks to test-takers who recalled the questions post their test.
2. The question repetition between slots is very miniscule.
3. Please use this document as an indicative preparation tool, rather than an exact replica of questions that appeared or can appear in the TCS NQT.

Contents

TCS NQT Online Test Pattern

The pattern that was followed for the TCS NQT was as follows.

Section Order	Section	# Qs	Duration (minutes)
1	Numerical Ability	26	40
2	Verbal Ability	24	30
3	Reasoning Ability	30	50
4	Programming Logic	10	15
5	Coding	2	45

Syllabus

The following was the syllabus which was tested in the slot.

Numerical ability:

- Data Interpretation
- Statistics
- Time and Work
- Mensuration
- Number System
- Time, Speed and Distance
- Ratio and Proportions
- Linear Equations
- Simple Interest and Compound Interest
- Percentages
- Profit and Loss
- Weighted average

Verbal Ability:

- Reading comprehension
- Sentence correction
- Sentence completion
- Passage Completion - Missing words (Cloze passage)
- Knowledge of Formal/Informal language

Reasoning Ability:

- Attention to detail
- Unboxing a cube
- Data Arrangements
- Coding and Decoding
- Cuts and unfolds
- Venn diagrams
- Blood relations
- Data Interpretation
- Visual reasoning
- Syllogisms
- Statements and Assumptions

Programming MCQ's:

- Operators
- Looping statements
- Control statements
- Arrays
- Strings
- Functions
- Object Oriented Programming (OOPS)
- Standard Template Libraries (STL)
- Object Modeling
- Compiler Design
- Threading
- Data Structures: Linked List, Stack, Queue, Trees and Graphs
- Recursion
- Pseudocoding
- Algorithms
- Basic Software Development Cycle
- Collections

Coding:

- Fundamentals of Programming - Conditional and looping statements, Arrays, Strings.

Slot Analysis

- The assessment platform used was TCS iON.
- As already revealed during the DRC and by FACE Prep, both intra-sectional and inter-sectional navigation were not possible.
- Every question was mandatory, and only upon completing a question would you be able to go to the next question.
- Revisiting of answers already submitted is not possible.
- There was no negative marking.
- All test-takers within the slot got the same questions.
- The test was **NOT Adaptive**, for a lot of other websites incorrectly communicated this to students. FACE Prep accurately pointed out that the test was not adaptive – just that the test had no intra-sectional and inter-sectional navigation.
- There was **100% repetition of topics, as accurately predicted by FACE Prep**.
- There was the presence of an on-screen calculator, which candidates could use.
- As clearly pointed out in the test instructions by TCS, if one had to do rough work, it must be visible clearly in the webcam that one is doing rough work and not performing any malpractice. This has also been **accurately pointed out by FACE Prep** earlier.
- Apart from a very few questions repeated from Slot 1, most of the questions in Slot 2 were new.
- Types of Aptitude questions appeared in Slot 2 were similar to Slot 1 questions.
- There were two Fill in the Blanks type questions in the programming MCQs section.

Questions with Answers:

Numerical Ability

Q1. What is the fourth proportional of 0.006,1.2 & 6/25 ?

A. 36
B. 48
C. 4.8
D. 3.6

Answer: Option B

Q2. The present ages of three brothers are in the proportion 12:14:17. The difference between the ages of the elder and the eldest is 6 years. What will be the proportion of their ages after four years?

A. 14:16:19
B. 40:46:55
C. 16:18:21
D. 13:15:18

Answer: Option A

Q3. Two ants of length 1cm and 1.2 cm crawl in opposite directions with average speeds 2 and 1 mm per second respectively. How many seconds will they take to cross each other?

A. 4.4
B. 2.8
C. 0.4
D. 1.5

Answer: Option A

Q4. The index numbers of five commodities are 121,123,125,126,128 and the weights assigned to these are respectively 5,11,10,8,6. Then what is the weighted average index number?

A. 123.8
B. 124.2
C. 124.6

D. 125.2

Answer: Option C

Q5. Which one among the following has the least value?

A. √75 - √74
B. √74 - √73
C. √77 - √76
D. √76 - √75

Answer: Option C

Q6. The Range and the Standard Deviation of a data are R & S respectively. With the shift of origin of the data change(s) occur in the value(s) of:

A. Both R & S
B. Neither R nor S
C. R only
D. S only

Answer: Option B

Q7. A sum was lent to X for three years by an organisation who fixed a yearly rate of 10% compound Interest for repayment along with the condition of recovery in equal installments of Rs.31944. What percentage (correct to two decimal places) above the borrowed amount had X to pay the organization?

A. 18.43
B. 21.25
C. 16.52
D. 20.63

Answer: Option D

Q8. A retailer purchased 25 identical toys for a price Rs P and sold some of them for Rs P. If he calculated his profit as 8%, with selling price as base instead of cost price then how many did he sell?

A. 24
B. 20
C. 21

D. 23

Answer: Option D

Q9. The Table below presents the percentage marks obtained by three students A, Y, Z in the four components of assessment, A, B, C, D of a paper whose respective weightages are 4, 3, 2, 2, 1.

Students/Marks	A	B	C	D
X	78	85	72	76
Y	65	68	64	73
Z	82	76	81	75

What is the ratio of the average percentage of X in A, B to that of Y, Z combined in C, D?

A. 324:283
B. 326:293
C. 28:25
D. 81:73

Answer: Option D

Q10. A city water supply tank has two inlet pipes X and Y, which can fill it in 20 and 30 hours respectively, and an outlet pipe Z which can empty a full tank in 40 hours. If the tank is empty and the taps are opened in succession for one hour each, and the process continues, in how many hours will the tank get filled?

A. 49 1/4
B. 51 3/7
C. 49 ½
D. 49 1/7

Answer: Option C

Q11. A sum of Rs.12500 is invested on 1st January 2016 at 4% simple interest p.a. How much interest in RS. gets accrued on the end of the day on 1st July 2016?

A. 240
B. 400

C. 250
D. 500

Answer: Option C

Q12. What is the real value of (0.000314 + 0.000198)^(1/3)?

A. 0.04
B. 0.08
C. 0.8
D. 0.4

Answer: Option B

Q13. What is the simplified value of (10/15*6)[22/2/5 of [(64-2*8) +2]-⅖?

A. 6
B. 4
C. 5
D. 2

Answer: Option B

Q14. A man who has to walk 11Km, finds that in 30 minutes he has travelled two-ninth of the remaining distance. What is his speed in Km/h?

A. 4.8
B. 4
C. 4.2
D. 4.5

Answer: Option B

Q15. Six square plots are connected end to end to obtain a rectangular plot area 726 m^2. If we take, π=22/7, by what factor is the perimeter of this plot more than that of the circumference of a circle of radius 10m?

A. 1.45
B. 2.45
C. 2.1
D. 2.8

Answer: Option B

Q16. The mean and standard deviation of the data which is comprised of a set of ten positive numbers are 8 and 2 respectively. If the sum of squares of time along with ten numbers is 599.What is the tenth number?

A. 7
B. 8
C. 9
D. 11

Answer: Option C

Q17. With what value should the highest quantity in data 65,52,14,26,18,35,32,38 be replaced so that the mean and median become equal?

A. 51
B. 66
C. 64
D. 53

Answer: Option D

Q18. A work is assigned to 6 men and 12 women and they could complete it in 3 days. It was also observed that together they can do 7 times as much work a man and a woman can do.In how many days would 14 women have done the work?

A. 10
B. 6
C. 12
D. 9

Answer: Option D

Q19. If the HCF of 180 and 432 is expressed as (180m + 432n), where m and n are integers, then what is the difference between m and n?

A. 3
B. 7
C. 9
D. 8

Answer: Option B

Q20.If (x+10)% of 240 is 60% more than x% of 180, then 15% of (x+20) is what percent less than 25% of x?

A. 16
B. 15
C. 15 ½
D. $19^{1}/_{21}$

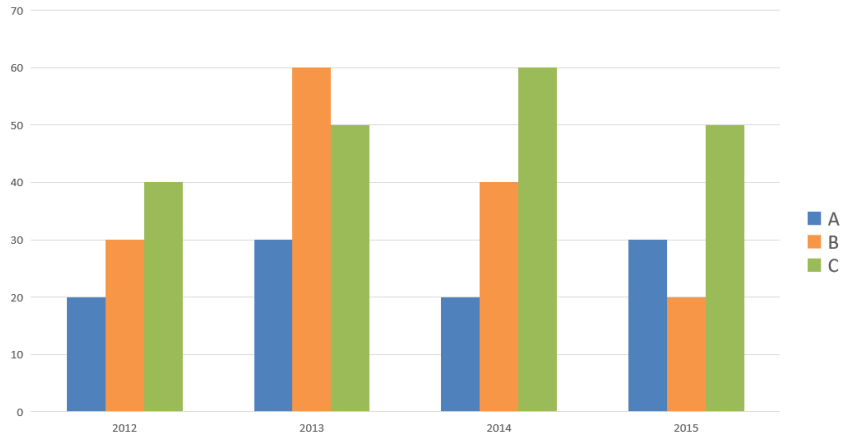
Answer: Option A

Q21. A sales representative 's commission is 6% on all sales upto Rs.15000nand 5% on all sales exceeding this. He remits Rs.47350 to his company after deducting his commission. What were the total sales?

A. Rs.49000
B. Rs.47500
C. Rs.50500
D. Rs.50000

Answer: Option D

Q22. The sales (in multiples of hundred) of three brands A, B, C of car from a showroom during four consecutive years, 2012 - 2015 have been presented through the Bar Graph given below.



In which year is the sale of A and B together is 125% of that of C?

A. 2013
B. 2014
C. 2015
D. 2012

Answer: Option D

Q23. The List Price of an item was kept 40% above what the shopkeeper had paid to the manufacturer. On selling the item a profit of 8.64% was earned after allowing two successive discounts, the first one of which was 20%. What was the percentage of the second discount?

A. 3.25
B. 3.6
C. 3.84
D. 3

Answer: Option D

Verbal Ability

Q1. For the four sentence (S1 to S4) paragraph given below, sentences S1 & S4 are given. From the options P,Q and R, choose appropriate sentences for S2 & S3.

S-1: Some of the earliest currencies were objects from nature
S-2:
S-3:
S-4: They were similar in size, small and durable

P. Although they may seem a pretty random choice the shells had a number of advantages
Q. A notable example is cowne shells first used as money about 1200 BCE
R. Counterfeiting dates to the invention of money.

A.QP
B.RQ
C.PQ
D.PR

Answer: Option A

Q2. As it was his first job, Abhishek threw himself _____ it_____ a lot of enthusiasm.

A. Into,with
B. At,with
C. Across,in
D. Over,from

Answer: Option A

Q3. Since sunrise to sunset my grandmother would sit by her wheel spinning and reciting prayers.

A. No error
B. My grandmother would sit by her wheel
C. Spinning and reciting prayers
D. Since sunrise to sunset

Answer: Option D

Q4. For the four sentence (S1 to S4) paragraph given below, sentences S1 & S4 are given. From the options P,Q and R, choose appropriate sentences for S2 & S3.
S-1: Eight months ago, it was business as usual at the cafe.
S-2:
S-3:
S-4: I checked the miniature circuit breaker and realized it had tripped:

P: Around six in the evening there was fluctuation and the lights went off.
Q: I pulled the miniature circuit breaker switch back and it was fine again.
R: The days were warm and so the air conditioners were in full force.

A. RP
B. QR
C. PQ
D. RQ

Answer: Option A

Q5. The Candidate _____certificates the office could not verify were not permitted to appear before the interview board.

A. Whom
B. Whose
C. Who
D. Which

Answer: Option B

Q6 - Q8 Read the passage given below and answer questions.

It's apparently humankind's fate never to stop writing the history of pandemics. No matter how often they occur—and they do occur with great frequency—we collectively refuse to think about them until circumstances demand it. Then, when the immediate crisis passes, we put it out of our minds as quickly as possible. And so we again are unprepared when the next contagion—in this case, COVID-19—bursts upon us. Richard Conniff traces this alarming cycle in "How devastating pandemics change us," this month's cover story. It examines our long relationship with infectious diseases, from the hard lessons we've been forced to learn to the brave, and often difficult, characters who've risked their lives to save us.

Smallpox taught us that we could prevent disease through inoculation and, as the 1700s ended, vaccination. By the mid-1800s, cholera's lesson was about sanitation and the need for centralized water and sewer systems. About the same time, one man we've all heard of, Louis Pasteur, and one many of us haven't, Robert Koch, became the co-fathers of germ theory. Tools they created are still used to identify and fight what Conniff calls "an astonishing rogues' gallery of deadly pathogens."

And yet here we are, again, fighting on two fronts: the first, against a new coronavirus sweeping the planet to devastating effect; the second, with each other, over domestic and international politics and whether we're willing to pay the price of prevention.

It's an important question for our planet. While we debate, the next pandemic draws nearer.

Q6. Which statement is CORRECT according to the passage?

A. Research about vaccines is not reliable
B. All pandemics are not to be feared
C. Pandemics keep occurring periodically
D. There is no solution for a pandemic

Answer: Option C

Q7. In the fourth paragraph which pandemic is the author referring?

A. An unknown one
B. Small pox
C. COVID-19
D. Cholera

Answer: Option A

Q8. What does the writer imply that we should do?

A. Be vigilant about hygiene and health issues.
B. Wear masks when we step out of our homes.
C. Wash our hands and everything we touch carefully.
D. Maintain social distancing and avoid public gatherings.

Answer: Option A

Q9. The part of the sentence below may contain a grammatical error. Identify the part.
A high-end machine was inaugurate at the city's Institute of Medical Sciences which will facilitate 3000 RT PCR tests for Coronavirus in a day.

A. A high-end machine was inaugurate
B. at the city's Institute of Medical Sciences
C. for Coronavirus in a day
D. which will facilitate 3000 RT-PCR tests.

Answer: Option A

Q10. Select the most appropriate option to complete the sentence.
It was _____ a new experience for me to attend a Zoom meeting so I planned for it _____.

A. reasonably, basically
B. quite, carefully
C. really, terribly
D. surely, gently

Answer: Option B

Q11. The following sentence pair can be combined into a single sentence. Choose the sentence that best combines the two sentences without changing the meaning.

Nikhil researched the topic well. He was able to do his Viva Voce well.

A. Nikhil researched the topic well unless he was able to do his Viva Voce well.
B. Nikhil was able to do his Viva Voce well despite he researched the topic well.
C. Nikhil researched the topic well therefore he was able to do his Viva Voce well.
D. Nikhil was able to do his Viva Voce well although he researched the topic well.

Answer: Option C

Q12. Which one of the following sentences uses formal language?

A. This presentation takes the cake!
B. Shall we put this on our agenda for the next client week?
C. I apologize for the technical glitch that occurred during our webinar yesterday.
D. I'm disappointed with the sales figures, they need to look up!

Answer: Option C

Reasoning Ability

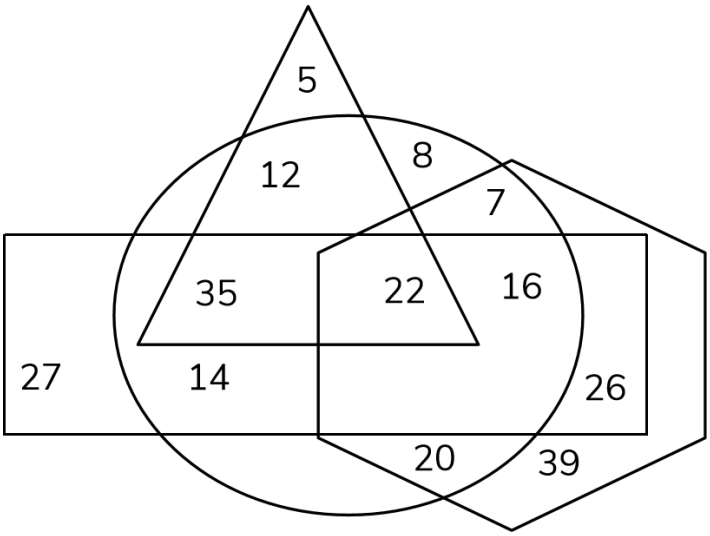
Q1. Among 5 objects P,Q,R,S and T
i. R is twice as heavy as T
ii.S is one and half times as heavy as Q
iii.Q and R together weigh as much as S and T together
iv.P and S together are one and half time as heavy as Q and T together

Which among the five is the heaviest of all?

A. Q
B. S
C. P
D. R

Answer: Option B

Q2. In the following diagram, the triangle stands for 'males', the circle for 'doctors', the rectangle for 'government employed', the hexagon for 'corona warriors'. The numbers in different segments show the number of persons for that segment. How many government employed doctors are either corona warriors or males or both?



A. 22
B. 73
C. 35
D. 38

Answer: Option B

Q3. A statement followed by two assumptions numbered I and II. Consider the statement and decide which of the given assumptions is implicit in the statement.

Statement:
Even though enough support is provided for potato production and its storage in cold stores,the state will continue to import from other countries
Assumptions:
i. In Spite of the support the potato production and storage will not be able to meet the demand for potatoes by the people in the store.
ii. The state is aware that the demand for potatoes by the consumers would rise substantially in the near future.

A. Only ii is implicit
B. Both i and ii are implicit
C. Neither i nor ii is implicit
D. Only i is implicit

Answer: Option B

Q4. In a certain code,M + N means M is the son of N, M X N means M is the brother of N; M÷N means M is the husband of N and M - N means M is the sister of N.

If T - P + Q X R ÷ S,then which of the following is true?

A. P is the son of S
B. Q is the uncle of T
C. S is the sister of Q
D. S is the aunt of T

Answer: Option D

Q5. A team of four players are to be selected from among four girls A,B,C,D and four boys P,Q,R,S such that there would be at least two girls in the team and the team selection should meet the following conditions
i.B cannot go with R
ii.D and P must go together
iii.S cannot be put up with A
iv. R and C must be together

A. QBSC
B. DAPQ
C. RCQS
D. BPRA

Answer: Option B

Q6. Each of the five students, P,Q,R,S and T studies two subjects from the given subjects named History,Mathematics,English,Sanskrit,and Science.Each subject is studied by two students
i.P studies Mathematics and Sanskrit
ii.R studies History and Mathematics
iii.S and T both study English
iv.Q does not study science
Who from the given option studies science?

A. P
B. Q
C. R
D. S

Answer: Option D

Q7. A statement is followed by three assumptions numbered I, II and III. Consider the statement and decide which of the given assumption(s) is/are implicit in the statement.
Statement:
Punishment of students in any form by teachers is banned in all schools to preserve the self-confidences of students.
Assumptions:

I. Punishment in a mild form is not a cognizable offence in out-of-school as it is a method for disciplining children.
II. Teachers taking recourse to punishing children will be held accountable for their actions.
III. Punishment might induce fear, negatively affecting students' level of confidence and learning

A. Only III is implicit
B. Only I and II are implicit
C. Only II is implicit
D. Only II and II are implicit

Answer: Option A

Q8. 1600 employees are working in a company in four departments: Accounts, HR, Production and Sales, 20$ of the employees are in Accounts with a male-female ratio of 5:3. 640 are working in Production where the number of males is twice the number of males of the Accounts Department. The number of HR employees is half the number of employees in the Accounts department and 60 of them are females. The number of male employee in the Sales department is same as that of the Production department.

How many female employees are working in the company?

A. 600
B. 540
C. 400
D. 500

Answer: Option D

Q9. Given below is a question followed by two statements, I and II, each containing some information. Decide which of the statement(s) is/are sufficient to answer the question.
How is Sheela exactly related to Ramesh?
Statements:

I. Mary's brother Vikash is married to Sheela and Ramesh's mother is the sister of Mary.
II. Sheela is the sister of Vikash and Vikash's only child is the cousin brother of Ramesh.

A. Both the statements I and II are necessary
B. Both the statements I and II together are not sufficient
C. Statement II alone is sufficient
D. Statement I alone if sufficient

Answer: Option D

Programming Logic:

Q1. Which argument is passed to fflush()?
A.no parameters
B.stdin
C.stdout
D.stderr

Answer: Option B

Q2. What will be the output for the below? Enter your answer only as Numeral

```
public Class Main
{
        public static void main(string[])
        {
                int x=1/2;
                if(x==0.5)
                        System.out.println(x+1);
                else
                        System.out.println(x*2);
        }
}
```

Answer: 0

Q3. What is the name of the method that examines a particular data entity and determines what data elements need to be associated?

A. Entity relationship diagram
B. Logic Data modeling
C. Customer Entities
D. Functional Primitive

Answer: Option A

Q4. What will be the output of the below code?

```
public class Main
{
        static int num=30;
        static class inner
        {
                void msg()
                {
                        System.out.Println('Num: num++);}
                }
        public static void main(string args[])
        {
                Main.Inner tw=new Main.Inner();
                tw.msg()
        }
}
```

Answer: 30

Q5. Select the correct code for opening a file for writing in binary mode

A. File*f =fwriteb("abc.bin")
B. File*f = fopen("abc.bin","bw")
C. File*f = fopen("abc.bin","wb")
D. File*f =fwrite("abc.bin","b")

Answer: Option C

Q6. What will be the output of the below code?

```
import java.util.ArrayList;
import java.util.Collections;
import java.util.Iterator;
class MainClass
{
	public void sort()
	{
		ArrayList<String> arrayList= new ArrayList<String>();
		arrayList.add("mango");
		arrayList.add("grapes");
		Iterator iterator = arrayList.iterator();
		while(iterator.hasNext())
		{
			System.out.print(iterator.next() +" ");
		}
		Collections.sort(arrayList);
	}
}
public class Main
{
	public static void main(String[] args)
{
	MainClass mainclass = new MainClass();
	mainclass.sort();
}
}
```

A. mango grapes
B. Compilation error
C. Collection.sort() throws Concurrent Modification Exception
D. Grapes mango

Answer: Option A

Q7. What is the name of the method that examines a particular data entity and determines what data elements need to be associated with it?

A. Customer Entities
B. Entity Relationship Diagram
C. Logic Data Modelling

D. Functional Primitive

Answer: Option B

Q8. We cannot overload _____ operator.

A. : :
B. []
C. ()
D. +

Answer: Option A

Q9. Which of the following functions is used to accept strings with white spaces?

A.getWhiteSpaceString();
B.scanf();
C.gets();
D.getstrings();

Answer: Option C

Q10. Which data structure is used to convert expression from one form to another form?

A. Graph
B. Stack
C. LinkedList
D. Queue

Answer: Option B

Q11. What is the mathematical function used to round off 6.23 to 7?

A. floor(6.23)
B. ceil(6.23,7)
C. floor(6.23,7)
D. ceil(6.23)

Answer: Option D

Q12. Which combination of the integer variables a, b and c makes the variable m get the value 4 in the following expression?

m = (a > b) ? ((a > c) ? a : c) : ((b > c) ? b : c)

A. a=6, b=3, c=5
B. a=6, b=5, c=3
C. a=5, b=4, c=5
D. a=3, b=4, c=2

Answer: Option D

Q13. Which of the following options best suits for 'Memory Leak Occurred'

A. Resource allocation pending while debugging the code
B. Program releases resources allocated in the memory
C. Program does not free the memory which is allocated dynamically
D. Occurs due to address assignment failure.

Answer- Option C

Coding:

Q1. WASHING MACHINE

A Washing Machine works on the principle of a Fuzzy system, the weight of clothes put inside it for wash is uncertain. But based on weight measured by sensors, it decides time and water levels which can be changed by menus given on the machine control area. For low Water level, time estimate is 25 minutes, where approximate weight is 2000 grams or any non-zero positive number below that.
For Medium Water level, time estimated is 35minutes, where approximate weight is between 2001 grams and 4000 grams.
For High Water level, time estimated is 45 Minutes, where approximate weight is above 4000 grams.
Assume the Capacity of the Machine is maximum 7000 grams.
Where the approximate weight is zero, the time estimate is 0 minutes. Write a function which takes numeric weight in the range [0,7000] as input and produces estimated time as output; if

input is more than 7000, then output is: "OVERLOADED!", and for all other inputs, the output statement is "INVALID INPUT".

Input should be in the form of integer value -
<Integer>

Output must have the following format -
TimeEstimated: <Integer> Minutes

Example 1
Input Value
2000
Output Value
Time Estimated: 25 Minutes

```
#include<iostream>
using namespace std;
int main()
{
    int weight;
    cin >> weight;
    if(weight < 0)
        cout << "INVALID INPUT";
    else if(weight == 0)
        cout<<"Time Estimated : 0 Minutes";
    else if(weight > 0 && weight <= 2000)
        cout << "Time Estimated : 25 Minutes";
    else if(weight >= 2001 && weight <= 4000)
        cout << "Time Estimated : 35 Minutes";
    else if(weight >= 4001 && weight <= 7000)
        cout << "Time Estimated : 45 Minutes";
    else
        cout << "OVERLOADED!";
    return 0;
}
```

Q2. Caesar Cipher
The Caesar cipher is a type of substitution cipher in which each alphabet in the plaintext or message is shifted by a number of places down the alphabet.

For example, with a shift of 1, P would be replaced by Q, Q would become R, and so on.

To pass an encrypted message from one person to another, it is first necessary that both parties have the 'key' for the cipher, so that the sender may encrypt it and the receiver may decrypt it.

the key is the number of OFFSETs to shift the cipher alphabet. Key can have basic shifts from 1 to 25 positions as there are 26 total alphabets.

As we are designing custom Caesar Cipher, in addition to alphabets, we are considering numeric digits from 0 to 9. Digits can also be shifted by key places.

For example, if given plain text contains any digit with value 5 and key = 2, then 5 will be replaced by 7. “-” (Minus sign) will remain as it is. Key value less than 0 should result into "INVALID INPUT"

Example 1:
Input:
Enter your PlainText: All the Best
Enter the Key: 1
Output:
The encrypted Text is: Bmm uif Cftu

Write a function customCaesarCipher(int key, String message) which will accept plaintext and key as input parameters and returns its cipher text as output.

```c
#include<stdio.h>
void customCaesarCipher(int key,char str[]);
int main()
{
    int key;
    char str[100];
    scanf("%[^\n]s",str);
    scanf("%d",&key);
    customCaesarCipher(key,str);
    return 0;
}
```

```c
void customCaesarCipher(int key,char str[])
{
    int n=0,i=0;
    for(n=0;str[n]!='\0';n++);
    if(key<0){
        printf("INVALID INPUT");
        return;
    }
    else{
        for(i=0;i<n;i++){
            if(str[i]!=' '){
              if(str[i]>=65 && str[i]<=90){
                 if((int)(str[i]+key)<=90)
                    str[i] = (int) (str[i]+key);
                 else
                    str[i] = (int)(str[i]+key-90+65-1);
              }
              else if(str[i]>=97 && str[i]<=122){
                 if((int)(str[i]+key)<=122)
                    str[i] = (int) (str[i]+key);
                 else
                    str[i] = (int)(str[i]+key-122+97-1);
              }
              else if((str[i]>=48 && str[i]<=57)){
                  if((int)(str[i]+key)<=57)
                    str[i] = (int)(str[i]+key);
                 else
                    str[i] = (int)(str[i]+key-57+48-1);
              }
        }
    }
    printf("%s",str);
  }
}
```