Tech giant TCS has flagged off its largest hiring drive, TCS Ninja, for 2022 pass-outs. One such drive concluded on **14-September-2021** with the first slot happening from **9:00 AM to 12:00 PM**. If you're appearing for the drive, this FREE Slot Analysis PDF, covering the Latest Recruitment Process, Test Pattern, Syllabus, and Most Recently Asked Questions, will help you.

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 questions repetition between the slots is expected to be very miniscule.

3. Please use this document as an indicative preparation tool, rather than exact replica of the questions that appeared or can appear in the TCS Ninja Online Test.

TCS Ninja Role and Packages

TCS Ninja is a job role that gets offered by TCS to fresh recruits (freshers). TCS offers the following package based on UG/PG category.
UG: INR 3,36,877 + 60,000*
PG: INR 3,53,578 + 60,000*
**Additional one-time incentive based on the performance in Xplore*

TCS Ninja Recruitment Process

1. Online Test
2. Technical, Managerial and HR Interview

TCS Ninja Online Test Pattern

Part	Part Name	Section	#Q	Duration (In Mins)
A	Cognitive Skills	Numerical Ability	26	40
		Verbal Ability	24	30
		Reasoning Ability	30	50
B	Programming	Programming Logic	10	15
		Hands-on Coding	2	45

TCS Ninja Online Test Assessment Platform

Assessment Platform	Inter-sectional Navigation	Intra-sectional Navigation	Marking Scheme
TCS - iON	Not Allowed	Not Allowed	No Negative Marking

Note:

1. Previously answered questions cannot be revisited.
2. Each Question needs to be solved in a particular time.
3. Questions cannot be skipped and every question is mandatory.
4. Calculator is present on-screen.
5. **C/C++/Java/Python/Perl** languages are allowed for Coding.

TCS Ninja Online Test Syllabus

Section	Syllabus
Numerical Ability	• Simple and Compound Interest • Simplification - Fractions, BODMAS • Statistics (Mean, Median, Mode, Standard Deviation) • Percentages • Time and Work - Efficiency and Man-days • Problems on Ages • Time, Speed and Distance • Mensuration

	• Profit and Loss • Equations • Ratios and Proportions • Data Interpretation • Surds and Indices • Mixtures and Alligations • Number system • Decision tables • Partnerships
Verbal Ability	• Reading Comprehension • Passage Completion • Error spotting • Sentence Completion • Knowledge of Formal/ Informal Language • Sentence Improvement • Knowledge of Spelling • Vocabulary • Para-jumble
Reasoning Ability	• Decision tables • Venn Diagrams • Statements and Assumptions • Blood Relations • Paper cuttings • Visual Reasoning • Unboxing of a cube • Data Sufficiency • Syllogisms • Statements - Course of action • Odd one out, Series, Analogy • Attention to Details • Rule-based decision making • Averages • Percentages • Data Interpretation • Statements and Arguments • Statements and Conclusions
Programming Logic	• Pseudo coding • Algorithms • Basic Software Development Cycle • Operators

	• Looping statements • Control statements • Arrays • Strings • Functions • Object-Oriented Programming (OOPS) • Data Structures: Linked List, Stack, Queue, Trees and Graphs
Hands-on Coding	**Fundamentals of Programming:** • Data types, Operators • Arrays • Strings • Decision Making • Looping • Functions

TCS Ninja Slot Analysis

- There was 100% repetition of topics from the syllabus trained by FACE Prep in its TCS Ninja/ NQT training.
- Most of the questions during a slot remained the same, but some students also got a few new questions too.
- The order of questions and options was shuffled between test-takers of the same slot.
- The presence of the question-wise timer (which varies from question to question) was a major impediment for test-takers.
- Numerical Ability Section's questions were of Moderate Difficulty Level.
- Most of the Questions of the Numerical Ability Section were from Simplifications, Percentages, Data Interpretations and Statistics.
- Verbal Ability Sections' questions' difficulty level ranged from Easy to Moderate.
- Reasoning Ability Section's questions were of Moderate Difficulty Level.
- Most of the questions of Reasoning Ability sections were from Visual Reasoning, Cubes, Data Sufficiency, Syllogism and Analogy.
- The Programming Logic section's questions difficulty level was easy.
- Most of the questions of the programming logic section were from output prediction, tree-traversal and Basic SDLC concepts.
- Coding Section questions were of moderate difficulty level.
- Overall level of the test settles around MODERATE.

TCS Ninja Numerical Ability Questions

Q1. If the 5-digit number 776xy is divisible by 3, 7 and 11, then the value of (5x+3y)?
A. 13
B. 21
C. 23
D. 26
Answer: C

Q2. $\text{If } x = \sqrt{9+\sqrt{9+\sqrt{9+\sqrt{9}.....\infty}}}$

$y = \sqrt{9-\sqrt{9-\sqrt{9-\sqrt{9}.....\infty}}}$

Find the relation between x and y
A. x - y = 1
B. x + y = 1
C. x/y=1
D. x . y = 1
Answer: A

Q3. The value of $3\frac{5}{6} \div \frac{2}{7}$ of $2\frac{1}{3}$-($\frac{3}{40} \div \frac{2}{15}$ of $\frac{3}{8}$) $\div$ ($\frac{4}{5} * 1\frac{1}{9} \div \frac{8}{15}$) is:
A. 3.85
B. 3.45
C. 4.35
D. 4.85
Answer: D

Q4. If $a^3 + b^3 = 539$ and a+b = 11, the value of $\sqrt{\{(a+b)^2+7ab\}}$ is:
A. 18
B. 17
C. 13
D. 19
Answer: B

Q5. In an examination, 55% of the students passed and 621 failed. If the number of students for the exam was 69% of those who had applied for the exam, how many students applied for the examination?
A. 1960
B. 1380
C. 2000
D. 1800
Answer: C

Q6. In 2020, a certain number of students for institute A appeared in the annual examination and 35% of the students failed. In the same year, 250% more students than that of A appeared in the same examination from institute B. If 70% of the total students of A and B, passed the examination, then the fail percentage of students of institute B is _____ . (correct to one decimal place)
A. 31.4
B. 25.7
C. 32.2
D. 28.6
Answer: D

Q7. A milkman adds 20% water to a given quantity of milk. He marks the price of adulterated milk by 25% of price of pure milk. What discount should he offer on the marked price for no profit no loss situation?
A. 25%
B. 20%
C. 16%
D. 33.33%
Answer: A

Q8. A shopkeeper gains 20% by selling an article at 25% discount on its marked price. If the cost price of the article increases by 20%, how much discount percentage should he give now on the same marked price to get a profit of 8%?
A. 20
B. 19
C. 12.5
D. 16.5
Answer: B

Q9. The difference between the simple interests accrued on a sum at p% p.a. and (p-5)% p.a. after four years will be Rs. 12,000. Find the sum?
A. Rs. 80,000
B. Rs. 72,000
C. Rs. 60,000
D. Rs. 50,000
Answer: C

Q10. What is the difference between the compound interest on Rs.60000 at the rate of 12% per annum compounded annually in 2 years and simple interest earned on Rs.50000 at 16% per annum in 2 years?
A. Rs. 746
B. Rs. 856
C. Rs. 816
D. Rs. 736
Answer: D

Q11. If a:b = 2:3; b:c = 4:5; and d is 20% more than c, find the ratio between a and d?
A. 4:9

B. 8:9
C. 4:7
D. 1:4
Answer: A

Q12. Aditya, Bhaskar and Chandu divide an amount of Rs. 10,200 among themselves in the ratio 4:7:6. Aditya and Chandu give Rs.600 each to charity and Bhaskar lent Rs. 3,000 to Pradeep and earned an interest of Rs. 1,200. Find the ratio of amounts with them now.
A. 5:4:6
B. 3:5:9
C. 4:5:6
D. 3:9:5
Answer: B

Q13. Pipes A and B can fill an empty tank in 20 mins and X mins respectively, whereas C can empty the full tank in 60mins. When pipes A, B and C are opened simultaneously the tank will be filled in 15 minutes. What is the value of X?
A. 40
B. 30
C. 20
D. 45
Answer: B

Q14. The lengths of trains X and Y are 240m and 300m respectively. X and Y pass a static pole in 6 and 12 seconds respectively. In what time (in seconds) will they cross each other, if they move in the same direction?
A. 36
B. 24
C. 18
D. 30
Answer: A

Q15. A boat can go 48km upstream and 36km downstream in 5.8 hrs. The speed of the boat in still water is 16km/h. How much time (in hrs) will the boat take to go 54km upstream and 40km downstream?
A. 6.8
B. 6.5
C. 7.2
D. 7.5
Answer: B

Q16. A box contains 25 paise coins and 50 paise coins. If the number of 25 paise coins is tripled, amount of money in box will increase by 50%, then number of 50 paise coins CANNOT be equal to
A. 36
B. 28
C. 32
D. 25

Answer: D

Q17. The sides of a triangular park are 36 m, 105 m and 111m. The cost (in INR) of levelling the park at INR. 8.50 per m^2 is _____ .
A. INR 15.980
B. INR 16,065
C. INR 17,010
D. INR 15,120
Answer: B

Q18. The volume of a solid right circular cone of height 16 cm is 15085(5/7) cm^3. What is the curved surface area (in cm^2) of the cone? (Take π = 22/7) (correct to one decimal place)
A. 3300.2
B. 3205.7
C. 3200.4
D. 3105.8
Answer: B

Q19. If the mean of the following distributions is 50, then what is the value of R?

Class	0-20	20-40	40-60	60-80	80-100
Frequency	6	2	3	R	5

A. 4
B. 8
C. 6
D. 5
Answer: A

Q20. What is the difference between Range and Quartile deviation of the following 11 items: 8, 10, 16, 22, 28, 18, 34, 35, 40, 26 and 12?
A. 22
B. 32
C. 11
D. 21
Answer: D

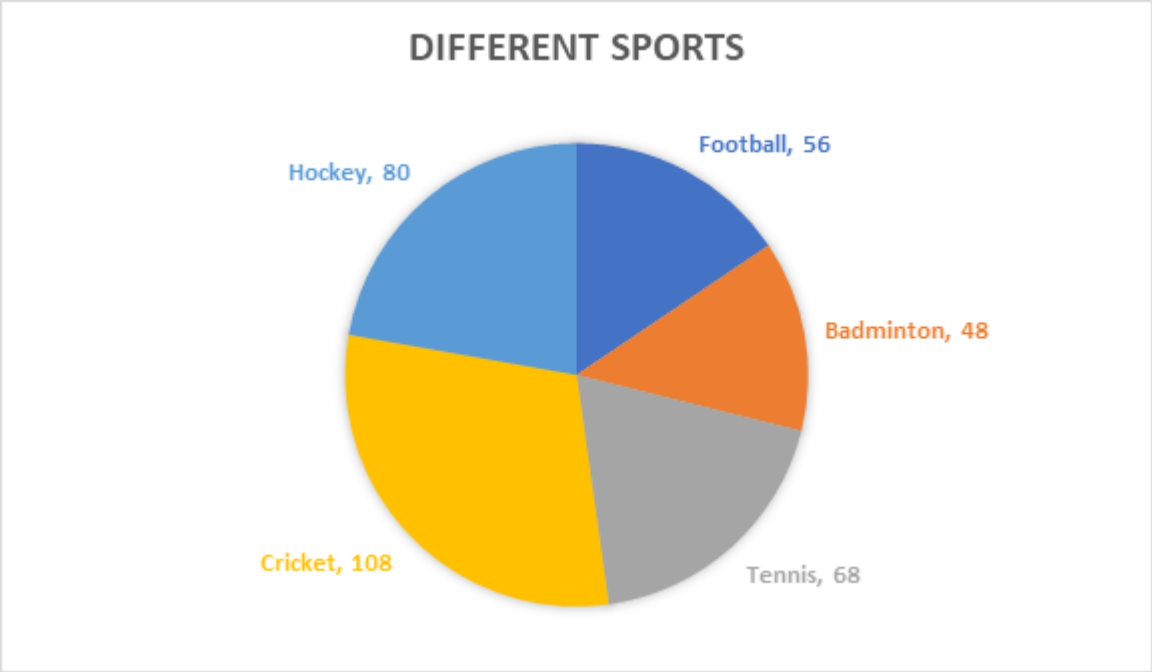
Q21. The mean of the first 7 multiple of smallest composite number is K, then find the median of the following numbers.

10, K, 13, 12, 16, 14 and 18
A. 15
B. 13

C. 16
D. 14
Answer: D

Q22. 30 packets of sugar of the same weight are kept in a storeroom. If 6 more packets of 35 kg each are kept in the storeroom, the average weight increases by 2.5 kg. Find the arithmetic mean of the initial total weight of sugar and the final total weight of sugar in the storeroom.
A. 600 kg
B. 750 kg
C. 810 kg
D. 705 kg
Answer: D

Q23. Distribution (degree wise) of persons in a colony playing different sports:



(Data are in Degree)
Total number of persons playing sports = 450
Study the following poe chart and answer the question
The number of persons playing Cricket exceeds the average number of persons playing Tennis, Hockey and Football by
A. 50
B. 55
C. 60
D. 65
Answer: A

Q24. Study the following table and answer the questions:
Revenue and Expenditure of companies X and Y during 2014 to 2018 (in INR crores)

Year	Company X		Company Y	
	Revenue	Expenditure	Revenue	Expenditure
2014	400	320	350	275
2015	475	350	400	300
2016	450	400	420	350
2017	500	390	480	400
2018	540	420	500	425

What percent is the average expenditure of company Y during 2014, 2016, 2018 less than 40% of total revenue of company X during 2015 and 2017?
A. 10.1
B. 10.3
C. 9.8
D. 11.4
Answer: B

TCS Ninja Verbal Ability Questions

Q1. One part of the sentence below may contain an error. Identify the part. If there is no error, choose 'No error'.

When Shailja will come, we will have to talk about the issue together.
A. No error
B. about the issue together.
C. we will have to talk
D. When Shailja will come,
Answer: D

Q2. One part of the sentence below may contain an error. Identify the part. If there is no error, choose 'No error'.
.
Real Madrid brilliantly played against Barcelona last night.

A. brilliantly played
B. against Barcelona last night.
C. Real Madrid
D. No error.
Answer: A

Q3. One part of the sentence below may contain an error. Identify the part. If there is no error, choose 'No error'.

Tyrion Lannister is better of the two advisors of the queen.

A. Tyrion Lannister is better
B. of the queen
C. No error
D. of the two advisors
Answer: C

Q4. Select the most appropriate option to fill in the blank.

Let us wait _____ the clock strikes twelve.

A. up to
B. since
C. until
D. unless
Answer: C

Q5. Select the most appropriate option to fill in the blank

I _____ waiting for two hours and I cannot wait any longer.

A. have been
B. would been
C. would have been
D. should be
Answer: A

Q6. Select the most appropriate option to fill in the blanks
Srikant _____ his corporate job and joined the TASC force to ____ his country.

A. relinquish; serve
B. has relinquish; served
C. relinquished; serve
D. relinquished: served
Answer: C

Q7. For the four-sentence (S1 to S4) paragraph below, sentence S1 and S4 are given. From the options P,Q and R, choose the most appropriate sentences for S2 and S3 respectively.
S1. Although we commonly say that fire ants bite, fire ants actually sting.
S2.
S3.
S4. But the younger ones, whose stingers and skeletons are not fully developed, play dead.

P. Adult fire ants are aggressive and attack in swarms.
Q. They sting humans who disturb their nest.
R. Their nest consists of a loose mound with small cavities for ventilation.
A. RP
B. PR
C. QP
D. PQ
Answer: C

Q8. For the four sentence (s1 to S4) paragraph given below, sentences S1 and S4 are given. From the options P, Q and R, choose the appropriate sentences for S2 and S3 respectively.

S1. Matcha tea is a variant of the Japanese green tea.
S2.
S3.
S4. According to many sources, the main antioxidant in green tea, EGCG, boosts metaback.
P. One serving of Matcha tea has 10 times more antioxidants than one cup of brewer green tea.

Q. It is made from whole tea leaves and packed with antioxidants.
R. Green tea gets its signature green colour from chlorophyll, which is a powerful detoxifier.
A. RP
B. PQ
C. QP
D. RQ
Answer: C

Q9. Some sentences are missing from the given text. Choose from the list (A-C) the most appropriate for each gap (1-2) in the text. There is one extra sentence/part that you do not need to use.

Krupabai Satthianadhan was India's pioneering writer in English. ____1____ She also authored a novel Saguna--A story of Native Christian life. ___2___ Krupabai then went on to write another novel Kamala--A story of Hindu Life before her untimely death at the age of 31. This was published posthumously.

A. A native of the Bombay Presidency, she wrote articles for periodicals under the by-line An Indian Lady.
B. Queen Victoria is believed to have read this novel and been impressed.
C. Krupbai received a scholarship to study medicine in the Madras Medical College.

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

Q10. Which one of the following sentences uses formal Language?
A. Can I sit beside you?
B. I would be grateful if you consider my leave application.
C. Let's go to the park today.
D. Hey! What are you doing here?
Answer: B

Q11. The following sentence can be revised into one better sentence. Choose the sentence that is the best answer.

The principal met the students. The principal had won an award.

A. The principal met the students and they had won an award.
B. The principal who had won an award met the students.
C. The principal met the students who had won an award.
D. The principal met the students and won an award.
Answer: B

TCS Ninja Reasoning Ability Questions

Q1. Which is the WRONG term in the following series?

bfj, ddl, gao, iyq, lwt, ntv

A. ntv
B. lwt
C. gao
D. iyq
Answer: C

Q2. In each of the four pairs of letter-clusters, the letters in the second term are in a rearrange/transformed form of the letters from the first term in a particular pattern. In which two pairs, has the transformation been done the same way?
[A] FLOWER:EKNVDQ
[B] TONGUE:SNMFTD
[C] COMMON:XPNNPM
[D] ARTIST:TISTAR
[E] PRAYER:YREPRA

A. B and C
B. A andC
C. D and A
D. A and B
Answer: D

Q3. Given below is a question followed by two statements, I and II each containing some information. Decide which of the following statement(s) is/are sufficient to answer the question.

How is Q related to T?

Statements
1. M is the brother of N and N's mother T is the mother-in-law of P. P is the mother of Q who is the nephew of M.
2. Q is the sister of the daughter of P who is married to N, the son ofT.

A. Either statement I alone or statement II alone is sufficient.
B. Statement I alone is sufficient.
C. Both the statements I and II together are not sufficient.
D. Statement II alone is sufficient.
Answer: A

Q4. Given below is a question followed by three statements, I, II and III,each containing some information. Decide which of the following statement(s) is/are sufficient to answer the question.

How is B related to C?

Statements:
I. E is sister-in-law of A and wife of B.
II. C and B are males and C is unmarried.
III. D is grandfather of C and B is the only child of D.

A. If the data in statement I alone or in statement II alone or in statement III alone is sufficient to answer the question
B. If the data in statements II and III are sufficient to answer the question, while the data in statement I is not required to answer the question.
C. If the data in statements I and II are sufficient to answer the question, while the data in statement III is not required to answer the question
D. If the data in statements I and II are sufficient to answer the question, while the data in statement II is not required to answer the question.
Answer: B

Q5. In a certain code,

P + Q means Q is the brother of P.
P x Q means Q is the father of P.
P ÷ Q means Q is the sister of P.
P - Q means P is the mother of Q.

If K+LxM÷N-P, which of the following would definitely be NOT true?

A. K is the daughter of M.
B. P is the brother of K.
C. K is the nephew of N.
D. N is the aunt of K.
Answer: B

Q6. In a coded form:

A @ B means A is the mother of B.
A # B means A is the sister of B.
A $ B means A is the son of B.
A % B means A is the husband of B.

Which of the following expressions shows that "P is the brother-in-law of T?
A. P % Q # R $ S % T
B. P % Q @ R # S % T

C. Q $ P # R @ S % T
D. P $ Q @ R # S % T
Answer: D

Q7. P is the father of Q and brother of R whose son is the brother of T. U is the mother of Q and daughter-in-law of V. Z is the mother of R. W is the mother of T and is married to R.
How is V related to T?
A. Paternal grandmother
B. Paternal grandfather
C. Maternal grandfather
D. Uncle
Answer: B

Q8. A team of four is to be selected from batsmen K, L, M, N and four bowlers W, X, Y, Z such that there would be at least two batsmen in the team using the following criteria.

i. L and Y cannot be put together
ii. K and Z must be together
iii. X cannot go with M and vice versa
iv. W and N must go together
Which of the following four cannot be selected as a team?

A. KZLM
B. MWYN
C. LKXZ
D. LWMY
Answer: D

Q9. In a football ground, eight players G, H, I, J, K, L, M and N are standing in the following manner. N stands 15 m to the south of H. I and J form a straight line. M divides IJ, in 1:3 ratio. I divides HN, in 1:2 ratio. The distance between N and G and G and L are in the ratio of 1:3. G divides MK, in 2:1. J stands 10 m to the north of L. M is 5 m to the east of I. At what distance does K stand with respect to G?

A. 10 m
B. 5 m
C. 15 m
D. 20 m
Answer: B

Q10. Two statements are followed by three conclusions numbered I, II and III. You have to consider these statements to be TRUE, even if they seem to be at variance with commonly Known facts. Decide which of the given conclusions logically follow/s from the given statement.

Statements
.All pens are red

All red are pencils

Conclusions
I. All pens are pencils
II. All pencils are pens
III. At least some pencils are red

A. Only II follows.
B. Only I follow.
C. Only I and III follow.
D. Only III follows.
Answer: C

Q11. Three statements are followed by two conclusions numbered I and II. You have to consider these statements to be TRUE, even if they seem to be at variance with commonly Known facts. Decide which of the given conclusions logically follow/s from the given statement.

Statements
If All dogs are lion
No lion is a tiger
Some tigers are cat

Conclusions
I. All dogs being cat is a possibility
II. No dog is a tiger

A. If both conclusion I and II follow
B. If neither conclusion I nor II follow
C. If either conclusion I or conclusion II follow
D. If only conclusion II follow
Answer: D

Q12. Three statements are followed by two conclusions numbered I and II. You have to consider these statements to be TRUE, even if they seem to be at variance with commonly Known facts. Decide which of the given conclusions logically follow/s from the given statement.

Statements:
Only few Mops are Brooms.
No Bucket is Broom.
All Buckets are Brushes.

Conclusions:
I. All Mops are Brushes.
II. Some Buckets are Mops.

A. Only the conclusion I follow.
B. Only the conclusion II follow.
C. Either conclusion I and II follow.
D. Neither conclusion I nor II follow.
Answer: D

Q13. Three statements are followed by three conclusions numbered I, II and III. You have to consider these statements to be TRUE, even if they seem to be at variance with commonly Known facts. Decide which of the given conclusions logically follow/s from the given statement.

Statements:
1. All watches are clocks
2. Some clocks are wall hangings
3. No watch is a wrist band

Conclusions:
I. No wall hanging is a wrist band.
II. A wrist band may also be a clock.
III. Some watches are wall hangings.

A. Only I follows
B. Only II follows
C. Only I and II follow
D. Only II and III follow.
Answer: B

Q14. Mr. X has a certain number of gold coins, 24 silver coins and 36 copper coins. Value of gold coins is equal to value of copper coins. The value of silver coins is one third the value of gold coins. Total number of gold coins is half the number of total silver and gold copper coins together. If total value of the coins he has is 4200. What is the value of 1 copper coin?

A. 25
B. 50
C. 45
D. 60
Answer: B

Q15. In an election, 80% of the votes voted for three candidates, A, B and C. The voters constituted 80% of the population of the state. 10% of the votes cast were declared invalid. B won the election and twice the number of votes of what C got. A got 4000 votes more than C and 4000 votes less than B. The ratio of the

valid votes cast by male and female voters was 3:2. The number of valid female votes in favor of A was 2000 more than that for B and 1600 more than that for C.

What was the population of the state?

A. 62,500
B. 45,000
C. 52,000
D. 48,000
Answer: C

TCS Ninja Programming Logic Questions

Q1. What is the output of the following pseudocode?

```
FUNCTION fun()
INTEGER x,y,z;
x=2; y=4; z=5
z+= x^y&z
print z ;
END FUNCTION
```

A. 12
B. 11
C. 4
D. 7
Answer: B

Q2. Which of the following data structures is used in DFS?
A. Stack
B. Link list
C. Array
D. Queue
Answer: A

Q3. Match the following:

1. Trivial Graph	a. Any number of vertices but no edge
2. Null Graph	b. Multiple edges with self-loop
3. Pseudo graph	c. Each edge is labelled with a value
4. Weighted graph	d. Only one vertex and no edge

A. 1-c, 2-a, 3-b, 4-d
B. 1-b, 2-c, 3-d, 4-a
C. 1-d, 2-a, 3-b, 4-c
D. 1-a, 2-b, 3-c, 4-d
Answer: C

Q4. Based on what conditions, will the statement C execute?

```
if(condition 1)
{
```

```
        if (condition 2)
        {//
           Statement A
         }
         else
         if (condition 3)
         {
            // Statement B
          }
          else
          {
             // Statement C
           }
           else
           if (condition 4)
           {// Statement D}
           else
           {
              // Statement E
            }
}
```

A. NOT(Condition 1) AND NOT(Condition 4)
B. Condition 1 AND NOT(Condition 2) AND NOT(Condition 3)
C. Only Condition 3
D. Condition 2 AND Condition 3
Answer: B

Q5. Which among the following options is a compiler optimisation technique that splits any problematic first (or last) few iterations from the loop and performs.
A. Loop inversion
B. Loop unrolling
C. Loop peeling
D. Loop correcting
Answer: C

Q6. Mark the correct statement regarding the pivot in quick sort algorithm.
A. It must be a last element
B. It must be a first element
C. It may first, last or any random element
D. It must be first or last element.
Answer: C

Q7.

```
import java.io.*;
import java.lang.*;
import java.util.*;
class One{
   public void travel_greece()
   {
     int miles = 6000;
   }
}
class Two extends One {
    public void print_for() {System.out.println("Greece")
}
public class Main {
    Public static void main(String[] argos)
    {
      Two gr = new Two();
      gr.travel_greece();
      gr.print_for();
          }
}
```

Answer: Greece

Q8. What is the output of the below code snippet?

```
#include <stdio.h>
float foo(int i);
int main()
{
float x;
  x = foo(10);
  printf("%0.2f\t", x);
}
float foo(int i)
{
   float j = 5;
   j = j / i;
  printf("%0.3f ", j);
  return j;
}
```

Answer: 0.500 0.50

Q9.

#define VAR_A 4
#define VAR_B 4
#define ALL_VAR VAR_A + VAR_B
Consider the above macros and evaluate the result of the following.

Res=ALL_VAR * ALL_VAR
A. 8
B. 64
C. 24
D. 16

Answer: B

TCS Ninja Hands-on Coding Questions

Q1. A carpet manufacturing industry has newly ventured into the carpet installation business. All the carpets manufactured are large squares in shape. To install, each carpet has to be cut into shapes of squares or rectangles. The number of slits to be made is given as N.
The task is to find the maximum number of equal squares or rectangles that can be achieved using N slits.

Note:

The square carpet can be cut only using horizontal or vertical slits.
Cuttings are done on a single carpet which should be rolled out completely i.e. no folding or stacking is allowed.
Squares or rectangles cut should be equal size.

Example 1:

Input:

4 → Value of N(No. of cuts)

Output:

9 → maximum number of equal squares or rectangles

Explanation:

Solution 2

Maximum number of squares/rectangles that can be obtained with N=4 is 9(Solution 1)

Hence, output is 9

Example 2:

Input:

1 → Value of N(No. of teams)

Output:

2 → maximum number of equal squares or rectangles

Code Solution:

```
#include <bits/stdc++.h>
using namespace std;
int findMaximumPieces(int n)
{
   int x = n / 2;
   return ((x + 1) * (n - x + 1));
}
int main()
{
   int n;
   cin>>n;
   cout <<findMaximumPieces(n);
   return 0;
}
```

Q2. A family is about to break their piggy bank to use the money for different purposes. The piggy bank here represents an array (arr[]) consisting of N coins. The family has to split the coins of piggy bank into smaller stack (sub-array) of coins such that the sum of the difference between the maximum value and the minimum value of the coins for all the stacks (sub-arrays) is maximum.
Note: Each value of the array can be used only once that is only in one subarray.

Constraints:

1 <= N <= 500
1 <=arr[i] <= 100

Example 1:

Input:

5 → Value of N
{8,1,7,9,2} → arr[] elements from arr[0] to arr [N-1],
Where each element is separated by new line.

Output:

14

Explanation:

Let us break the array elements into following subarrays:
1. (8,1) → Max:8 Min:1
2. (7,9,2) → Max:9 Min:2
So, the difference between the maximum and minimum elements in each subarrays is
1. 8-1=7
2.9-2=7

Now, the sum of the differences of subarray is:
7+7=14
Hence, output is 14.

Example 2:
Input:
5 → Value of N
{1,2,1,0,5} → arr[], elements from arr[0] to arr [N-1],
where each elements is separated by a new line.

Output:
6

Explanation:
Let us break the array elements into following subarrays:
1. (1,2,1) → max:2, min:1
2. (0,5) → max:5, min:0

So, the difference between the max and min elements in each subarray is
1. 2-1 = 1
2. 5-0 = 5
Now, the sum of the differences of subarraya is:
1+5 = 6
Hence, output is 6.

The input format for testing
The candidate has to write the code to accept 2 inputs.
First input - Accept value for N(positive integer number)
Second input - Accept N number of values (arr[]), where each value is separated by a new line.

Code solution:
```
#include<iostream>
using namespace std;
int main()
{
   int n, sum = 0;
   cin >> n;
   int arr[n];
```

```
    for(int i = 0; i < n; i++)
    {
        cin >> arr[i];
    }
    for(int i = 0; i < n; i++)
    {
        for(int j = i+1; j < n; j++)
        {
            if(arr[i] < arr[j])
            {
                int temp = arr[i];
                arr[i] = arr[j];
                arr[j] = temp;
            }
        }
    }
    for(int i = 0; i < n/2; i++)
    {
        sum = sum+(arr[i]-arr[n-i-1]);
    }
    cout << sum;
}
```