

This document details the Slot Analysis as well as Answers to Questions that students recollected post their TCS NQT(Slot 1) on 26<sup>th</sup> 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.

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## 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
  - Divisibility rule
  - LCM & HCF
- Time, Speed and Distance
- Ratio and Proportions
- Linear Equations
- Simple Interest and Compound Interest
- Percentages
- Profit and Loss
- Mixtures and Alligations
- 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
  - Phrasal verbs
  - Prepositions
  - Pronouns
- Knowledge of Formal/Informal language
- Sentence improvement
- Parajumbles

### 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

### **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
- Data types
- Pointers
- Abstract class in JAVA
- Files in C
- Software Testing – SDLC
- Input/Output

### **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.

## Questions with Answers:

### Numerical Ability

**Q1.** What is the value of  $1.59 \times 1.59 + 8.46 \times 0.53 + 9 \times 0.47 \times 0.47$  ?

- A. 9.025
- B. 6.25
- C. 9
- D. 4

**Answer:** Option C

**Q2.** For a grouped frequency distribution having eight classes, the upper class boundaries of the lowest and the highest classes are 10 and 66 respectively. What is the lower class boundary of the highest class?

- A. 57
- B. 60

- C. 58
- D. 59

**Answer:** Option B

**Q3.** What is the simplified value of:  $(7^2 + 24^2) / [20^2 - \frac{1}{2}(52^2 - 1) + 10\{(0.3)^2 + (0.1)^2\} - 2 \times 7]^2$ ?

- A. 1/5
- B. 1/225
- C. 1/125
- D. 1/25

**Answer:** Option B

**Q4.** If  $\frac{\sqrt{7} + \sqrt{5}}{\sqrt{7} - \sqrt{5}} = a - b\sqrt{35}$ , then the value  $a - 2b$  is

- A. 4
- B. 5
- C. 8
- D. 7

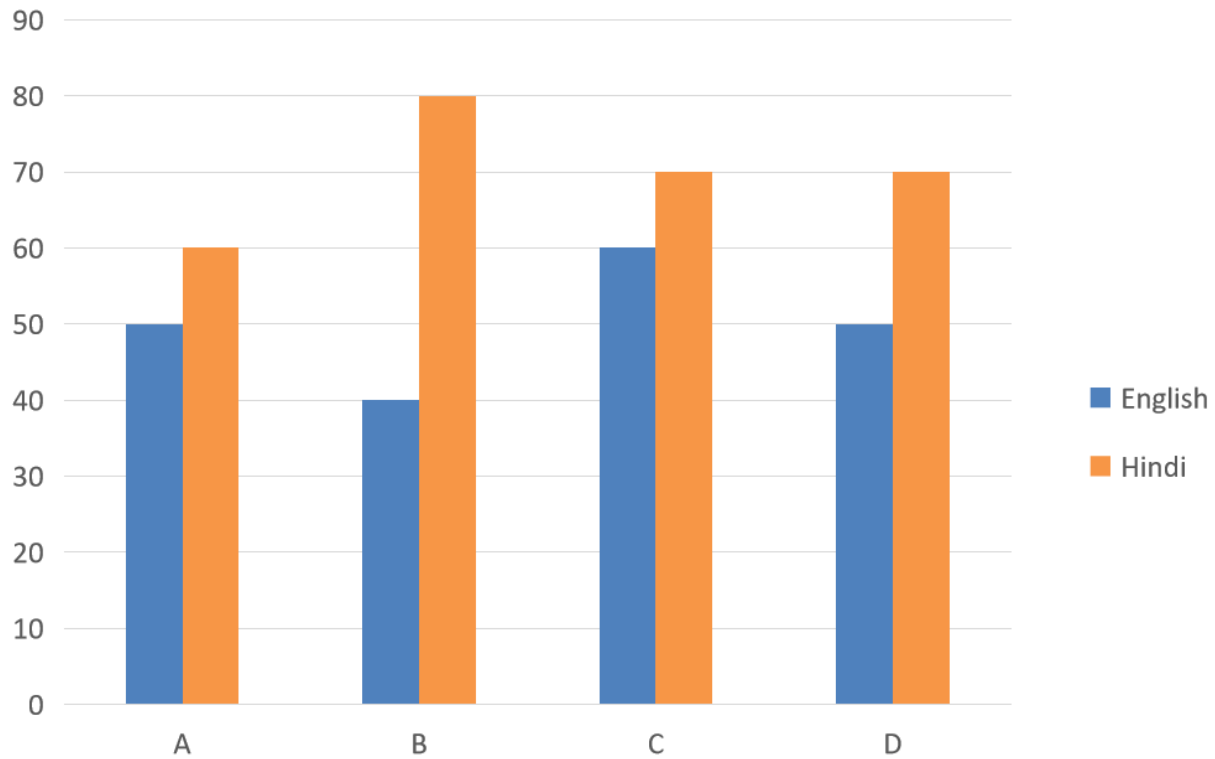
**Answer:** Option C

**Q5.** Four men and two women can do a piece of work together in one day. If a woman is twice as efficient as a man, in how many days can a woman working alone do the work?

- A. 4
- B. 6
- C. 8
- D. 2

**Answer:** Option A

**Q6.** The average marks (out of 100) scored by the students of four towns A, B, C and D of a district, in English and Hindi at a secondary level examination held in 2019 are presented through a Bar Graph shown below.



How much percentage (correct up to two decimal places) are the average marks in Hindi above that of the highest marks among the towns in English?

- A. 18.33
- B. 14.33
- C. 16.67
- D. 20.67

**Answer:** Option C

**Q7.** The median of the following data is \_\_\_\_\_.

Class	0-10	10-20	20-30	30-40	40-50
Frequency	10	15	12	15	8

- A. 24.266
- B. 24.266
- C. 24.123
- D. 24.166

**Answer:** Option D

**Q8.** Raju buys 3 goats and 2 sheeps for Rs.11600. When he sells the goats at 20% profit and the sheep at 10% loss, he earns a total profit of Rs.1000. The cost of one sheep is \_\_\_\_\_.

- A. Rs.2600
- B. Rs.4600
- C. Rs.2400
- D. Rs.2200

**Answer:** Option D

**Q9.** A train starting from station X was to arrive at station Y at 6:06 PM. It could travel at 62.5% of its usual speed and reach Y at 7 PM. At what time did it start from X?

- A. 4:44 PM
- B. 4:56 PM
- C. 4:36 PM
- D. 4:24 PM

**Answer:** Option C

**Q10.** The sum of two numbers is 2604 and their HCF is 124. Which is the smaller between them if their difference is the least possible?

- A. 1116
- B. 1240
- C. 620
- D. 496

**Answer:** Option B

**Q11.** In how many ways can X give Rs.500 to Y using only Rs.100 and Rs.20 notes, with the condition that she has only 16 notes of Rs.20, and being asked to use the notes of both the denominations?

- A. 6
- B. 3
- C. 4
- D. 2

**Answer:** Option C

**Q12.** What sum (in Rs) given on loan for two years with scheme of return on the basis of compound interest at a yearly rate of 10% will correspond to repayment through equal monthly installments of Rs.9075?

- A. 165000
- B. 180000
- C. 189000
- D. 198000

**Answer:** Option B

**Q13.** A sales representative's commission is 6% on all sales up to Rs. 15000 and 5% on all sales exceeding this. He remits Rs. 47350 to his company after deducting his commission. What were the total sales?

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

**Answer:** Option D

**Q14.** The capacities of three containers X, Y and Z are 1, 2 and 4 liters respectively. Initially, X is empty, while Y and Z are full of water and milk respectively. X is filled from Y, Y is replenished from Z and X is emptied into Z. If this process is repeated once more, then what will be the ratio of milk in Y to water in Z?

- A. 3:5



- B. 1:1
- C. 4:3
- D. 4:5

**Answer:** Option B

**Q15.** A particular distribution is represented by two data points. If the range and the standard deviation of the distribution are R & S respectively, what is the relation between them?

- A.  $S = \sqrt{R}$
- B.  $S = 2R$
- C.  $S = R$
- D.  $S = \frac{R}{2}$

**Answer:** Option D

**Q16.** The average score in Mathematics of a class increases by 10% if the total marks secured by a number of students who form 20% of the class strength and whose average score is 48 is not included in the calculation. What is the average score?

- A. 90
- B. 60
- C. 75
- D. 80

**Answer:** Option D

**Q17.** What will be the percentage increase in the area of a square, If its side is increased by 20%?

- A. 44%
- B. 40%
- C. 36%
- D. 20%

**Answer:** Option A

**Q18.** If 25% of a number is equal to the three-fifths of another number, what will be the ratio of the first number to the second number?

- A. 5:12

- B. 12:5
- C. 12:15
- D. 15:12

**Answer:** Option B

**Q19.** The ratio of incomes of P and Q is 7:5 and the ratio of their expenditures is 4:3. If at the end of the year, P and Q save Rs.3000 and Rs. 2000 respectively, what is Q's income?

- A. Rs.5000
- B. Rs.4500
- C. Rs.4000
- D. Rs.7000

**Answer:** Option A

**Q20.** A hollow spherical ball of thickness 1 cm and external radius 5 cm is melted and then from the solid so obtained, without any loss of material, 61 identical spherical balls are obtained. What is the diameter (in cm) of each ball?

- A. 1.5
- B. 3
- C. 1
- D. 2

**Answer:** Option C

**Q21.** 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

**Q22.** Four distributions AddaJobs, Peepinsta, PhraseSeven, Offlineprepare9i are given below:

AddaJobs: 4, 2, 1, 3, 3, 5, 6, 9, 8, 7

Peepinsta: 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

PhraseSeven: 5, 6, 4, 5, 7, 5, 8, 1, 5, 2

Offlineprepare9i: 2, 6, 6, 11, 10, 9, 10, 8, 7

What is the mean of the two modes in the only bimodal distribution among the above?

- A. 5
- B. 3
- C. 6
- D. 8

**Answer:** Option D

## Verbal Ability

**Qs 1 to 4: Read the passage given below and answer the questions.**

Man-made fibres are to be distinguished from natural fibres such as silk, cotton, and wool. Natural fibres also consist of polymers (in this case, biologically produced compounds such as cellulose and protein), but they emerge from the textile manufacturing process in a relatively unaltered state. Some man-made fibres, too, are derived from naturally occurring polymers. For instance, rayon and acetate, two of the first man-made fibres ever to be produced, are made of the same cellulose polymers that make up cotton, hemp, flax, and the structural fibres of wood. In the case of rayon and acetate, however, the cellulose is acquired in a radically altered state (usually from wood-pulp operations) and is further modified in order to be regenerated into practical cellulose-based fibres. Rayon and acetate therefore belong to a group of man-made fibres known as regenerated fibres.

Another group of man-made fibres (and by far the larger group) is the synthetic fibres. Synthetic fibres are made of polymers that do not occur naturally but instead are produced entirely in the chemical plant or laboratory, almost always from by-products of petroleum or natural gas. These polymers include nylon and polyethylene terephthalate, mentioned above, but they also include many other compounds such as the acrylics, the polyurethanes, and polypropylene. Synthetic fibres can be mass-produced to almost any set of required properties. Millions of tons are produced every year.

**Q1.** This passage is mainly about \_\_\_\_\_.

- A. The processing of man-made fibres
- B. The difference between natural and man-made fibres
- C. The mass production of man-made fibres
- D. Different types of man-made fibres

**Answer:** Option A

**Q2.** Which statement is correct according to the information in the passage?

- A. Wool cannot be considered as a natural fibre
- B. Natural fibres do not contain any polymers
- C. Synthetic fibres are mass produced in millions of tons
- D. Synthetic fibres are the smallest group of man-made fibres

**Answer:** Option C

**Q3.** What by-products are created out of the chemical processing of petroleum or natural gas?

- A. Polyester
- B. Rayons
- C. Acetate
- D. Cellulose

**Answer:** Option A

**Q4.** About which of the following does the writer say that they were the first man-made fibres?

- A. Acetate and rayon
- B. Flax and rayon
- C. Wool and silk
- D. Cotton and hemp

**Answer:** Option A

**Q5.** Read the following passage and fill in the blanks by selecting the most appropriate option.

The word “SARI” means “strip of cloth” in Sanskrit. But for the Indian women - and a few men - who have been \_\_\_\_\_(1)\_\_\_\_\_ themselves in silk, cotton or linen for millenia, these swathes of fabric are more than just simple garments. They are symbols of national pride, ambassadors for \_\_\_\_\_(2)\_\_\_\_\_ design and craftsmanship, and a prime example of the rich differences in India’s 29 states.

**Blank 1:**      A. Trying      B. Binding      C. Draping      D. Fastening  
**Blank 2:**      A. Outdated      B. Fixed      C. Habitual      D. Traditional

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

**Answer:** Option D

**Q6.** Select the most appropriate option to fill in the blank.

Look carefully, can’t you \_\_\_\_\_ the resemblance between the mother and the daughter?

- A. Make out
- B. Make up
- C. Make off
- D. Make away

**Answer:** Option A

**Q7 to Q10 Read the passage carefully and answer the questions given below.**

The field of behavioral economics blends ideas from psychology and economics, and it can provide valuable insight that individuals are not behaving in their own best interests.

Behavioral economics provides a framework to understand when and how people make errors. Systematic errors or biases recur predictably in particular circumstances. Lessons from behavioral economics can be used to create environments that nudge people toward wiser decisions and healthier lives.

Behavioral economics emerged against the backdrop of the traditional economic approach known as rational choice model. The rational person is assumed to correctly weigh costs and benefits and calculate the best choices for himself. The rational person is expected to know his

preferences (both present and future), and never flip-flop between two contradictory desires. He has perfect self-control and can restrain impulses that may prevent him from achieving his long-term goals.

Traditional economics uses these assumptions to predict real human behavior. The standard policy advice that stems from this way of thinking is to give people as many choices as possible, and let them choose the one they like best (with minimum government intervention). Because they know their preferences better than government officials do. Individuals are in the best position to know what is best for them.

In contrast, behavioral economics shows that actual human beings do not act that way. People have limited cognitive abilities and a great deal of trouble exercising self-control. People often make choices that bear a mixed relationship to their own preference (happiness). They tend to choose the option that has the greatest immediate appeal at the cost of long-term happiness, such as taking drugs or overeating.

**Q7.** Which statement best summarises what the writer is saying in the passage?

- A. People are guided according to their individual personalities in their choices and decisions.
- B. People make many wrong choices when they are in a difficult situation.
- C. People need someone to control them and regulate their public behaviour.
- D. People are often confused and irrational in their behaviour when faced with challenges.

**Answer:** Option A

**Q8.** In the fifth paragraph the writer states that individuals often \_\_\_\_\_

- A. Sacrifice long-term benefits in favour of short-term pleasures.
- B. Get carried away by the influence of powerful pressures.
- C. Overlook short term benefits for long-term advantages.
- D. Are swayed by peer pressure to change their opinions.

**Answer:** Option A

**Q9.** What does the writer call the traditional economics model?

- A. Systematic error
- B. Rational choice
- C. Mixed preference
- D. Standard policy

**Answer:** Option B

**Q10.** Which of the following action words does the writer use to describe the implicit purpose of behavioural economics in human behaviour?

- A. To blend
- B. To appeal
- C. To nudge
- D. To restrain

**Answer:** Option C

**Q11.** Fill in the blanks with the most suitable options.

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 the 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) a
- B. (1) c, (2) b
- C. (1) b, (2) c
- D. (1) a, (2) b

**Answer:** Option D

**Q12.** One part of the sentence below may contain grammatical errors. Identify the part. If there is no error, choose 'No error'

India's chess olympiad gold-winning team captain Vidit Gujrathi says that the experience of playing against, and defeating iconic Viswanathan Anand was the most special moment of his life

- A. India's chess olympiad gold-winning team captain
- B. No error
- C. says that the experience of playing against, and defeating
- D. was the most special moment of his life

**Answer:** Option C

**Q13.** Trans-Saharan Railway was a project to build a rail line south through Algeria to sub-Saharan Africa (1)\_\_\_\_\_ But Algiers was comparatively near France and possesses, moreover, its own means of defence, so that if it and the other parts of French Africa could be firmly knit together by a railroad there would be little to fear from an outside for. (2)\_\_\_\_\_ Such a road would bring the different parts of the country into touch with one another and would greatly facilitate their economic conquest.

- A. Besides the strategic reasons in favor of a Trans-Sahara railroad, there were political and economic ones as well.
  - B. The southern portions of the French African Empire were practically isolated, the vast interior religions presenting an almost insurmountable barrier between them and Algiers, so that in case of a war with a strong naval power like England, they would be in great danger.
  - C. As far back as 1880, some preliminary surveys to the south of Algiers were made by exploring parties.
- A. (1)-B, (2)-A
  - B. (1)-B, (2)-C
  - C. (1)-C, (2)-B

**Answer:** Option A

**Q14.** 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: US president Donald Trump on wednesday refused to commit himself to allow a peaceful transfer of power if he lost his November-3 re-election bid, raising the largely unfounded prospect of widespread fraud in mail in ballots.

S-2:

S-3:

S-4: And as a candidate in 2016, he had refused to say he would accept the outcome of the election if he lost.



P. This is not the first time he was not committal on the issue, taking the stance most recently in an interview to fox news

Q. If it was a fair and free election, Trump claimed, there will be “continuation “ of power, and not transfer

R. President Trump married to Melania Trump, a former model, some years ago

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

**Answer:** Option C

**Q15. Fill in the blanks with the right options.**

Many women in Western society, aware of the power of names to influence identity, are aware that choosing how to identify themselves after marriage can be a significant decision. \_\_\_\_\_(1) \_\_\_\_\_ One fascinating survey reveals that a woman's choice is likely to reveal a great deal about herself and her relationship with her husband. \_\_\_\_\_(2)\_\_\_\_\_ On the other hand, women who keep their birth names put their personal concerns ahead of relationships and social expectations.

- a. Women who take their husband's name place the most importance on relationships.
  - b. Female forms of address influence others' perceptions as well
  - c. They may follow the tradition of taking their husband's last name, hyphenate their own name and their husband's, or keep their birth name.
- 
- A. (1) b, (2) a
  - B. (1) a, (2) b
  - C. (1) c, (2) a
  - D. (1) b, (2) c

**Answer:** Option C

**Q16.** 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: INS Vikrant was the first aircraft carrier to be designed by the directorate of Naval design of the Indian Navy

S-2:

S-3:

S-4: Due to this, it became the first ship to be built completely using domestically produced steel

P. The Keel for Vikrant was laid by the Defence Minister at the Cochin shipyard on 28th February 2009.

Q. It took a longtime to build a warship which was indigenously built by the cochin shipyard

R. About 26,000 tons of different types of steel were manufactured by the Bhilai steel plant, chhattisgarh and Rourkela Steel plant, Odisha

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

**Answer:** Option D

**Q17.** One part of the sentence below may contain an error. Identify the part. If there is no error, choose 'No error'.

While I was working, I have received a call from my sister.

- A. I have received
- B. While I was working
- C. a call from my sister
- D. No error

**Answer:** Option A

**Q18.** Which of the following sentences using formal language?

- A. This was really cool, keep them coming!
- B. This just doesn't work for me, you'll have make another submission of the design.
- C. Do not stress yourself, we'll figure it out somehow
- D. You are required to submit the documents for due diligence prior to release of the loan.

**Answer:** Option D

**Q19.** The following sentence pair can be combined into one better sentence. Choose the option that gives the best combination without changing the meaning.

You did not measure the ingredients correctly. Your cake did not come out well.

- A. If you had measured the ingredients correctly your cake would not have come out well.
- B. If you had measured the ingredients correctly your cake would have come out well.
- C. As you had measured the ingredients correctly your cake did not come out well.
- D. Because you had not measured the ingredients correctly your cake would have come out well.

**Answer:** Option B

**Q20. Read the passage carefully. Then select the words/ options listed A to D which best fill in the blanks:**

The Moon should give you a feeling of confidence but will affect your temper, and there will be a few mood swings and these in turn will bring (1)\_\_\_\_\_ self-doubt. However, in the final analysis you should feel hopeful about the future. Optimism breeds success - and attacks (2) \_\_\_\_\_ employers. Watch out for dictatorial people and take evasive action. If you can stay out of their way, then you will end the day much happier!

**Options:**

**Blank 1:**

- 1. certainly
- 2. occasional
- 3. cowardice
- 4. many

**Blank 2:**

- 1. anger
- 2. potential
- 3. by-law
- 4. dangerous

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

**Answer:** Option B

**Q21. Fill in the blank with the most appropriate set of words from the options given below.**

What did the painter do \_\_\_\_\_ himself from failing?

When he felt the ladder \_\_\_\_\_ he grabbed the gutter to save himself from failing

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

**Answer:** Option C

**Q22.** Select the most appropriate option to fill in the blank.

"I've achieved a life goal, a dream for myself \_\_\_\_\_ I had for many years," the winner said.

- A. whom
- B. who
- C. whose
- D. which

**Answer:** Option D

**Q23.** One part of the sentence below may contain a grammatical error. Identify the part. If there is no error, choose 'No error'.

The new suspension bridge over the large lake were inaugurated yesterday with great fanfare and illuminations.

- A. No error
- B. with great fanfare and illuminations
- C. were inaugurated yesterday
- D. The new suspension bridge over the large lake

**Answer:** Option C

**Q24.** 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: Since the COVID -19 pandemic has disrupted the normal lifestyle of people across the globe, the virtual world has come to the rescue.

S-2

S-3

S-4: Accordingly, various stakeholders such as government and private organizations are trying their best to assist each other by sprucing up their existing online platforms, apps and providing training to teachers to use these apps and platforms to the optimum level.

P. Consequently, catering to the needs of all stages of education from pre-primary to university level online education has emerged as an alternative to ordinary face to face classes

Q. Amongst many institutions, schools have also shifted their base to virtual platforms to conduct classes online.

R. Apart from upskilling teachers on apps, organising counselling sessions for other stakeholders such as parents and students are some of the important measures taken by these organizations.

- A. PQ
- B. RP
- C. QP
- D. RQ

**Answer:** Option C

### Reasoning Ability

**Q1.** Three sentences are followed by four conclusions numbered I, II, III and IV. 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 statements.

#### Statements:

All organizers are participants  
Some organizers are managers  
All managers are females

#### Conclusions:

- I. Some participants are managers
  - II. Some females are participants
  - III. No females is an organizer
  - IV. All participants are females
- 
- A. Only conclusion I, II and III follow
  - B. Only conclusion I and IV follow
  - C. Only conclusion I and II follow
  - D. Only conclusion II, III and IV follow

**Answer:** Option C

**Q2.** Six friends P, Q, R, S, T and U are in a group

- I. Q and R are shorter than U but heavier than P
- II. S is heavier than Q and taller than R
- III. T is shorter than S but taller than U
- IV. U is heavier than S
- V. P is shorter than T but taller than U

Who is the fourth from the top when they are arranged in descending order of the heights in the group?

- A. S
- B. U
- C. P
- D. T

**Answer:** Option B

**Q3.** Read the following information carefully and answer the given questions.

The candidate must :

- 1. Have completed graduation from any stream with more than 70%
- 2. Be less than 30 years of age as on June 1, 2020
- 3. Have completed a PG Diploma in Creative writing with at least 75% marks

However if the candidate fulfils all the above criteria except

(i) 4 at 2 but has done post graduation in Journalism his/her case is to be referred to the Vice President

(ii) 5 at 3 but has secured more than 85% marks in graduation , his/her case is to be referred to the senior creative manager

Natasha completed her graduation from commerce stream with 70% marks. She completed her post-graduation in journalism in 2018 at the age of 29 years. She has also completed her PG diploma in creative writing with 75% marks.

- A. Her case is to be referred to the senior creative manager
- B. Her case is to be referred to the Vice President
- C. She would not be selected
- D. She would be selected

**Answer:** Option C

**Q4.** Read the following information carefully and answer the given questions. A public charitable trust desires to select a homeopathy doctor for its hospital in a rural area, based on the following criteria:

The candidate must be

1. Holding BHMS degree with minimum 60% marks
2. Having five years of experience of practice in a rural area
3. Having a good knowledge of the local language

Incase of the applicant who satisfies all other criteria except

(i) at 1 above but has minimum 50% marks at BHMS and has completed MD with 55% his/her case is to be referred to the chief medical officer

(ii) at (i) above but has 3 years full time experience of practice in an urban or rural hospital but spent at least 5 years in a rural area, his/her case is to be referred to the secretary

(iii) at 3 above but has working knowledge in hindi, his/her case is referred to the hospital management

Based on these criteria and information provided, decide the course of action

Jasvinder has completed BHMS with a minimum of 52% marks; he has practiced for 6 years in a village. He has a good knowledge of hindi as well as the local language. What decision would be taken for him?

- A. He would be selected
- B. Refer to the hospital Management
- C. Refer to the secretary
- D. Refer to Chief medical officer

**Answer:** Option D

**Q5.** The following are the criteria of recruitment for the post of Technical Assistants at an organization

The candidates must:

- (a) have completed B.Tech in Electrical Engineering with more than 80% marks
- (b) be willing to execute a bond of not leaving the job at least for two years
- (c) have secured more than 85% marks in the written test and more than 70% marks in the Personal Interview
- (d) be willing to relocate to the head office located at New Delhi

However, if the candidate fulfils all the above criteria except

- (e) at (b), but has at least two years work experience as Technical Assistant, his/her case is to be referred to the General Manager.
- (f) at (c), but has also completed M.Tech in Electrical Engineering, his/her case is to be referred to the Head (Operations).

Preksha has completed B.Tech and M.Tech in Electrical Engineering with 82% marks in both the examinations. She has secured 72% marks in Personal Interview and 88% marks in written test. She is willing to relocate to the head office at New Delhi. She is willing to execute a bond of not leaving the job for one year. She has got three years' work experience as Technical Assistant.

- A. Her case is to be referred to the Head(Operations)
- B. The candidate would be recruited
- C. The candidate would not be recruited
- D. Her case is to be referred to the General Manager

**Answer:** Option D

**Q6.** The management of organization has decided to give free lunch from next month to all employees

**Courses of Action**

- I. The organization would appoint Chefs who would prepare healthy and tasty food for the staff.
  - II. The pantry facilities have to be checked and new purchases have to be made.
  - III. Funds will have to be allocated to facilitate the new pantry facilities.
- A. Only I and II follow
  - B. All of I, II and III follow
  - C. Only I follows
  - D. Only III follows

**Answer:** Option B



**Q7.** Which is the wrong term in the following series?

RSPH, UWUN, XAZT, AEEZ, DIKG

- A. UWUN
- B. AEEZ
- C. DIKG
- D. RSPH

**Answer:** Option C

**Q8.** Six friends P, Q, R, S, T and U are standing in a queue at a ticket counter. Q is between U and P. S is just before T. R is just before U. U is ahead of S with two persons in between them. Who is standing at the last place in the queue?

- A. S
- B. T
- C. P
- D. U

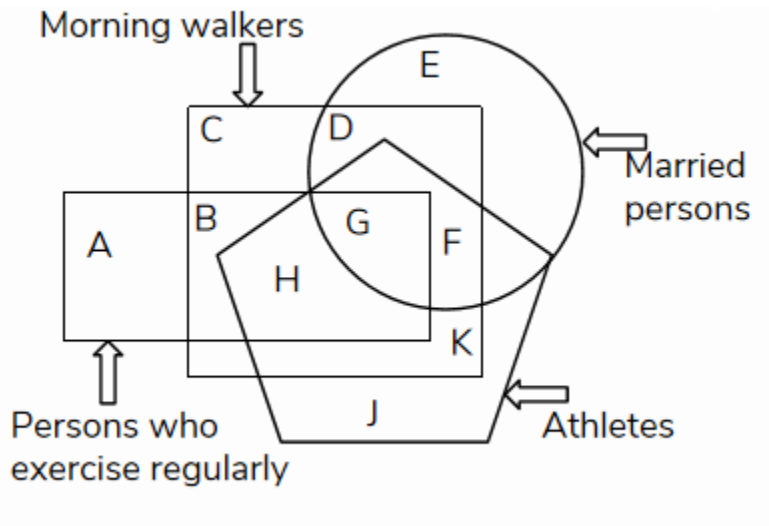
**Answer:** Option B

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

**Answer:** Option C

**Q10.** Which letter represents married athletes who are morning walkers also but do not exercise regularly?



- A. D
- B. K
- C. H
- D. F

**Answer:** Option D

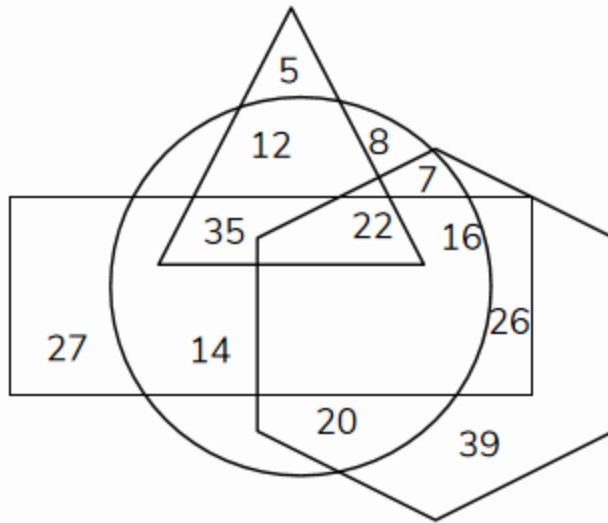
**Q11.** In a certain code,  $P + Q$  means P is the father of Q,  $P - Q$  means P is the wife of Q.  $P \times Q$  means P is the daughter of Q and  $P/Q$  means P is the brother of Q

If  $F \times G - H + J/K$ , which of the following statements may not be true?

- A. H is the father of K
- B. K is the son of G
- C. J is the brother of F
- D. F is the sister of K

**Answer:** Option B

**Q12.** In the following diagram, the triangle stands for 'males', and 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. 38
- B. 73
- C. 22
- D. 35

**Answer:** Option B

**Q13.** The numbers of students studying in six different disciplines of a college are given below. Study the given data and answer the questions that follow.

Number of Students in different disciplines			
Disciplines	Total	Boys	Girls
Science	1020	680	340
Social Science	2380	1700	680
Humanities	1700	510	1190
Law	680	408	272
Management	1700	1020	680
Commerce	2040	1190	850

Total	9520	5508	4012
-------	------	------	------

Which of the following pair of the name of discipline and its ratio of boys to girls is NOT correct?

- A. Science, 2:1
- B. Law, 3:2
- C. Commerce, 7:3
- D. Social Science, 5:2

**Answer:** Option C

**Q14.** Seven friends A, B, C, D, E, F and G play one of the seven musical instruments i.e. guitar, flute, dholak, Congo, piano, drum and violin. E does not play Congo. A, E and G does not play violin, flute and guitar. F plays piano. D plays drum. Who plays Congo?

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

**Answer:** Question is wrong. Answer can be A or G

**Q15.** In a certain code,  
 A%B means A is the husband of B  
 A&B means A is the son of B,  
 A#B means A is the wife of B,  
 A@B means A is the daughter of B,  
 A\$B means A is the sister of B.

If Q \$ M \$ P @ C # H & R % Z then which of the following statement is NOT correct?

- A. H is father of Q.
- B. Z is mother-in-law of C.
- C. R is maternal grandfather of Q.
- D. Z is mother of H.

**Answer:** Option C

**Q16.** Eight friends A, B, C, D, E, F, G and H are sitting around a circular table clockwise in the same sequence around a circular table facing the centre at equal distance between them. Who is sitting in the South-east direction?

**Statements:**

- I. C is sitting diagonally opposite to G.
- II. B is sitting in West direction.
- A. Both the Statements I and II together are necessary
- B. Statement II alone is sufficient
- C. Both the Statements I and II together are not sufficient
- D. Statement I alone is sufficient

**Answer:** Option B

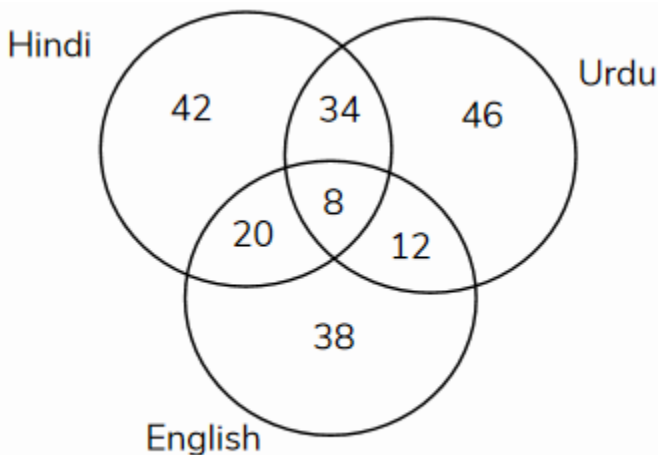
**Q17.** Given below is a question followed by two statements, I and II, each containing some information. Decide which of the statement/s is/are sufficient to answer the question.

What amount would Mr. Anuj need to pay to the taxi company for travelling a distance of 121 km?

- I. The taxi company charges Rs. 11 per km along with a fixed charge applicable on all the journeys
- II. The taxi company charged Rs. 835 which included the fixed charge for a journey of 35 km
- A. Both the Statements I and II together are necessary
- B. Both the Statements I and II together are not sufficient
- C. Statement I alone is sufficient
- D. Statement II alone is sufficient

**Answer:** Option A

**Q18 to Q19.** Consider the venn diagram given below.



**Q18.** The number in the Venn diagram indicates the number of persons who can speak various languages in a city. The diagram is drawn after surveying 200 persons. In a population of 15,000. How many people can be expected to speak just one language?

- A. 8400
- B. 9450
- C. 9600
- D. 8750

**Answer:** Option B

**Q19.** The number in the Venn diagram indicates the number of persons who can speak various languages in a city. The diagram is drawn after surveying 200 persons. In a population of 15,000. How many people can be expected to speak at least two languages?

- A. 2400
- B. 2900
- C. 5200
- D. 4950

**Answer:** All options are wrong. The correct answer is 5550

**Q20.** Given below is a question followed by two statements, I and II, each containing some information. Decide which of the statement/s is/are sufficient to answer the question.

Is the expression ' $B > E$ ' correct?

- I.  $B = C > D > F = M$
- II.  $H = M > T > E = P$
- A. Both the Statements I and II together are necessary
- B. Statement II alone is sufficient
- C. Both the Statements I and II together are not sufficient
- D. Statement I alone is sufficient

**Answer:** Option A

**Q21.** 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:**

No cylinder is a drum.

All balls are cylinders.

**Conclusions:**

- I. No drum is a cylinder.
- II. Some cylinders are balls.
- III. No ball is drum.
- A. Only conclusion I and III follow
- B. Only conclusion II and III follow
- C. All of the conclusions follow
- D. Only conclusion I and II follows

**Answer:** Option C

**Q22.** Happiness of a person does not depend only on his wealth.

Assumptions

- I. Overall well being is also important which contributes to happiness.
- II. Wealth alone does not provide happiness
- III. The main objective of most of the persons is just acquiring more wealth
- A. Only i and II are implicit
- B. Only III is implicit
- C. Only I is implicit
- D. Only II is implicit

**Answer:** Option D

## Programming Logic

**Q1.** What will be the output of the following program?

```
1 import java.util.*;
2 public class Main
3 {
4     public static void main(String[] args)
5     {
6         ArrayList<Integer>TempArrayList = new ArrayList<Integer>();
7         TempArrayList.add(30);
8         TempArrayList.add(20);
9         TempArrayList.add(10);
10        TempArrayList.add(40);
11        TempArrayList.add(50);
12        Collections.sort(TempArrayList, Collections.reverseOrder());
13        Collections.sort(TempArrayList, Collections.reverseOrder());
14        System.out.println(TempArrayList);
15    }
16 }
```

Type your answer in the given box.

**Answer:** [50, 40, 30, 20, 10]

**Q2.** Construct post order Transversal for the constructed tree with the given In-Order and Preorder Traversals:

In-Order: 9 7 10 6 8

Pre-Order: 6 7 9 10 8

- A. 9 10 7 8 6
- B. 9 7 6 10 8
- C. 8 9 10 7 6
- D. 9 8 10 7 6

**Answer:** Option A



**Q3.** What will be the output of the following program?

```
1 public class Main
2 {
3     public static void main(String args[])
4     {
5         int x=10,y,z;
6         z=y=x;
7         y-= x --;
8         z=--x;
9         x-= --x - x--;
10        System.out.println(x+"-"+y+"-"+z);
11    }
12 }
```

Type your output in the given box.

**Answer:** 8-0-2

**Q4.** Consider the following variables declarations:

Float num1;

Short num2;

Long num3;

What is the data type of num1-num3/num2?

- A. None of the given options
- B. Float
- C. Double
- D. Short

**Answer:** Option B

**Q5.** The kind of software testing you can do when you have both the source code and the executable code in hand, is called as?

- A. Red Box Testing
- B. Black Box Testing
- C. White Box Testing

D. Blue Box Testing

**Answer:** Option C

**Q6.** Select the precise options for the below scenarios

Expression 1: `cout<<endl;`

Expression 2: `cout<<"\n"<<flush;`

- A. Second expression will not insert new line
- B. First expression will not insert new line
- C. Both expression will give same results
- D. Both expression will give different results

**Answer:** Option C

**Q7.** Spot the error in the given code. If there is no error, select the most appropriate option

```
1 #include<iostream>
2 using namespace std;
3 class Employee
4 {
5     private:
6     int UserId;
7     public:
8     Employee(): UserId(0) {}
9     friend int displayUser(Employee);
10 };
11 int displayUser(Employee emp)
12 {
13     emp.UserId +=12;
14     return emp.UserId;
15 }
16 int main()
17 {
18     Employee e;
19     cout<<"Employee UserId:"<<displayUser(e)<<endl;
20     return 0;
21 }
```

- A. Error at line 9
- B. Error at line 8
- C. Employee User Id:12
- D. Compilation error

**Answer:** Option C

**Q8.** float (\*p)[5]

Here, p is \_\_\_\_\_

- A. Pointer to array of float
- B. Float
- C. Array of pointer
- D. Pointer

**Answer:** Option C

**Q9.** What is the function of rewind()?

- A. Setting file pointer at the beginning of line
- B. Setting file pointer anywhere in file
- C. Setting file pointer at the end of file
- D. Setting file pointer at the beginning of file

**Answer:** Option D

**Q10.** What will be the output of the following program?

```
1 abstract class Shape{
2     public abstract void Disp();
3 }
4 class Triangle extends Shape{
5     public final void Disp() {
6         System.out.println("Triangle");
7     }
8 }
9 class Rectangle extends Triangle{
10     public void Disp() {
11         System.out.println("It's Rectangle");
12     }
13 }
14 public class Main{
15     public static void main(String [] args){
16         Rectangle obj = new Rectangle();
17         obj.Disp();
18     }
19 }
```

- A. Run time error
- B. Triangle
- C. Compile Time error
- D. It's Rectangle

**Answer:** Option C.

## Coding

**Q1.** FULLY AUTOMATIC VENDING MACHINE dispenses your cuppa on just the press of button. A vending machine can serve range of products as follows:

Coffee

1. Espresso Coffee
2. Cappuccino Coffee
3. Latte Coffee

#### Tea

1. Plain Tea
2. Assam Tea
3. Ginger Tea
4. Cardamom Tea
5. Masala Tea
6. Lemon Tea
7. Green Tea
8. Organic Darjeeling Tea

#### Soups

1. Hot and Sour Soup
2. Veg Corn Soup
3. Tomato Soup
4. Spicy Tomato Soup

#### Beverages

1. Hot Chocolate Drink
2. Badam Drink
3. Badam-Pista Drink

Write a program to take input for main menu & sub menu and display the name of sub menu selected in following format (enter the first letter to select main menu):

Welcome to CCD

Enjoy your <name of sub menu>

#### Example 1:

##### Input

c

1

##### Output

Welcome to CCD!

Enjoy your Espresso Coffee!

#### Example 2:

##### Input

t  
9

**Output**

INVALID OPTION!

## Solution in C++:

```
1 #include <bits/stdc++.h>
2 using namespace std;
3 int main()
4 {
5     string c[3]={"Espresso Coffee","Cappuccino Coffee","Latte Coffee"};
6     string t[8]={"Plain Tea","Assam Tea","Ginger Tea","Cardamom Tea",
7                 "Masala Tea","Lemon Tea","Green Tea","Organic Darjeeling Tea"};
8     string s[4]={"Hot and Sour Soup","Veg Corn Soup","Tomato Soup",
9                 "Spicy Tomato Soup"};
10    string b[3]={"Hot Chocolate Drink","Badam Drink","Badam-Pista Drink"};
11    char str[]="Welcome to CCD!\nEnjoy your ";
12    char ch;
13    int item;
14    cin>>ch>>item;
15    if(ch!='C' && ch!='c' && ch!='T' && ch!='t' && ch!='B'
16        && ch!='b' && ch!='S' && ch!='s')
17    {
18        cout<<"INVALID OPTION!";
19    }
20    else if(ch=='C' || ch=='c')
21    {
22        if(item<=0 || item>3)
23            cout<<"INVALID OPTION!";
24        else
25            cout<<str<<c[item-1]<<"!";
26    }
```

```
27     else if(ch=='T' || ch=='t')
28     {
29         if(item<=0 || item>8)
30             cout<<"INVALID OPTION!";
31         else
32             cout<<str<<t[item-1]<<"!";
33     }
34     else if(ch=='S' || ch=='s')
35     {
36         if(item<=0 || item>4)
37             cout<<"INVALID OPTION!";
38         else
39             cout<<str<<s[item-1]<<"!";
40     }
41     else if(ch=='B' || ch=='b')
42     {
43         if(item<=0 || item>3)
44             cout<<"INVALID OPTION!";
45         else
46             cout<<str<<b[item-1]<<"!";
47     }
48     return 0;
49 }
```



**Q2.** At an exam center, M number of students are allocated for one classroom as per the University Rules. The Examination staff has made sitting arrangements where the classroom contains N number of benches arranged in columns separated by a suitable distance occupying room space from the left to the right wall.

Given, M = 10 , N=5

Students from class "TY" can sit one after the other from the 1st bench starting at the left wall in the order of their Roll Numbers. And students from class "SY" are allowed to sit beside the students from class 'TY' in the order of their Roll Numbers one after the other. All students enter the classroom in a random order as input in String Array Students[ ]. Few students may remain absent. Assume the Roll Numbers are in continuous range with no drop, and Class Name("TY", "SY") should be prefixed for every Roll Number. For example, you can pass Input with values like:

Students = ["TY01", "TY02", "SY01", "SY05", "SY04", "TY03", "SY02", "TY04", "SY03", "TY05"]

Display the sitting arrangement status at the exam time. "ABSENT" should be marked at the place of the Roll Numbers of missing or absent students.

**Example 1:**

**Input Values(Input format should be same as below)**

TY01

TY02

SY01

SY05

SY04

TY03

SY02

TY04

SY03

**Output Values**

[TY01][SY01]

[TY02][SY02]

[TY03][SY03]

[TY04][SY04]

[ABSENT][SY05]

**Note:** Output should be in the format given in above example.

If input values are more than M, display INVALID INPUT.

If input value contains other than class SY or TY display INVALID INPUT.

Solution in C++:

```
1 #include <bits/stdc++.h>
2 using namespace std;
3 int main()
4 {
5     string arr[5][2];
6     for(int i=0;i<5;i++)
7         for(int j=0;j<2;j++)
8             arr[i][j]="ABSENT";
9     string s;
10    int r,c;
11    while(cin>>s)
12    {
13        if(s.empty())
14            break;
15        if(s[1]!='Y' or s[2]!='0' or (s[3]-'0')>5)
16        {
17            cout<< "INVALID INPUT";
18            return 0;
19        }
20        if(s[0]!='T' and s[0]!='S')
21        {
22            cout<< "INVALID INPUT";
23            return 0;
24        }
25        r = s[3] - '1';
26        if(s[0] == 'T')
27            c=0;
28        else
29            c=1;
30        arr[r][c] = s;
31    }
32    for(int i=0;i<5;i++)
33        cout<<" "<<arr[i][0]<<" "<<" "<<arr[i][1]<<" "<<'\\n';
34    return 0;
35 }
```