

This document details the Slot Analysis as well as Answers to Questions that students recollected post their TCS NQT(Slot 2) on 27th 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	1
Syllabus	2
Slot Analysis	4
Questions with Answers:	5
Numerical Ability	5
Verbal Ability	11
Reasoning Ability	17
Programming Logic	21
Coding	25

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
- Simplification – Fractions and BODMAS
- Surds and Indices

Verbal Ability:

- Reading Comprehension
- Passage Completion - Missing words (Cloze passage)
- Passage Completion - Missing sentences
- Error spotting
 - Prepositions
- Sentence Completion
 - Prepositions
 - Tenses
- Knowledge of Formal/Informal language
- Sentence improvement
- Parajumbles
- Knowledge of spelling

Reasoning Ability:

- Attention to detail
- Unboxing a cube
- Data Arrangements
- Cuts and unfolds
- Venn diagrams
- Blood relations
- Data Interpretation

- Visual reasoning
- Syllogisms
- Statements and Assumptions
- Rule based decision making
- Decision tables
- Number series
- Analogy

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 in JAVA
- Input/Output
- Constructor and Destructor
- Memory allocation
- Macros
- Containers
- Software Development life cycle

Coding:

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

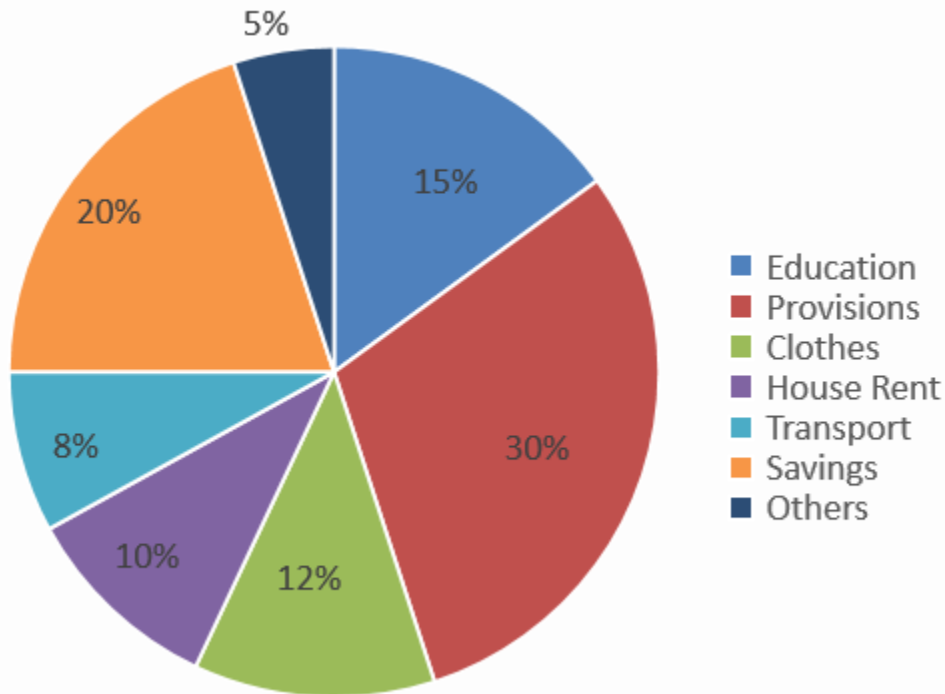
Slot Analysis

- 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.
- There were two Fill in the Blanks type questions in the programming MCQs section.
- As opposed to what was predicted earlier, **an error log is generated in the compiler** in the event of Compilation error. It mentions what error and where the error is(line number)
- Most students have been complaining about the Coding Compiler not working properly on Python. What doesn't work is the tab key for indentation. Instead, please use the space bar. Several students have been able to use this tactic to compile successfully.
- While attempting the Coding questions, the preferred language can be changed in the middle, but typed code will be erased and cannot be retrieved.
- It is possible to move back and forth between the coding questions but the typed code will be erased if not submitted earlier.
- Coding questions are logic-wise very simple. But they take time to type. Students to please plan their time in the Coding section to type quickly.

Questions with Answers:

Numerical Ability

Q1. The following pie chart shows the expenditure in percentage on various items and savings of a family during a month.



What is the monthly expenditure on education if the monthly expenditure on clothes is 2400?

- A. Rs. 3500
- B. Rs. 3000
- C. Rs. 6000
- D. Rs. 4000

Answer: Option B

Q2. A can finish a work in 16 days and B can finish the same work in 20 days. After A had worked for 4 days, B also joined with A to finish the remaining work. In how many days will the remaining work be finished?

- A. $8 \frac{1}{9}$ days
- B. $6 \frac{2}{3}$ days
- C. $8 \frac{8}{9}$ days
- D. $6 \frac{1}{3}$ days

Answer: Option B

Q3. If mean of 29 observations is 33 and on adding one more observation the mean becomes 34. What is the value of the 30th observation?

- A. 68
- B. 34
- C. 55
- D. 63

Answer: Option D

Q4. The following table gives the percentage distribution of the population of four states A, B, C and D based on the poverty line and on gender.

State	% of population below poverty line	Proportion of Male and Female	
		Below Poverty Line	Above Poverty Line
		M:F	M:F
A	40	3:4	4:5
B	35	5:7	3:5
C	28	1:2	3:4
D	40	4:7	4:3

If state A's female population of the below poverty line is 2,00,000, what is the total population of state A?

- A. 800000
- B. 925000
- C. 875000
- D. 920000

Answer: Option C

Q5. Raju lends Rs. 3000 to Bharath and a certain sum to Charan at the same time at 6% per annum simple interest. If after 5 years, Raju altogether receives Rs. 1650 as the interest from Bharath and Charan, what is the sum lent to Charan?

- A. Rs. 2500
- B. Rs. 2750
- C. Rs. 3250
- D. Rs. 3300

Answer: Option A

Q6. If $\frac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}} = a + b\sqrt{15}$, what is the value of $2a + 3b$?

- A. 5
- B. 11
- C. 8
- D. 10

Answer: Option D

Q7. 80 kg of an alloy X is mixed with 50 Kg of an alloy Y. If alloy X has lead and copper in the ratio 3:7 and alloy Y has lead and copper in the ratio 7:3, what is the amount of lead in the new alloy?

- A. 59 kg
- B. 35 kg
- C. 24 kg
- D. 56 kg

Answer: Option A

Q8. What is the standard deviation of the data given below?

10, 28, 13, 18, 29, 30, 22, 23, 25, and 32.

- A. 7.7
- B. 7.0
- C. 49.0
- D. 6.2

Answer: Option C

Q9. What is the value of $\sqrt{0.0016} + \sqrt{1.44} + \sqrt[3]{0.125} - \sqrt[3]{0.216} / \sqrt[3]{0.512}$?

- A. 1.02
- B. 0.99
- C. 2.49
- D. 0.97

Answer: Option B

Q10. Sarita wants to gift a stationery kit which includes a pencil, an eraser and a sharpener to some kids in her village. She went to a wholesaler for purchasing these items. The seller sells pencils in packing of 12, erasers in a packing of 18, and sharpeners in a packing of 10. She purchases the minimum number of packets of pencils, erasers and sharpeners so that a fixed number of kits can be prepared without any item being unused or short. What is the number of packets of pencils purchased by her?

- A. 15
- B. 18
- C. 10
- D. 12

Answer: Option A

Q11. A boat covers 56 km upstream in 7 hours and 48 km downstream in 4 hours. What is the speed of the boat in still water?

- A. 10 kmph
- B. 8 kmph
- C. 4 kmph
- D. 12 kmph

Answer: Option A

Q12. The length of a rectangle is 48 m and its perimeter is 150 m. What will be the perimeter of the square whose area is equal to this rectangle?

- A. 128 m
- B. 144 m
- C. 324 m
- D. 360 m

Answer: Option B

Q13. If $x + y = 45$, $x - y = 11$, what is the ratio of $x:y$?

- A. 28:17
- B. 17:28
- C. 23:26
- D. 25:24

Answer: Option A

Q14. In an examination 80% of the students passed in science, 70% in mathematics and 60% in both science and mathematics. If 65 students failed in both the subjects, what will be the total number of students?

- A. 650
- B. 3250
- C. 6500
- D. 1300

Answer: Option A

Q15. What is the mean of the mode and the median of the following data?

12, 28, 26, 27, 17, 16, 22, 25, 15, 16, 11

- A. 16.5
- B. 16
- C. 17
- D. 16.3

Answer: Option A

Q16. Mr. Raju travelled a certain distance at a certain speed. Had he moved 4 kmph faster, he would have taken 30 minutes less to cover the distance. If he had moved 2 kmph slower, he would have taken 30 minutes more to cover the distance. What is the distance travelled by him?

- A. 8 km
- B. 4 km
- C. 12 km
- D. 9 km

Answer: Option B

Q17. If A and B can do a piece of work in 24 days, B and C can do it in 40 days, while A and C can do it 30 days. In how many days can A alone do it?

- A. 75 days
- B. 60 days
- C. 120 days
- D. 40 days

Answer: Option D

Q18. The incomes of A and B are in the ratio 8:5, and their expenditures are in the ratio 13:7. If each saves Rs.3000 what is the expenditure of B?

- A. Rs.16000
- B. Rs.13000
- C. Rs.7000
- D. Rs.10000

Answer: Option C

Q19. If 2 meter broad walkway is built around a garden 18 meters long and 12 meters wide. What will be the area of the walkway?

- A. 136m^2
- B. 64m^2
- C. 154m^2
- D. 104m^2

Answer: Option A

Q20. Mr. Ramu invested Rs. 9000 at a certain rate of interest compounded annually for three years. If it amounts to Rs. 10,890 at the end of second year, what will be the interest for the third year?

- A. Rs. 990
- B. Rs. 1,331
- C. Rs. 1,089
- D. Rs. 1,210

Answer: Option C

Q21. The perimeter of a rectangle plot is 36 m. If the length is increased by 6m and the breadth is decreased by 3m, the area of the plot remains the same, what is the length of the plot?

- A. 8 m
- B. 6 m
- C. 10 m
- D. 12 m

Answer: Option C

Q22. The population of a town is 1,21,000. If it increases at the rate of 10% per annum, what is the difference between the population 3 years hence and that of 2 years ago?

- A. 61251
- B. 61055
- C. 61051
- D. 62041

Answer: Option C

Verbal Ability

Q1. Fill in the blanks with most appropriate set of words from the options given below:

What did the painter do _____ himself from falling?

When he felt the ladder, _____ he grabbed the gutter to save himself from falling

- A. To save/beginning to slip
- B. To save/began slipping
- C. To save/begin to slip
- D. For saving/began to slip

Answer: Option D

Q2. Choose the appropriate option to complete the sentence:

_____, but could not get it to start this morning

- A. I have the car serviced yesterday
- B. I having the car serviced yesterday
- C. I got the car serviced yesterday

D. I get the car serviced yesterday

Answer: Option C

Q3. One part of the sentence below may contain an error. Identify the part
He realized he had to undergo an MRI test but was too frighten

- A. but was too frighten
- B. an MRI test
- C. had to undergo
- D. He realized he

Answer: Option A

Q4. Experts suggest that it may take the development of multiple vaccines to begin the process of protecting the world's population from COVID-19. Most of the current vaccine front-runners require two (1)_____ that could possibly be administered annually. No vaccine is 100 percent effective, and once a vaccine is approved, there are still many (2)_____ to overcome before a shot can be made widely available.

Blank1. A. coses B. bouts C. spells D. circles

Blank 2. A. tracks B.jumps C. hurdles D. snags

- A. (1)-C,(2)-B
- B. (1)-D, (2)-A
- C. (1)-B, (2)-D
- D. (1)-A, (2)-C

Answer: Option D

Q5. Choose the appropriate option to complete the sentence:

The General could not _____ his soldiers to march forward, _____ the lure of extra money and food.

- A. Tell, nonetheless
- B. Persuade, despite
- C. Ask, hopefully
- D. Force, though

Answer: Option B

Q6. The following three sentences can be revised into one better sentence. Choose the sentence that is the best version:

He told us he had read Milton. He had read it in a prose translation, when he was fourteen.

- A. He told us he had read Milton in a prose translation when he was fourteen.
- B. He was fourteen when Milton's prose translation he had read.
- C. When he read Milton prose translation, he told us he was fourteen.
- D. He has read Milton at fourteen in a prose translation

Answer: Option A

Q7. For the four sentences (s1 to s4) paragraph below, sentences s1 and s4 are given. From the options P,Q,R choose the appropriate sentences for s2 and s3 respectively.

S1. India's rural districts, home to nearly 74% of the Indian population, accounted for 65% of all Covid-19 tests conducted in August, and 55% of new cases reported that month.

S2.

S3.

S4. This is the first time that the district level data on testing from across the country was made public.

Options;

P. The government will start distributing wheat and ragi through the public distribution system in October.

Q. The government this week released in Parliament data on the number of Covid-19 tests conducted in each of India's 734 districts in August.

R. Urban districts, on the other hand, are home to 14% of the population and accounted for nearly 22% of all the tests conducted in August, with 28% of the cases reported that month coming from them.

- A. RQ
- B. PQ
- C. PR
- D. QR

Answer: Option A

Q8. Two sentences have been removed from the text below. Read the text and then match the missing sentences to fill up the blanks. You will need to choose 2 options out of 4 -P,Q,R,S - provided:

Options:

Dias, who knew farming intimately, came up with the ambitious goal of planting 1 million jackfruit trees across SriLanka. _____1_____. He visited villages to distribute the jackfruit seedlings and mailed seeds to far flung corners of the country. _____2_____. Today, Dias is considered a nation hero, and like most srilankan children, I first learned about Dias in a school textbook. His jackfruit campaign also helped establish food security in SriLanka during World War II, while nearby places such as Bengal and Vietnam experienced horrific famines in the 1940s.

Options:

P. The english rulers planned to kill Dias by poisoning him

Q. A planter by trade, Dias imported jackfruit seeds from Malaysia and gathered healthy seeds for germination

R. My parents had a nickname for me but I was too embarrassed to use it

S. Over time, Dias' campaign paved the way for too many successful jackfruit plantations across the country and earned him the heroic nickname of Kos Mama or Uncle Jack.

- A. RP
- B. QP
- C. QS
- D. SR

Answer: Option C

Q9. One part of the sentence below may contain an error. Identify the part.

The reign of the king was clearly coming to an end.

- A. the king
- B. was clearly coming
- C. the reign of
- D. to an end

Answer: Option C

Q10. Complete the following sentence by filling in the blanks (1 and 2) with the right words from the list given below:

Compared with conventional agriculture, organic farming uses fewer pesticides, reduces soil erosion, decreases nitrate leaching into groundwater and surface water, and _____ animal wastes back into the farm. These benefits are _____ by higher food costs for consumers and generally lower yields.

1. A. recycling B. recycle C. recycles D. recycled
2. A. increased B. balanced C. counterbalanced D. encountered

- A. 1.B, 2.D
B. 1.C, 2.C
C. 1.D, 2.B
D. 1.D, 2.A

Answer: Option B

Q11. For the four-sentence (S1 to S4) paragraph below, sentences S1 and S4 are given. From the options P, Q and R, choose appropriate sentences for S2 and S3 respectively.

S-1: Sleeping all night is great for most of your body -- but not for your joints.

S-2:

S-3:

S4: Rheumatologists recommend warming yourself with a heating pad, raising your home thermostat, or doing gentle hand exercises as soon as you wake up.

P: Lack of movement during the night can have you waking up as stiff as steel.

Q: Keeping pills by your bed so you can take the morning medications immediately also helps

R: Fortunately, there are ways to combat this problem

- A. PQ
B. PR
C. RP
D. QR

Answer: Option B

Q12. You are going to read a text about glaciers. Some sentences are missing from the text. Choose from the list (A-C) the most appropriate sentence for each gap (1-2) in the text. There is one extra sentence that you do not need to use.

Since the early 1900s, many glaciers around the world have been rapidly melting. 1

Specifically, since the industrial revolution, carbon dioxide and other greenhouse gas emissions have raised temperatures, even higher in the poles. 2 Scientists project that if

emissions continue to rise unchecked the Arctic could be ice free in the summer as soon as the year 2040 as ocean and air temperatures continue to rise rapidly.

- A. More than a third of remaining glaciers of the world would have melted by 2030.
- B. As a result, glaciers are rapidly melting, calving off into the sea and retreating on land.
- C. Human activities are at the root of this phenomenon.

- A. (1) C, (2) B
- B. (1) C, (2) A
- C. (1) A, (2) B
- D. (1) B, (2) C

Answer: Option A

Q13. You are going to read a text about Mark Twain. Some sentences are missing from the text. Choose from the list (A-C) the most appropriate sentence for each gap (1-2) in the text. There is one extra sentence that you do not need to use.

When Mark Twain proposed to Olivia Langdon, her father wanted to be sure of his good character. Since they had no friends in common, Twain offered the names of several friends he had made out west. (1) _____ All wrote back condemning Twain as a louse and a freeloader, two predicted that he would fill a drunkard's grave. (2) _____ "Then I'll be your friend myself," Langdon said. "Take the girl. I know you better than they do." Langdon was right for Twain proved to be a faithful and loving husband to Olivia.

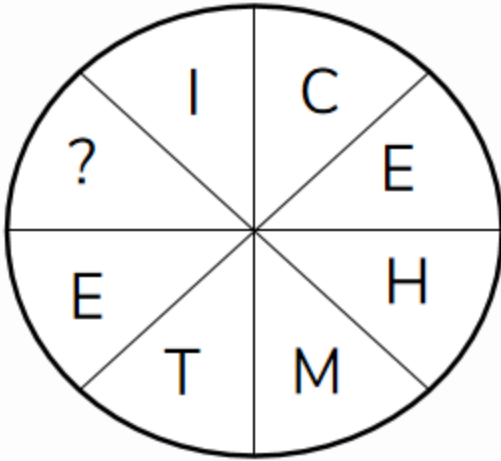
- A. Langdon wrote to ask them what they thought of the match.
- B. Twain took his pen name from an alert cry used on his steamboat - "by the mark, twain".
- C. Twain bitterly remarked that apparently he didn't have any friends.

- A. (1)-C, (2)-A
- B. (1)-C, (2)-B
- C. (1)-B, (2)-A
- D. (1)-A, (2)-C

Answer: Option D

Reasoning Ability

Q1. Which letter will come in the place of question mark in the puzzle?



- A. P
- B. N
- C. R
- D. U

Answer: Option C

Q2. Select the correct option based on the following criteria:

- A. If data in statement I alone is sufficient to answer the question.
 - B. If data in statement II alone is sufficient to answer the question.
 - C. If data of both either statement I alone or statement II alone are sufficient to answer the question.
 - D. If data in both statements I & II together are necessary to answer the question.
- I. X is older than Y. Z is younger than W.
II. W is older than Z. X is younger than Z.

Who is younger among W, X and Z?

- A. C
- B. A
- C. B
- D. D

Answer: Option B

Q3. Select the correct option based on the following criteria:

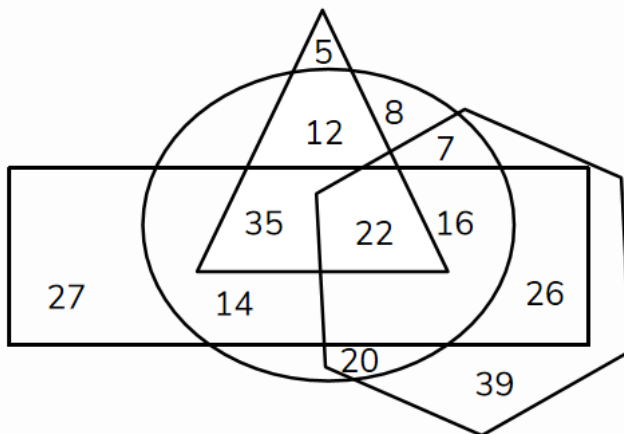
- A. If data in statement I alone is sufficient to answer the question.
- B. If data in statement II alone is sufficient to answer the question.
- C. If data of both either statement I alone or statement II alone are sufficient to answer the question.
- D. If data in both statements I & II together are necessary to answer the question.
- I. Point S is towards north of point T and point U is 20 meter east of point S.
- II. Point V is towards south-west of point S and point S is 10 meter from point T.

What is the distance between point T and point U?

- A. D
- B. C
- C. B
- D. A

Answer: Option A

Q4. In the following diagram, the triangle stands for 'males', the circle stands for 'doctors', the rectangle stands for 'government employed', the hexagon stands 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 on both?

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

Answer: Option A

Q5 & Q6. Based on the following data, answer the questions:

Amisha wanted to throw a reception party. The expenditure percentage distribution of the party was 30% on Catering, 25% on Decoration, 20% on Music system, 15% on Photography & Videography and 10% on invitations.

The total expenditure was Rs. 1,059,600.

Q5. How much money was spent on photography & videography and invitations together?

- A. Rs. 264,900
- B. Rs. 158,940
- C. Rs. 105,960
- D. Rs. 211,920

Answer: Option A

Q6. How much money was spent on decoration in the party?

- A. Rs. 264,900
- B. Rs. 27,830
- C. Rs. 42,384
- D. Rs. 158,940

Answer: Option A

Q7. Choose the pair similar to the following

MDXF: OBZD

- A. ILPR: KNRT
- B. SGFN : UEHL
- C. CLPQ : MXCF
- D. BMXT: COZW

Answer: Option B

Q8. Study the given information carefully.

For a job selection in a company the following conditions need to be fulfilled.

The candidate must:

- i. be at least 23 years and at most 28 years as on 01 December 2020.
- ii. have at least 65% marks in written exam and 40% marks in interview.
- iii. possess a graduation degree with minimum 60% marks.

iv. have one-year work experience.

In case a candidate who fulfils all conditions except (iv) but possess 80% marks in graduation then case is to be referred to manager.

In the following question, details of candidates are given. Select the appropriate option accordingly.

Anshika was born on 07 March 1997. She completed her graduation with 75% marks. She has a work experience of 2 years. She scored 70% marks in written exam and 55% marks in interview.

- A. If candidate is to be selected
- B. If data is insufficient to conclude
- C. If candidate is to be rejected
- D. If case is to be referred to manager

Answer: Option A

Q9. Nehal, Iqbal, Ronit, Malini and Harbhajan participate in any one of the five activities i.e. Quiz, Singing, Dance, Debate and Mimicry. Ronit participates in Singing. Harbhajan does not participate in Debate and Mimicry. Malini does not participate in Mimicry. Iqbal participates in Quiz. Who participates in Debate?

- A. Nehal
- B. Cannot be determined.
- C. Malini.
- D. Nehal or Malini.

Answer: Option B

Q10. Two sentences are followed by two conclusions numbered I, II. Assuming the statements to be true, if they do not conform to real world knowledge, decide which of the conclusion(s) logically follows/follow from the given statements.

Statements:

- A. All Cats are Lions.
- B. Some Lions are Tiger.

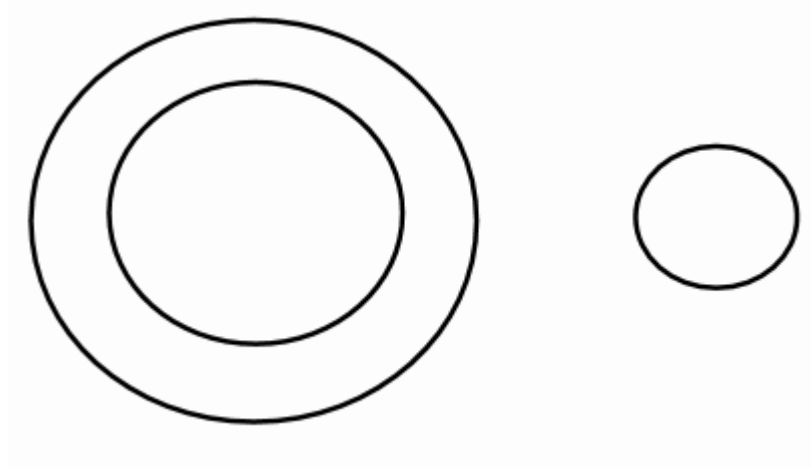
Conclusions:

- I. Some Tigers are Cats.
- II. Some Lions are Cats.
- A. Neither conclusion I nor II follows.
- B. Both conclusions I & II follow.
- C. Only conclusion II follows.

D. Only conclusion II follows.

Answer: Option D

Q11. Which of the following elements satisfies the Venn diagram?



- A. Quadrilaterals, Square, Triangle
- B. Colour, Plate, Fork
- C. Doctor, Patient, Nurse
- D. Transport, Bus, Cycle

Answer: Option A

Programming Logic

Q1. What would be the output of below code?

```
1 #include<iostream>
2 using namespace std;
3 int main()
4 {
5     int num = 5;
6     num = printf("Apple Fruit");
7     printf("%d", num);
8     return 0;
9 }
```

Type your answer here:

Answer: Apple Fruit11

Q2. Specify the precise answer for Overloading of destructor:

- A. Partially Possible
- B. Possible
- C. Not Possible
- D. None of the given options

Answer: Option C

Q3. Which of the following is not a technique of dynamic memory allocations?

- A. dmalloc()
- B. realloc()
- C. calloc()
- D. malloc()

Answer: Option A

Q4. When the given code is executed, what will be the output that is printed?

```

1 #include<stdio.h>
2 #define SQUARE(s) s*s
3 int main()
4 {
5     int a = 3;
6     printf("%d", SQUARE(a+2));
7     return 0;
8 }

```

Enter your answer ONLY as a NUMERAL in the box.

Answer: 11

Q5. Match the pairs.

Real Time Usages Terms			Best Suited underlined data structures
A	Network data mode	1	Tree
B	Relational Database Management	2	Queue

	System	3	Array
		4	Graph

- A. A-3, B-2
- B. A-4, B-3
- C. A-3, B-1
- D. A-2, B-4

Answer: Option C

Q6. Which of the following statements about constructor is NOT true?

- A. We can define more than one constructor with different signature in same class
- B. We can overload constructor in derived class
- C. Constructor has no return type
- D. Constructor has the same name as the class name

Answer: Option B

Q7. Glass box testing is also known as _____

- A. White Box Testing
- B. Sanity Testing
- C. Black Box Testing
- D. Smoke Testing

Answer: Option A

Q8. Write the output for the below code.

```
1 import java.util.*;
2 public class Test
3 {
4     public static void main(String...a)
5     {
6         Map<Integer, String> tempMap = new HashMap<Integer, String>();
7         tempMap.put(null, "Java");
8         tempMap.put(1, "Java EE");
9         tempMap.put(1, "Advanced Java");
10        System.out.println(tempMap.get(1));
11    }
12 }
```

- A. NullPointerException
- B. Error in Main Method
- C. Advanced Java
- D. Java EE

Answer: Option C

Q9. A bus conductor has a bunch of coins, each coin has a different value. New coins are added at the end of the bunch. Only coins are issued to customers from the top side of the bunch. Developer X wants to implement this in application by the help of data structure. Which data structure is best suitable for implementation of current logic?

- A. Queue
- B. Graph
- C. Stack
- D. Tree

Answer: Option A

Q10. What is the full form of ROI in the context of Software development?

- A. Return-on-investment
- B. Rationality-of-internet
- C. Reduction-of-investment
- D. Rate-of-integration

Answer: Option A

Coding

Q1. Take a single line text message from the user. Separate the vowels from the text. Find the repeating occurrences of vowels from the text message. Display count of which vowel has repeated how many times.

Display a new Text message by removing the vowel characters as output.

Display the output in the exact format shown below in example, after displaying count of characters on next lines display the new text message on next line. "Hll wlcm" is the new text message.

If a text message entered by a user does not contain any vowels then display 0 as output. If a text message entered by a user contains any numeric value then display 0 as output.

If User enters a blank or empty text message, display "INVALID INPUT" as output. Message "INVALID INPUT" is case sensitive. Display it in the exact format given.

Example1:

Input:

Hello welcome

Output

a:0

e:3

i:0

o:2

u:0

Hll wlcm

Example2:

Input:

Hll wlcm

Output:

0

Solution in C++:

```
1 #include<iostream>
2 #include<string>
3 using namespace std;
4 int main()
5 {
6     string in,out="";
7     getline(cin,in);
8     int len=in.length();
9     int ascii[128]={0};
10    if(len>0)
11    {
12        for(int i=0;i<len;i++)
13        {
14            if(in[i]=='A' || in[i]=='E' || in[i]=='I'
15            || in[i]=='O' || in[i]=='U' || in[i]=='a'
16            || in[i]=='e' || in[i]=='i' || in[i]=='o'
17            || in[i]=='u')
18            {
19                ascii[in[i]]++;
20            }
21            else
22            {
23                if(in[i]>='0'&&in[i]<='9')
24                {
25                    cout<<"0";
26                    return 0;
27                }
28                else
29                    out+=in[i];
30            }
31        }
```

```
32     int outlen=out.length();
33     if(outlen!=len)
34     {
35         cout<<"a:"<<ascii['A']+ascii['a']<<endl;
36         cout<<"e:"<<ascii['E']+ascii['e']<<endl;
37         cout<<"i:"<<ascii['I']+ascii['i']<<endl;
38         cout<<"o:"<<ascii['O']+ascii['o']<<endl;
39         cout<<"u:"<<ascii['U']+ascii['u']<<endl;
40         cout<<out;
41     }
42     else
43     {
44         cout<<"0";
45         return 0;
46     }
47 }
48 else
49     cout<<"INVALID INPUT";
50 }
```

Q2. Indian Premier League IPL Cricket Matches are organized for a few Days. The problem is to prepare a timetable from Day 1 to Day n, where n depends on the number of teams participating. Set A represents the Names of Teams participating. Set A will be input from the user. Do not show an input user message. Directly accept the team names as string values and enter q to stop taking inputs.

Write code to display Pairing of Teams and possible number of matches possible excluding Semi Final and Final.

Note: Minimum 3 Teams are required and maximum limit of Teams is 12.

Example1:

Input Values

CHENNAI

MUMBAI

KOLKATA

PATNA

Q

Output Values

TOTAL MATCHES:6

CHENNAI-VS-MUMBAI

CHENNAI-VS-KOLKATA

CHENNAI-VS-PATNA

MUMBAI-VS-KOLKATA

MUMBAI-VS-PATNA

KOLKATA-VS-PATNA

Solution in C++:

```
1 #include<iostream>
2 #include<string>
3 using namespace std;
4 int main()
5 {
6     string s[12],in;
7     int total=0,count=0;
8     cin>>in;
9     while(in!="q" && in!="Q")
10    {
11        if(count==12)
12        {
13            cout<<"Maximum limit of Teams is 12";
14            return 0;
15        }
16        s[count++]=in;
17        cin>>in;
18    }
19    if(count>=3)
20    {
21        int n=count-1;
22        n=(n-1)*n;
23        cout<<"TOTAL MATCHES:"<<n<<endl;
24        for(int i=0;i<count-1;i++)
25        {
26            for(int j=i+1;j<count;j++)
27                cout<<s[i]<<"-VS-"<<s[j]<<endl;
28        }
29    }
30    else
31        cout<<"Minimum 3 Teams are required";
32 }
```