FACE Prep

The TCS NQT kicked off on 24th Oct, 2020 with the first slot happening for students from 8 am to 11 am. This document details the Slot Analysis as well as Answers to Questions that students recollected post the test.

Disclaimer:
The questions showcased in this document have been recreated through memory, thanks to test-takers who recalled the questions post their test. Please use this document as an indicative preparation tool, rather than an exact replica of questions that appeared 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.

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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

Verbal Ability:

- Reading comprehension
- Sentence correction
- Sentence completion

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

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- 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

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.
- The key talking point of the 8 am slot was most test-takers not being able to complete the test – specifically getting an error in the link post starting/ while starting the test. While some test-takers were able to finish the test post re-trying to launch the test, several others were not able to. Upon taking these to TCS, a TCS rep has officially told FACE Prep that TCS is working on these issues and the affected students would be getting a resolution soon. If you face such issues in your slot, please be warned not to panic. Please report the issue in the live-chat of the test platform and wait for a resolution from TCS.
- 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.

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Questions with Answers:

Numerical Ability

Q1. A man has to travel 50 km in two hours. He could cover 20 km in one hour, and then had to stop for 10 minutes for refueling. By what factor should be increase his speed with reference to that during the first hour so as to be able to complete the journey as per schedule?
   A. 1.2
   B. 1.8
   C. 2.4
   D. 1.5

Answer: Option B

Q2. If n is an integer such that 1nn352 is a six-digit number exactly divisible by 24, what will be the sum of the possible values of n?
   A. 15
   B. 27
   C. 9
   D. 21

Answer: Option A

Q3. The diameter of a pizza is 30 cm. What is the area (in square cm) of the upper surface of a sector of the pizza whose arc length is 8 cm?
   A. 120 * pi
   B. 60
   C. 60 * pi
   D. 120

Answer: Option B

Q4. What is the mean proportional (MP) between the MPs of (2/7 & 32/343) and (2 & 1/5000)?

   A. 3/35
   B. 4/35
   C. 2/35
   D. 2/175

Answer: Option C

Q5. 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

Q6. A sum of Rs.30000 invested in a scheme where the interest gets compounded annually and grows to Rs. 51840 in three years. How much interest (in Rs.) would have got accrued in six months in the same scheme had the interest been compounded quarterly?

    A. 3024
    B. 3075
    C. 3126
    D. 2975

Answer: Option B

Q7. How much percentage is (0.025% of 240% of 1.5) of 0.9?
    A. 0.01
    B. 10
    C. 0.1
    D. 1

Answer: Option C

Q8. If the positive square root of $((90^{0.5})+(80^{0.5}))$ is multiplied by $(2^{0.5} - 1)$, and the product is raised to the power of four, the result would be:
    A. 1600
    B. 11520000
    C. 100
    D. 10

Answer: Option D

Q9. What is the mean deviation of the data: 8,9,12,15,16,20,24,30,32,34?
    A. 8
    B. 10.2
    C. 0
    D. 9.2

Answer: Option A

Q10. An item was sold at a profit of 12% after giving a discount of 12.5% on the List Price. What would be the gain or loss percentage if a discount of 25% is given on the List Price?

    A. 2.5% loss
    B. 2.5% gain
    C. 4% gain
    D. 4% loss

Answer: Option D

Q11. What is the diameter in cm of a solid right circular cylinder whose height is 6 cm and the area of the curved surface is five times the combined area of the two flat surfaces?
    A. 3
    B. 2.4
    C. 1.2
    D. 0.9

Answer: Option B

Q12. The Variation in temperature throughout the day in a desert town was studied on the basis of the records of the maximum and minimum temperatures which was 36 and 8 degree centigrade respectively. What was the standard deviation in degree centigrade?

    A. 28
    B. 22
    C. 14
    D. 12

Answer: Option A

Q13. The Collection of numbers which comprise the data given below is arranged in ascending order. (3,7,9,N - 1,15,18,19,20). If the median of the data is 12.5, what is the value of N?

    A. 11
    B. 12
    C. 11.5
    D. 10.5

Answer: Option A

Q14.A file of cadets consisting of ten rows and five columns measures 420m in length along the direction of their marching. How much time(in hours and minutes) would it take to march for a stretch of 3 km, if the stride of the each cadet is 80cm and he takes 57 strides per minute?

A. 1 hr 15 min
B. 1 hr 24 min
C. 1hr 10 min
D. 1 hr 20 min

Answer: Option A

Q15.96 men were engaged for a project of constructing a railway track of the length of 18km in four weeks. After one week it was observed that the work of 4km was completed. How many additional men should be engaged for timely completion of the project?

A. 12
B. 16
C. 14
D. 15

Answer: Option B

Q16. X is four times as efficient as Y in respect of doing a particular work. Working together they complete the work in 16 days.In how many days Y, working alone,will be able to do half the work?

A.40
B.80
C.60
D.20
Answer: Option A

Q17. In a competitive exam, 5 marks are awarded for every correct answer and for every wrong answer, 2 marks are deducted. Sathwik and 32 marks in this examination. If 4 marks has been awarded for each correct answer and 1 mark had been deducted for each incorrect answer, Sathwik would have scored 34 marks. If Sathwik attempted all the questions, how many questions were there in the test?
A. 20
B. 14
C. 12
D. 26

Answer: Option D

Q18. A sum invested on simple interest grows to Rs 22500 and Rs 25500 in seven and nine years respectively. What is the rate percentage of the interest?
- A. 7.5
- B. 9.6
- C. 13.5
- D. 12.5

Answer: Option D

Q19. What is the sum (in Rs) which, when divided among X, Y, Z in the proportion 3 : 5 : 7 provided Rs. 8000 more to Z than what it would have done to him when the proportion is 11 : 15 : 19?
- A. 120000
- B. 180000
- C. 135000
- D. 175000

Answer: Option B

Q20. What is the value of $(0.0000128)^{1/7}$?
- A. 0.2
- B. 5
- C. 2
- D. 0.5

Answer: Option B

Q21. After purchasing two copies of the same book, X sold them respectively at 0.8 and 1.4 times their cost prices. What was the percentage gain earned or loss incurred by X?
- A. 5% gain
- B. 10% gain
- C. 5% loss
- D. 10% loss

Answer: Option B

Q22. Two vessels X and Y of capacities one and two litres respectively are completely filled with mixtures of two chemicals A and B. The ratio by volume of the chemicals A and B in X and Y are 3:2 and 4:5 respectively. The contents of A and B are mixed and the combination is kept in a vessel C of capacity of four litres. How many litres of Chemical A should be added to the combination so as to make the ratio of A to B equal to 1:1?

A. 1/135
B. 1/67
C. 1/68
D. 1/270

Answer: Option C

Q23. The marks scored by a student out of 100 in English and Mathematics at four consecutive monthly tests held in 2019 are presented through a Bar Graph shown below. In each case the marks is a multiple of five.
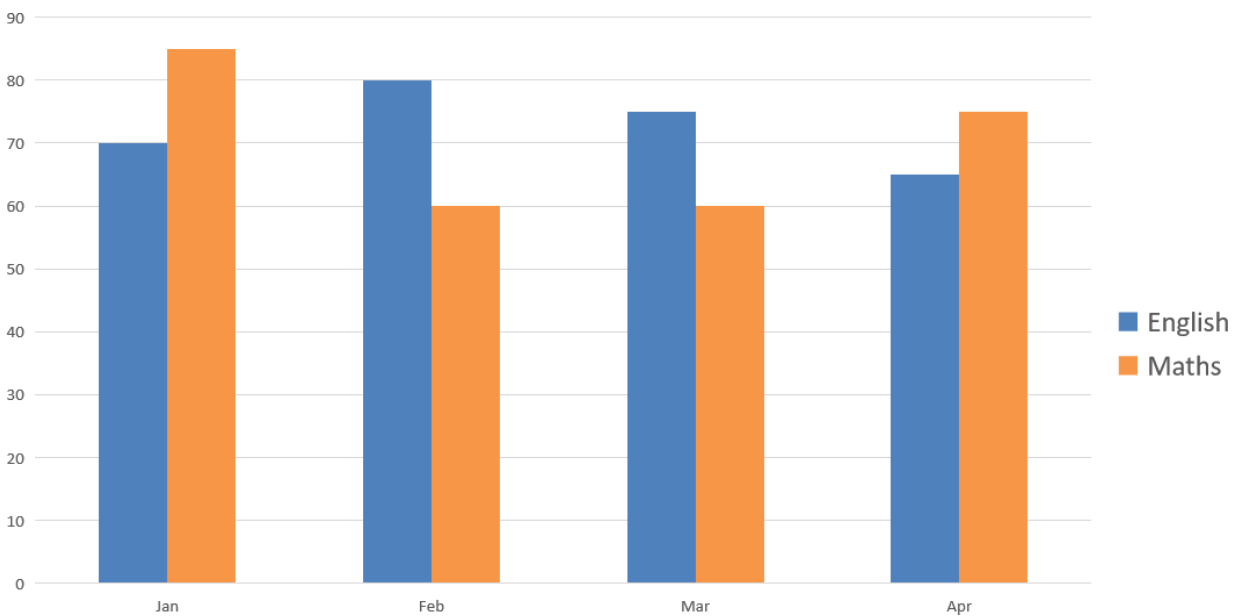
In which month is the difference of marks scored in the two subjects are highest?
A. Apr
B. Mar
C. Feb
D. Jan

Answer: Option C

Q24. The mean of set data is 5.What will be the mean if 10 is subtracted from each data.

A. 5
B. 10
C. -5
D. -15

Answer: Option C

Q25. If $5^X 3^Y = 225 \times 405$, find the value of X^{2Y-3X}
  A. 81
  B. 27
  C. 125
  D. 25

Answer: Option B

Verbal Ability

Q1s to 2: Read the Passage given below and answer questions

It used to be the American shopper that exemplified the state of the world economy. The focus now should be on the person on the other side of the till. America's retail industry is huge: it employs 15.9 Mn workers, who represent one in nine American jobs. It is also undergoing wrenching change, as e-commerce eats into sales. There is no more pressing test of society's ability to cope with technology's impact on work.

That impact is already visible. For all the benefits that online retailing brings to consumers, it is causing immense pain to offline rivals. Last year 4,000 American stores closed; this year more than twice that number may shutter. Standard & Poor's, a rating agency, expects retail defaults this year to outnumber those in 2009, at the height of the global recession. Some formats— discount stores, groceries, high-end malls—will continue to thrive. But many will shrink. The industry has shed 50,000 net jobs since January. Department stores may need to close more than 800 stores to reach the productivity levels of 2006. Many outlets are looking for ways to cut labour costs by embracing automation.

Q1. This passage is mainly about _____
  A. Those who regularly do their shipping online.
  B. Those who run large businesses and retail stores.
  C. Those who run smaller retail shops.
  D. Those who cannot afford to buy anything in large retail shops.

Answer: Option C

Q2. What is the significant measure that stores are trying to adopt?

  A. Diversifying
  B. Shutdown business

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C. Merging
D. Automation

Answer: Option D

Q3..Governments have been promising the eradication of child labour in high risk Industries in India for many years. However almost 100 million children are still at work instead of going to school, and around 10 million are working in (1)_____Industries. India has the biggest child population of 380million in the world; plus the (2)_____number of children who are forced to earn a living.

Blank 1. A) honorary B)hazardous C)handicraft D)hardware

Blank 2. A)largest   B) lowest   C)latest   D)loudest

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

Answer: 1 - B, 2 - A

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: Once upon a time an ambassador came to see the king of Sparta on some official business
S-2:
S-3:
S-4:But he found nothing of that kind

P.The ambassador knew that the king of sparta was also really the ruler of entire Greece and so he expected to see massive walls around the city for purpose of defence
Q:You are looking at the walls___ten thousand men, and every man is a brick
R.After their work was over the king took his visitor on a sight-seeing tour of the capital city

A.R P
B.RQ
C.QP
D.PQ

Answer: Option D

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Qs 5 to 9: Read the passage given below and answer questions

Twinkling lights are just visible behind screens where staff are putting the finishing touches to this year's Christmas displays, but in other parts of the shop, the lights are still off. John Lewis's flagship store in Oxford Street, central London, is bearing the scars of the pandemic.

A restaurant and cafe are closed and there are more staff than customers on the furnishings floor. The fashion floor is also a depressing sight, with tags flagging big discounts on racks of unwanted dresses and office wear. Last week it emerged John Lewis had applied for planning permission to convert entire floors of this shop into office space. It's not hard to see why.

John Lewis, with its employee ownership and reputation for stellar customer service, still holds a special place in shoppers' hearts. But while sister chain Waitrose, along with other supermarkets, has thrived in the pandemic, results published last week show the department store chain is in deep trouble.Huge changes in shopper behaviour, which have been accelerated by coronavirus, mean the John Lewis website is now responsible for 60% of the chain's sales – up from 30% pre-Covid. This tilt towards the web means the department stores, as properties, are now deemed to be worth nearly £500 Mn less than before – a reassessment in last week's results that sent the group crashing £635 Mn into the red in the first half of its financial year.

Q5. Which one of the following is NOT a scar of the pandemic?
   A. More floors converted to office space
   B. Putting finishing touches to festive decorations
   C. Lights off in parts of the shop
   D. Fewer customers and more staff

Answer: Option B

Q6. Which business will NOT continue to prosper?
   A. Department stores
   B. Discount stores
   C. High-end Malls
   D. Grocery Stores

Answer: Option A

Q7. What unpleasant announcement will the chairman have to make to the employees?
   A. That they will have a pay cut
   B. That they will not get their annual bonus
   C. That they will not get their salaries
   D. That they will lose their jobs

Answer: Option B

Q8. How do we know that John Lewis had been in prosperous business prior to the COVID pandemic?
- A. Their website now handles 60% of their business
- B. They paid an annual bonus for sixty-seven years
- C. They have a new Lady Chairman
- D. They were known for their customer services

Answer: Option B

Q9. Which one of the following expressions from the passage means losing money?
- A. Tilt towards
- B. On racks
- C. Sent crashing
- D. In the red

Answer: Option D

Q10. Aisha had been very successful managing her team in Edinburgh and was asked by the company to lead a remote team for an important two-year project. Keen to demonstrate her leadership abilities to the head office, Aisha got her team members together for a remote meeting. But right from that first meeting, she realised that this was going to be a different challenge. (1)_____Lucia kept asking about really specific details, while Aisha was hoping to use the meeting to get to know the team members and identify priorities. Archie and Lucia kept accidentally talking at the same time, and when they didn't speak, there was an uncomfortable silence. Valentina hardly said a word. (2)_____Without these visual clues, Aisha had no idea whether people were interested, lost, confused or bored.

- A. No one had their cameras on, so there was none of the usual communication through body language or facial expressions
- B. Compared to face to face meeting the remote team is not preferred by all the managers
- C. For a start,Archie was late for the meeting by about 15 minutes because of 'technical problems'.

 1 - A, 2- C
 1- B, 2- A
 1- A, 2- B
 1- C, 2-A

Answer: 1- C, 2-A

Q11. Fill in the blanks with the 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 savel begin to slip
   C. for saving/ began to slip
   D. to save/ began slipping

Answer: Option A

Q12. One part of the sentence below may contain may error. Identify the part. If there is no error, choose 'No error'. Everyday life have become more complicated with the advancement in mobile technology.

   A. More complicated with the
   B. Everyday life have become
   C. No error
   D. Advancement in mobile technology

Answer: Option B

Q13. 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. Gandhi does not reject machinery as such.
S-2.
S-3.
S-4. What he objects to is the craze for machinery, not machinery as such

P.He says that today, machinery merely helps a few to ride on the back of millions.
Q. And adds that the spinning wheel is a machinery, a little tooth-pick is a machine.
R. He observes,"How can I be against machinery when I know that even this body is a most delicate piece of machinery?"

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

Answer: Option B

Q14. The following three sentences can be revised into one better sentence. Choose the sentence that is the best revision:
I was at the fair. I got lost. I got scared.

A. I am scared after I am lost at the fair.
B. I went to fair and got scared as I was lost.
C. I am lost at the fair so I am too scared.
D. I got lost at the fair and was scared.

Answer: Option D

Q15. Which of the following sentences does NOT use informal language?
A. Did you locate our office quite easily?
B. You will be working with different managers during your training.
C. We shall endeavour to inform you of the position in two weeks time.
D. Is there anything else you want to ask me?

Answer: Option B

Q16. The lady _____ purse was lost lodged a complaint at the police station.

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

Answer: Option B

Q17. You are going to read a text about a man in a photograph. 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.

It was the first photograph that i had ever seen, and its fascinated me. I still remember holding it at every angle in order to catch the flickering light from the oil lamp on the dresser. (1)_____ I had never met him but I felt that I knew him. (2)_____ I moved the photograph so that the shadow lay perfectly around his hollow cheeks. How different he looked!
A. The man in the photograph was unsmiling, but his eyes were kind.
B. I would tell him how wonderful he looked with the shadow that I had seen across his photograph, and I would most carefully suggest that he grew whiskers.
C. One evening when I was looking at the photograph, as I always did before I went to sleep, I noticed a shadow across the man's thin face.
A. (1)-A, (2)-C
B. (1)-B, (2)-A
C. (1)-C, (2)-B
D. (1)-C, (2)-A

Answer: (1)-A, (2)-C

Q18. Henry looks carefully into the telescope which let shim see far,far away, as far away as the distant nebulae on the fair edges of the milky way.Henry is an (1)_____.He looks at the sky and at stars in particular.Even though he spends much of his time looking at detailed computer reports,which are just lists and the lists are numbers, his (2)_____thing about his job is looking through the telescope.And today he is very excited. He isn't sure yet, but he thinks he has seen a dense cloud which might be the beginning of a new star.
Blank 1. A.astrologer B.astrologist C.astronomer D. astronaut
Blank 2. A. favouring B. pleasant C.pleasing D.favourite

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

Answer: 1-C,2-D

Q19. One part of the sentence below may contain an error. Identify the part.If there is no error,choose 'No error'.
The board announced that the decision to reduce the syllabus is yet to be approved by the competent authority.
   A. Is yet to be approved by the competent authority
   B. No error
   C. The decision is to reduce the syllabus
   D. The board announced that

Answer: Option B

Q20. The final report on the project was_____into three parts

   A. Broken up
   B. Broken off
   C. Broken away
   D. Broken out

Answer: Option A

Reasoning Ability

Q1. In each of the five pairs of the letter-clusters, the letters in the second term is a rearranged/ transformed form of the letters in the first term in a particular pattern. In which two pairs has the transformation been done the same way?

1) MASON : AMNOS
2) PARTY : APRYT
3) FAULT : AFTLU
4) LODGE : DOLEG
5) CARGO : ACOGS

A. 2) and 3)
B. 3) and 4)
C. 1) and 3)
D. 4) and 5)

Answer: Option C

Q2. There are five rods K, L, M, N and O. The weight of L is equal to the weights of K and M taken together. The weight of M is twice the weight of K. The weight of N is three times the weight of M. If the weight of N is 90 kg, what will be the weight of O?

A. 120 kg
B. 60 kg
C. 105 kg
D. 90 kg

Answer: Option C

Q3. The following are the criteria of selecting a Software Engineer for an IT company.

The candidates must:
   a. Have completed BCA with more than 70% marks
   b. Be more than 25 years and less than 30 years of age as on June 1, 2020
   c. Have secured more than 75% marks in the interview and more than 60% marks in the written test.

However, if the candidate fulfills all of the above criteria except:
   d. At b, but has completed MCA with at least 75% marks, his/her case is to be referred to the Managing Director.
   e. At c, but has secured more than 85% marks in BCA, his/ her case is to be referred to the Chief Executive Officer.

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Keith completed BCA and MCA with 76% and 72% marks respectively. He has completed 27 years of age in the year 2019. He has secured 65% marks in the written test and 78% marks in the interview. What decision would be taken in his case?

    A. His case is to be referred to the Managing Director
    B. He would not be selected
    C. His case is to be referred to the Chief Executive Officer.
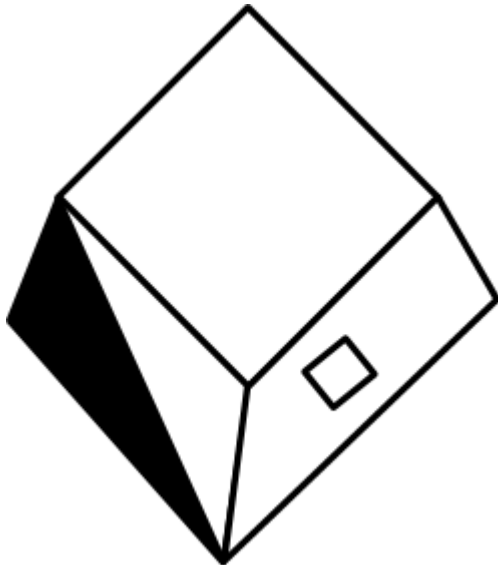   D. He would be selected.

Answer: Option D

Q4. The figure marked 'X' is folded to form a box. Four possible boxes A, B, C and D are given below some of which can be formed and some cannot be formed. Choose from the alternatives the boxes that can be formed.

X

1
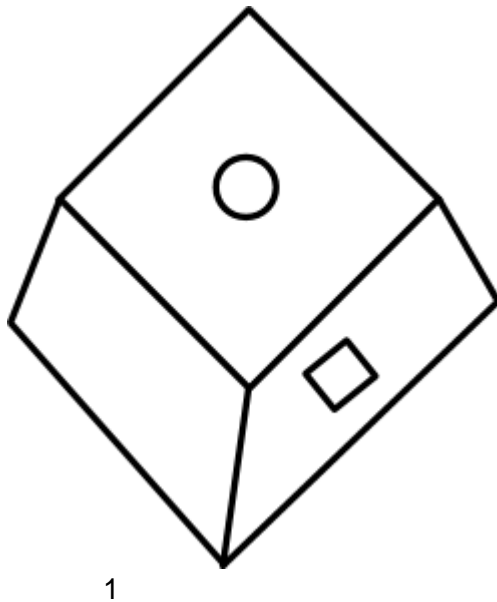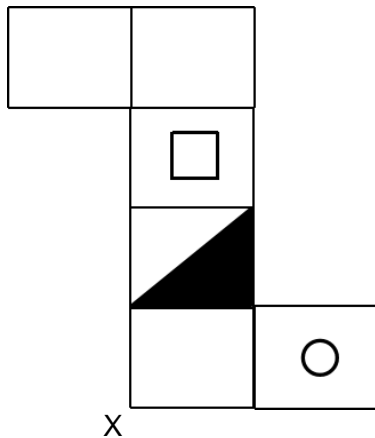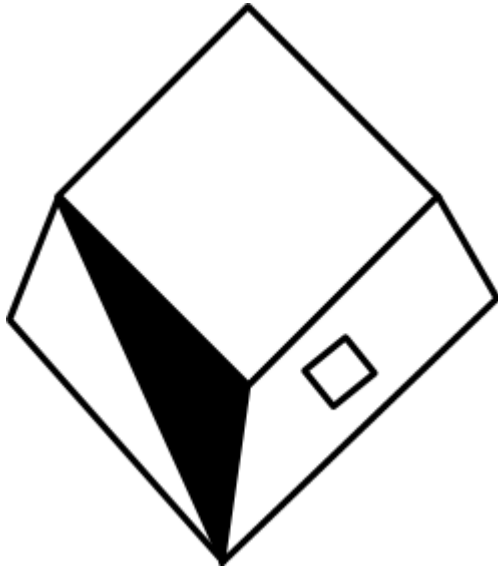
2

3
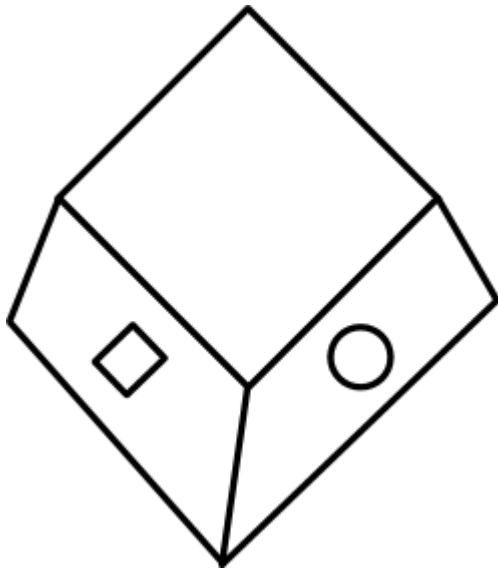
4

A. 1, 3 and 4 only
B. 2 and 3 only
C. 1 and 2 only
D. 2 and 4 only

Answer: Option A

Q5. Four friends A, B, C and D have one of the four professions i.e. Doctor, Architect, Engineer and Lawyer. Each friend belongs to one of the four different cities Chandigarh, Indore, Lucknow and Pune. A is not a lawyer or engineer. The doctor is from Lucknow. D is an architect. The lawyer is from Pune. The engineer is neither from Chandigarh nor from Pune. D is not from Pune, C is not from Indore. Which of the following statements is true about B?

A. B is a lawyer and belongs to Pune
B. B is a doctor and belongs to Pune
C. B is a lawyer and belongs to Chandigarh
D. B is a doctor and belongs to Chandigarh

Answer: Option A

Q6. Which is the wrong term in the following series?
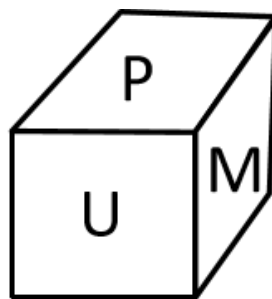CMQ, FPT, JTX, OYC, UFI
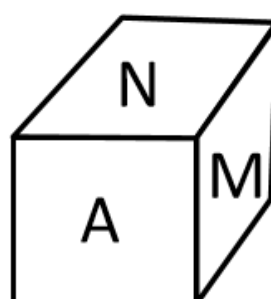
A. FPT
B. OYC

C. JTX
D. UFI

Answer: Option D

Q7. Which of the following patterns of the boxes can be formed when the sheet given below is folded? (if the latters are shown to indicate the sides only).
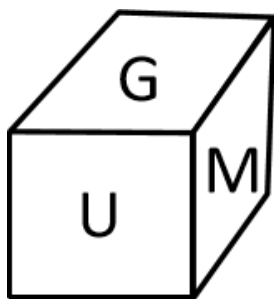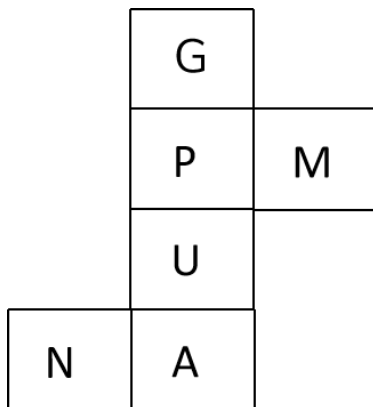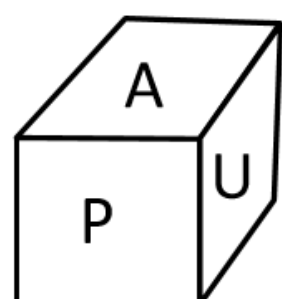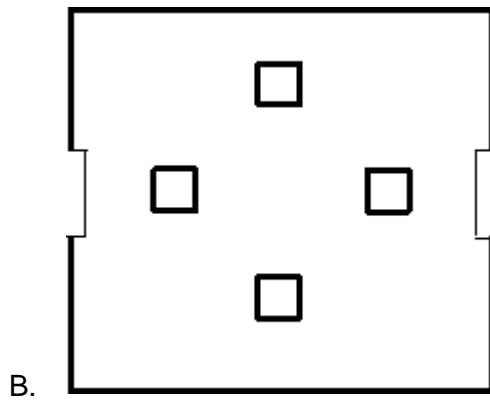

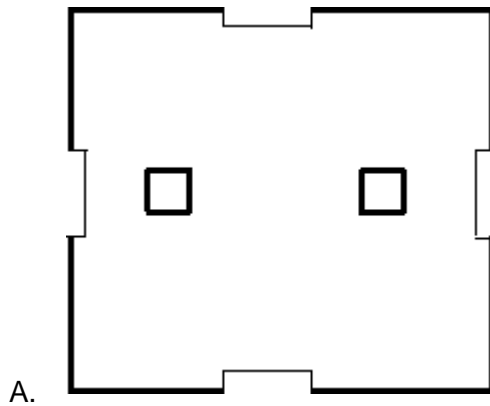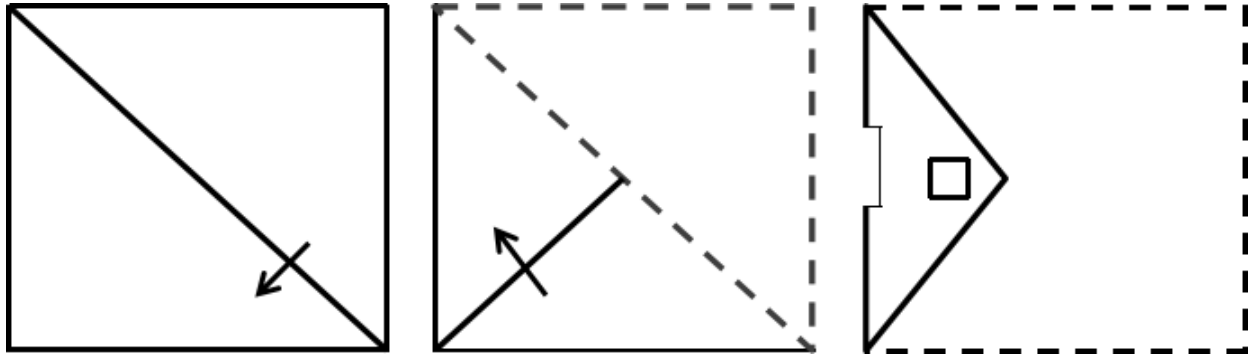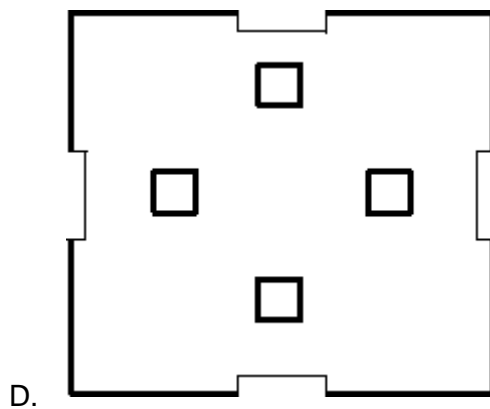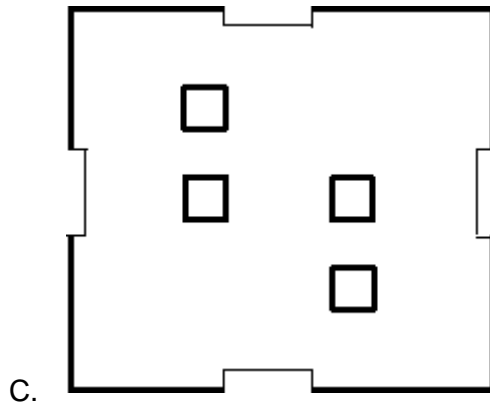A. Only 1 and 2
B. Only 2 and 3
C. Only 2
D. Only 1, 2 and 4

Answer: Option C

Q8. A paper is folded and cut as shown below. How will it appear when unfolded?

A.

B.

C.

D.

Answer: Option D

Q9. 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 Corona warriors but are not males?
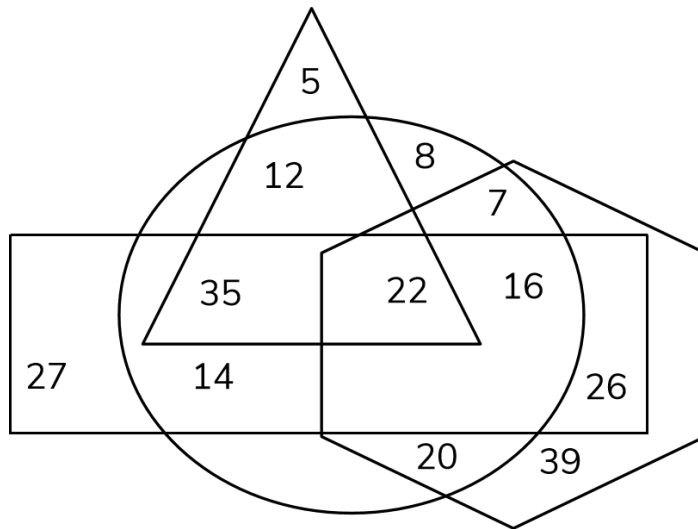
A. 23
B. 16
C. 14
D. 7

Answer: Option B

Q10. In a certain code, **A % B** means 'A is the brother of B', **A & B** means 'A is the mother of B', **A @ B** means 'A is the daughter of B', **A $ B** means 'A is the father of B' and **A # B** means 'A is the sister of B'.

If **K $ Z % U & H # N @ T**, how is T related to U?

A. Sister
B. Husband
C. Wife
D. Brother

Answer: Option B

Q11 to 12. The number of employees working in six different departments of two companies A and B are given below. Study the given data and answer the questions that follow.

Company A	
Department	**Number of Employees**
Marketing	256
HR	72
Production	504
Accounts	68
Operations	256
Planning	46
Total	**1202**

Company B	
Department	**Number of Employees**
Marketing	524
HR	108
Production	736
Accounts	122
Operations	146
Planning	58
Total	**1694**

Q11. If 30 employees of the Planning department quit Company B and join the Planning department of Company A, then what is the percentage of employees in the Planning department in the total employees in Company A?

- A. 5.34%
- B. 6.16%
- C. 6.32%
- D. 4.48%

Answer: Option B

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Q12. What is the percentage difference between the employees working the Production department of Company A and Company B?

    A. 2.27%
    B. 1.15%
    C. 1.52%
   D. 3.21%

Answer: Option C

Q13. Nehal, Iqbal, Ronit, Malin 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. Malini
    B. Nehal or Malini
    C. Nehal
    D. Cannot be determined

Answer: Option A

Q14. Select the figure that will replace the question mark in the following figure series.

A.

B.

C.

D.
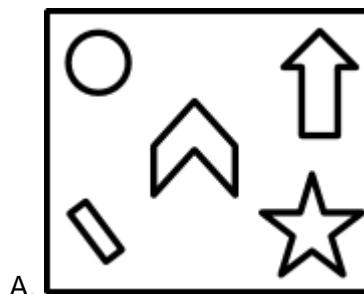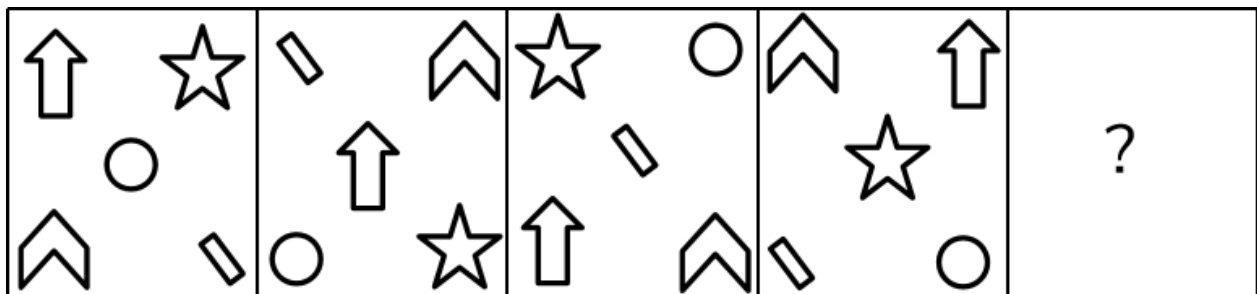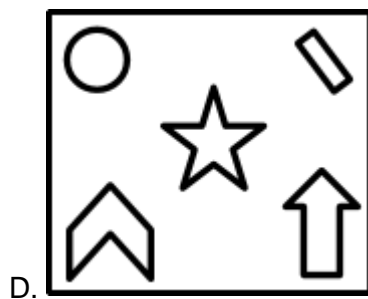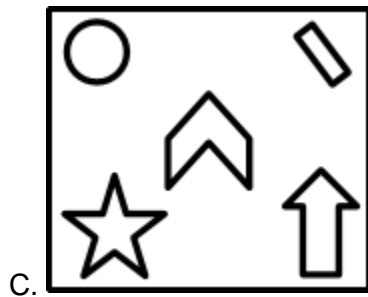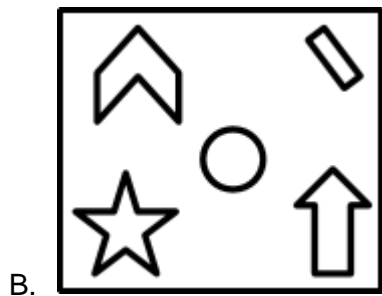
Answer: Option C

Q15. Two statements are given followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:
All animals are plants.
All plants are shrubs.

Conclusions:
  I.   Some shrubs are plants
 II.   Some animals are not shrubs
III.   All animals are shrubs

    A. None of the conclusions follow
    B. Only conclusions I and III follow

C. Only conclusion II follows
D. Only conclusions I and II follow

Answer: Option B

Q16. Given below is a question followed by two statements I and II, each containing some information. Decide which of the statements are sufficient to answer the question that follows.

How many Rs. would Shalini need to spend to buy 11 pencils and 14 pens?

  I.   Shalini spent an amount of Rs.201 to buy 15 pencils and 12 pens.
  II.   Shalini spent an amount of Rs.121 to buy 7 pencils and 9 pens.

A. The combination of both the statements I and II are not sufficient.
B. Statement II alone is sufficient.
C. Statement I alone is sufficient.
D. The combination of both the statements I and II are necessary.

Answer: Option D

Q17. Choose the best option.

Statement: Air quality has been polluted due to the increasing number of two-wheelers and four- wheelers.

Courses of action:
  I.   There should be a complete ban on the sale of two-wheelers at least for the next 5 years.
  II.   Monitoring should take place to ensure that the vehicle's owners get their vehicles checked and certified for pollution-control.
 III.   Four wheelers cause more pollution, hence four-wheelers alone can be banned from running on the roads.

A. None of the options follow
B. Only II follows
C. Only III follows
D. Only I follows

Answer: Option B

Q18. In a certain code, K * N means K is the brother of N, K+N means K is the husband of N, K x N means K is the mother of N and K/N means K is the sister of N.

Which of the following expression means 'C is the daughter of Y'?

    A. Y + R x H / C * V
    B. Y + R x H * C / V
    C. Y x R + H * C / V
    D. Y + R x C * H / V

Answer: Option C

Q19. Five teachers P, Q, R, S and T teach a group of students in sequence between 9 am and 2 pm. Each teacher teaches for one hour. Q takes the first class. S teaches just after T. R teaches before P and T. Who takes the second class from 10 am to 11 am?

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

Answer: Option B

Q20. Given below is a question followed by two statements, I and II, each containing some information. Which of the following statements is/ are sufficient to answer the question?

How is A related to C?

Statements:
    I.   A is the wife of B and B is the brother of C.
    II.   C is the son of D.

    A. Both I and II together are not sufficient
    B. Statement I alone is sufficient
    C. Statement II alone is sufficient
    D. Both II and III together are sufficient

Answer: Option B

Q21. Given below is a question followed by two statements, II and II, each containing some information. Decide which of the statements are sufficient to answer the question.

Five friends A, B, C, D and E are sitting in a line facing North. Who is sitting exactly in the middle?

    I.   C is sitting between A and B. E is at the fourth place to the left of B.
   II.   E is sitting to the immediate left of D. C is to the immediate left of B.

    A. Statement II alone is sufficient.
    B. Statement I alone is sufficient.
    C. The combination of both the statements I and II are necessary.
    D. The combination of both the statements I and II are not sufficient.

Answer: Option B

Programming Logic

Q1.. Given here is a scenario. Consider the graph algorithm and answer the given question.

John wants to go to different locations of the city in which he is. He has listed all of them down.However he wants to visit one location before visiting some other location What application of graphs he uses to determine that location?

    A. DFS
    B. Dijkstra's
    C. BFS
    D. Topological Sorting

Answer: Option D

Q2. What will be the output?

```
public class main {

{

int $ = 5;
}
}
```

    A. Nothing will print
    B. Symbol not found error
    C. Runtime error
    D. Compile error

Answer: Option A

Q3. What will be printed if the below sample code is executed? Enter your answer only as a NUMERAl

```
class main
{
public static void main(string args[]}
{
        int i,j,x=0;
        for(i=0;i<5;i++)
                for(j=0;j<5;j++){
                        x=(i+j-1);
                        System.out.print(x);
                        break;
                }
}
System.out.print(x);
}
```

Answer: -101233

Q4..Which among the following is a server - based paradigm?

A.Request for information
B.Cloud computing
C.Total Cost of Ownership
D. Data Validation Routine

Q5. There are two integer numbers X and Y that are between 0 to 25. User stores the value under a 5 bit number. How many minimum bits are required to store the result of the below expression?

Res=3*(X-Y)
A.8
B.5
C.7
D.8 D.8

Answer: Option D

Explanation: If we perform X-Y the possible answers shall be from -75 to 75. In order to store this we need 8 bits.

Q6. Find Prefix and suffix for the below infix problem statement :

Infix Expression : 11 +20/5*(20-15)^6^5

A. Prefix Expression: 11 20 15 20 5 - ^^*6 5/+
   Postfix Expression: +20/11*5-20^^15 6 5

B. Prefix Expression: 11 20 5 20 15-6 5^^*/+
   Postfix Expression: +11/20 *5^^ -20 15 6 5

C. Prefix Expression: 11 20 5 20 15 - ^^^/+6 5
   Postfix Expression: +11/^^-20*5 20 15 6 5

D. Prefix Expression: +11/20*5^^-20 15 6 5
   Postfix Expression : 11 20 5 20 15 -6 5^^/+

Answer: Option D

Q7. Write the name of a library of functions which is used to perform arithmetic operations on BigInteger and BigDecimal.

Answer: import java.math.*;

Q8. When we declare constant pointer to integer, we CANNOT change:
   A. address in pointer variable
   B. changes are not permitted
   C. either address in pointer variable or value at that address
   D. Value pointed by the pointer

Answer: Option B

Q9. Which among the following is a server-based paradigm?
   A. Request for Information(RFI)
   B. Cloud Computing
   C. Total Cost Of Ownership(TCO)
   D. Data Validation Routine

Answer: Option B

Coding

Q1. Selection of MPCS exams include a fitness test which is conducted on ground.There will be a batch of 3 trainees,appearing for a running test on track for 3 rounds.

You need to record their oxygen level after every round.After trainees are finished with all rounds, calculate for each trainee his average oxygen level over the 3 rounds and select the one with the highest average oxygen level as the most fit trainee. If more than one trainee attains the same highest average level,they all need to be selected. Display the most fit trainee(or trainers) and the highest average oxygen level.

Note:
1.The oxygen value entered should not be accepted if it is not in the range between 1 and 100.
2.If the calculated maximum average oxygen value of the trainees is below 70 then declare the trainees as unfit with meaningful message as "All trainees are unfit"
3.Average oxygen values should be rounded

Example 1:

INPUT Values
95
92
95
92
90
92
90
92
90

OUTPUT Values
Trainee Number: 1
Trainee Number ;3

Note:Input should be 9 integer values representing oxygen levels entered in order as

Round 1:
Oxygen value of trainee 1
Oxygen value of trainee 2
Oxygen value of trainee 3

Round 2:
Oxygen value of trainee 1
Oxygen value of trainee 2
Oxygen value of trainee 3

Round 3:
Oxygen value of trainee 1

Oxygen value of trainee 2
Oxygen value of trainee 3

Oxygen must be in given format as in above example.For any wrong input final output should display "INVALID INPUT"

Solution in C++:

```cpp
1  #include<iostream>
2  #include<cmath>
3  using namespace std;
4  int main()
5  {
6      int i, x, T1 = 0, T2 = 0, T3 = 0, count = 1;
7      double A1, A2, A3;
8      while(count <= 9)
9      {
10         cin >> x;
11         if(x >= 1 && x <= 100)
12         {
13             if(count % 3 == 1)
14                 T1 = T1 + x;
15             else if(count % 3 == 2)
16                 T2 = T2 + x;
17             else
18                 T3 = T3 + x;
19             count++;
20         }
21         else
22             count++;
23     }
24     A1 = round(T1/3);
25     A2 = round(T2/3);
26     A3 = round(T3/3);
27     if(A1 <= 70 && A2 <= 70 && A3 <= 70) {
28         cout << "All trainees are unfit";
29         return 0;
30     }
31     if(A1 >= A2 && A1>= A3)
32         cout << "Trainee Number: 1"<< endl;
33     if(A2 >= A1 && A2 >= A3)
34         cout << "Trainee Number: 2"<< endl;
35     if(A3 >= A1 && A3 >= A2)
36         cout << "Trainee Number: 3" << endl;
37     return 0;
38 }
```

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Q2. There is jar full of candies for sale at a mall counter. JAr has the capacity N, that is JAR can contain maximum N Candies when JAR is full. At any point of time,JAR can have M number of candies where M<=N. Candies are served to the customers. JAR is never remaining empty as when last K candidates are left,JAR is refilled with new candidates in such a way that JAR gets full.

Write the code to implement above scenario.Display JAR at counter with available number of candies.

Input should be number of candies one customer orders at point of time. Update the JAR after every purchase and display JAR at counter.Output should give number of candies sold and updated number of candies in JAR. If input is more than number of candies in JAR,return "INVALID INPUT". Given,

N=10, Where N is number of candies available, K<=5,Where K is number of minimum candies that must be inside JAR ever.

Example1: (N=10,K=<5)
Input Value
3
Output Values:
Number of Candies Sold: 3
Number of Candies available:7

Solution in C++:

```cpp
1 #include<iostream>
2 using namespace std;
3 int main()
4 {
5     int N = 10, k;
6     cin >> k;
7
8     if(k <= 0)
9     {
10        cout << "INVALID INPUT" << endl;
11        cout << "NUMBER OF CANDIES AVAILABLE: "<< N<<endl;
12    }
13    else
14    {
15        cout << "NUMBER OF CANDIES SOLD:" << k <<endl;
16        cout << "NUMBER OF CANDIES AVAILABLE:"<< N-k << endl;
17    }
18 }
```

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