

This document details the Slot Analysis as well as Answers to Questions that students recollected post their TCS NQT(Slot 3) on 27<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
- Time, Speed and Distance
- Ratio and Proportions
- Linear Equations
- Simple Interest and Compound Interest
- Percentages
- Profit and Loss
- Simplification – Fractions and BODMAS
- Surds and Indices

### Verbal Ability:

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

### Reasoning Ability:

- Attention to detail
- Data Arrangements
- Cuts and unfolds
- Venn diagrams
- Blood relations
- Data Interpretation
- Visual reasoning
- Syllogisms

- Statements and Assumptions
- Rule based decision making
- Decision tables
- Analogy

### Programming MCQ's:

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

### Coding:

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

### Slot Analysis

- The assessment platform used was TCS iON.
- As already revealed during the DRC and by FACE Prep, both intra-sectional and inter-sectional navigation were not possible.
- Every question was mandatory, and only upon completing a question would you be able to go to the next question.
- Revisiting of answers already submitted is not possible.
- There was no negative marking.
- All test-takers within the slot got the same questions.
- The test was **NOT Adaptive**, for a lot of other websites incorrectly communicated this to students. FACE Prep accurately pointed out that the test was not adaptive – just that the test had no intra-sectional and inter-sectional navigation.
- There was **100% repetition of topics, as accurately predicted by FACE Prep**.
- There was the presence of an on-screen calculator, which candidates could use.

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

## Questions with Answers:

### Numerical Ability

**Q1.** If  $5^x 3^y = 225 \times 405$ , find the value of  $x^{2y-3x}$

- A. 25
- B. 27
- C. 125
- D. 81

**Answer:** Option B

**Q2.** A metallic spherical shell has internal and external diameters as 40 cm and 30 cm, respectively. It is melted and recast into a number of solid cones of 5 cm and height 4 cm each. The number of cones obtained is

- A. 200
- B. 190
- C. 165
- D. 185

**Answer:** Option D

**Q3.** A trader allows a 20% discount on the marked price of the article and gains  $11\frac{1}{9}\%$ . If the cost price increases by 20%, how much discount price should he now give on the same marked price to get the same profit percentage as before?

- A. 4.5
- B. 3.5
- C. 4
- D. 5

**Answer:** Option C

**Q4.** If 54 persons can complete  $\frac{3}{8}$  the part of a task in 36 days, then how many more persons are required to complete  $\frac{3}{4}$  rd part of the same task in 48 days?

- A. 20
- B. 18
- C. 15
- D. 21

**Answer:** Option B

**Q5.** What is the mean of the mode and median of the data  
18, 11, 15, 14, 19, 16, 13, 16, 11, 13, 16, 12, 11, 17, 12, 15, 16, 14?

- A. 14.5
- B. 17.5
- C. 15.25
- D. 16.5

**Answer:** Option C

**Q6.** Amita earns 18% profit by selling an article. If she increases the price of the article by INR60.50, her gain percent increases to 29%. If she sells it for INR 530.75, then gain/loss percent is

- A. Gain, 3.5%
- B. Loss, 1.5%
- C. Gain, 1.5%
- D. Loss, 3.5%

**Answer:** Option D

**Q7.** In 2018, Madhu saved 26% of her annual income. In 2019, she earned 20% more than she earned last year and saved 25% of her annual income. The amount spent in 2019 is what percent more than in 2018? (Correct to one decimal space)

- A. 19.8
- B. 21.6
- C. 22.2
- D. 20.4

**Answer:** Option B

**Q8.** Pipes A and B can empty a full tank in 12 hours and 18 hours respectively and C is a filling pipe which can fill the empty tank in k hours. When all the three pipes are opened together then  $\frac{1}{9}$  th part of the tank was emptied in 1 hour. What is the value of K?

- A. 36
- B. 40
- C. 32
- D. 30

**Answer:** Option A

**Q9.** Two solutions A and B contain spirit and water in the ratio 5:6 and 7:4 respectively. They are mixed in the ratio 3:5 in a vessel. In 220 ml of the solution in the vessel, how much water(in ml) should be added to make it a solution in which the ratio of spirit and water is 25:27?

- A. 40
- B. 35
- C. 45
- D. 50

**Answer:** Option A

**Q10.** The time taken by a boat to go to a certain distance against the current is the same as to go the double distance along the current. The speed of the current is 3km/h. How much time will the boat take to travel 57.6Km in still water?

- A. 6.4
- B. 7.2
- C. 7.5
- D. 5.8

**Answer:** Option A

**Q11.** The ratio of two numbers is 8:5. If 18 is added to the first number and 15 is subtracted from the second number then the number becomes 3:1. If 12 is subtracted from the first number and 5 is added to the second number then the ratio of the given numbers will be

- A. 9:8
- B. 6:5
- C. 7:6
- D. 5:4

**Answer:** Option B

**Q12.** A certain sum amounts to INR 16590 in  $4\frac{1}{2}$  years at 8.5% p.a at S.I. The same sum amounts to INR x in 2 years at 15% p.a when the interest is compounded 8-monthly. The value of x is

- A. 15792
- B. 15927
- C. 15752
- D. 15972

**Answer:** Option D

**Q13.** A field is in the shape of a trapezium whose parallel sides are 104 m and 40 m and other non-parallel sides are each of length 50 m. The area (in  $m^2$ ) of the field is

- A.  $432\sqrt{31}$
- B.  $216\sqrt{41}$
- C.  $216\sqrt{31}$
- D.  $432\sqrt{41}$

**Answer:** Option D

**Q14.** Production (in thousands) of different types of cars by a company in 6 years

Type of car/ year	2014	2015	2016	2017	2018	2019
A	152	156	147	145	148	158

B	156	158	154	160	164	169
C	147	174	167	172	178	186
D	165	166	162	200	180	210

The total production of type B cars in 2015 and 2017 and type D cars in 2016 and 2019 is what percent more than the total production of type A cars in 2014 and 2018 and type C cars in 2015 and 2019? (Correct to one decimal place)

- A. 6.8
- B. 4.5
- C. 7.4
- D. 4.3

**Answer:** Option B

**Q15.** For the following given data:

Class	Below 15	Below 30	Below 45	Below 60	Below 75
Frequency	6	13	25	42	50

If  $x$  is the lower limit of the median class and  $y$  is the class mark of the modal class, then the value of  $(3x - y)$  is

- A. 80
- B. 37.5
- C. 47.5
- D. 60

**Answer:** Option B

**Q16.** A loan of INR 19125 is to be paid back in two equal half yearly instalments. If the rate of interest is 8% p.a and the interest is compounded half yearly, then how much is each instalment (in INR)?

- A. 10155
- B. 10125
- C. 10140
- D. 10120

**Answer:** Option C



**Q17.** Two sarees and three shirts cost INR 5400. With the same money, one can buy one saree and six shirts. Abhi buys 3 sarees and 5 shirts. If he had INR 8500 with him, how much money (in rupees) is left with him after purchase?

- A. 100
- B. 90
- C. 150
- D. 200

**Answer:** Option A

**Q18.** 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. 15
- B.  $15(1/2)$
- C.  $19(1/27)$
- D. 16

**Answer:** Option D

### Verbal Ability

**Q1.** For the sentence (S1 to S4) paragraph below, sentences S1 to S4 are given. From the options P, Q, R, choose the appropriate sentences from S1 and S3 respectively.

S1: Readability rates the text's condensity in terms of words and grammar, but we're actually more interested in the text's difficulty in terms of reader comprehension of the content.

S2.

S3.

S4. In addition to pure literacy skills, comprehension depends on a mix of 10, education, and background knowledge

#### Options:

P. Take for example, the following two sentences: He waved his hands and He waived his rights where both score well in readability formulae: simple work in short sentences.

Q. Examinees need to study medicine, law, engineering and rocket science in order to do well in comprehension tests

R. But whereas everybody understands what the first sentence describes, you might need a law degree to fully comprehend the implications of the second sentence.

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

**Answer:** Option D

**Q2.** Choose the most appropriate word to complete the sentence correctly:

Being a \_\_\_\_\_ doctor, he displays extremely rare quantities of being diligent and kind.

- A. conscious
- B. manly
- C. conscientious
- D. general

**Answer:** Option C

**Q3.** One part of the sentence below may contain an error. Identify the part.

I have to been asked / to keep quiet, / and that too,/ in stern terms

- A. and that too
- B. in stern terms
- C. I have to been asked
- D. to keep quiet

**Answer:** Option C

**Q4.** One part of the sentence below may contain an error. Identify the part.

Being a child, / I often went/ to the park with my reluctant father, / who is a busy man.

- A. Being a child
- B. to the park with my reluctant father
- C. I often went
- D. who is a busy man

**Answer:** Option D (The Present Tense in this part of the sentence is not consistent with the past tense in the rest of the sentence)

**Q5.** Choose the most appropriate word to complete the sentence correctly:

She would have waited for you, \_\_\_\_\_ you were coming home.

- A. if she know

- B. had she known
- C. she must have been
- D. if she would know

**Answer:** Option B

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

It was already afternoon. The delegates returned. The discussion was resumed.

- A. As it was already afternoon, the delegates returned to resume the discussion.
- B. The discussion was resumed as the delegates in the afternoon returned.
- C. The delegates returned in the afternoon for discussion
- D. The delegates returned for the discussion in already afternoon

**Answer:** Option A

**Q7.** Arrange the different segments to frame a meaningful sentence.

(A) a national flag / (B) in the highest esteem by every patriot / (C) and as such it is held / (D) is a symbol of honour and ideal.

- A. CABD
- B. ACDB
- C. BADC
- D. ADCB

**Answer:** Option D

**Q8.** Complete the following sentence by filling in the blanks (1 and 2) with the right words from the options given below:

Some scientists believed that the dinosaurs died because over a period of time their bodies became too big to be operated by their small brains. Large dinosaurs required vast amounts of food and could have stripped bare all the vegetation in their habitat. But this theory was soon \_\_\_\_1\_\_\_\_. If dinosaurs' brains had been too small to be \_\_\_\_2\_\_\_\_, they would not have flourished for 10 million years.

Blank 1:      A. dismissed      B. dismantled      C. discriminated      D. disrupted  
Blank 2:      A. adoptive      B. adjusted      C. adaptive      D. adapted

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

D. 1 C, 2 D

**Answer:** Option C

**Q9.** 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 respectively.

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

**Q10.** One part of the sentence below may contain an error. Identify the part.

Something about the way he spoke stuck a bell in Lauren's mind.

- A. Stuck a bell
- B. in Lauren's mind
- C. Something about
- D. way he spoke

**Answer:** Option A

**Q11.** Complete the following sentences by filling the blanks (1 & 2) with the right word from the options given below:

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

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

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

**Answer:** Option A

**Q12.** 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 respectively.

S1: With increased globalization comes the likelihood that infectious diseases appearing in one country will spread rapidly to another as was the case with the SARS which broke out in Hongkong a few years ago.

S2: \_\_\_\_\_

S3: \_\_\_\_\_

S4: Therefore understanding factors that led to the impact of SARS might help to deal with the possible impact and management of such infectious disease outbreaks.

P. Although it infected some 10,000 individuals, killing around 1000, that did not lead to the devastation of health impact as many people feared.

Q. The rapid spread of infectious diseases is not as great a threat as its impact on the global economy.

R. Outbreaks of more serious diseases could cause catastrophic impacts on the global economy.

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

**Answer:** Option D

**Q13.** One sentence has been removed from the text below. Read the text then match the missing sentence to fill up the blank:

With its 26 million people, Delhi has been described as a microcosm of India, with trappings from the country's many cultures, religions and traditions. Centuries of global trade, conquest and colonisation have made the city one of the world's most multicultural. \_\_\_\_\_

This is the term residents often call themselves, originating from the phrase 'Dilwalo ki Dilli', the place where the people with big hearts live.

- A. My family has been in the spice trade for generations and their main store is in delhi.
- B. And residents who adapt to this ever-changing culture are embraced as fellow 'Dilliwalas'.
- C. All the Mughal empire and the English rulers after them, stripped Delhi of all its wealth and talent.
- D. I have visited New Delhi several times and enjoy the food there.

**Answer:** Option B

**Q14.** Choose the most appropriate word to complete the sentence correctly:

The opposition has lost its advantage due to its endless \_\_\_\_\_.

- A. leadership
- B. headaches
- C. procrastination
- D. loss

**Answer:** Option C

**Q15 to Q18. Read the passage and answer the questions:**

Our screens are pervasive, so it's inevitable that our children pick up on this quickly, easily and intuitively. My baby even knew – almost as if by instinct – that by swiping my phone, something would light up. Before he even turned one, he seemed to have picked up on this. We know screens are extremely addictive too, they shape our children's minds in ways we are now slowly starting to understand. It's not all bad, but it's far from good either, and learning how to use screens better, or knowing when to stop, will have lasting positive consequences.

How outside influences might warp our children's thoughts is not a new worry. Similar worries appeared ever since televisions became a staple in family homes. While we know reading is beneficial for a range of cognitive abilities, at the same time, children are growing up in a world where screens are everywhere. Their screen use therefore paints a somewhat worrying picture. Estimates suggest that children aged 0 to two years engage in more than three hours of screen time per day, a figure that has doubled in the past two decades. Another study showed that for school-aged children, 49% had more than two hours screen time, and 16% had over four hours.

Screen time can come at the cost of reduced physical activity, increased BMI, and fewer family meals together. It is also linked to less sleep in children as well as adults. Children who have a TV in their room have been found to sleep 31 minutes less per day, for instance.

On first glance all this seems alarming, but it turns out that not all TV is the same and watching some educational shows can actually benefit children, but only those aged two and older.

Below 2 years, screen time does not have a positive value. Educational TV content has been shown to help improve behaviour, literacy and cognitive skills for three to five year olds.

**Q15.** What is the theme of the passage?

- A. That screen time allows children to learn much more than they do at school.
- B. That the amount of time children spend on digital screens is destroying the future generation.
- C. That screen time for children is better than study or play, as it allows parents to control their children.
- D. That screen time consumption by children must be managed/judiciously in a gain benefit.

**Answer:** Option D

**Q16.** Which of the following statements is not true?

- A. Educational TV can help learning among children that are under-resourced.
- B. Infants have become instinctual when handling cell phones or computers.
- C. It is not necessary to limit the time children have with a variety of digital screens.
- D. Children who have a TV in their rooms are sleeping less than before.

**Answer:** Option C

**Q17.** Twenty years ago, how much time were children spending on watching screens?

- A. About an hour and a half.
- B. About an hour
- C. Not at all
- D. About three hours.

**Answer:** Option A

**Q18.** Which word is closest in meaning to the word 'pervasive'?

- A. Superior
- B. Technical

- C. Widespread
- D. Critical

**Answer:** Option C

**Q19. One sentence has been removed from the text below. Read the text and then match the missing sentence to fill up the blank:**

Expats tend to congregate in the southern side of Delhi, especially in the neighbouring city of Gurgaon (30km south-west of New Delhi), where many of the multinational businessmen are located. South Delhi, a large district within Delhi, is also considered a higher end place to live. \_\_\_\_\_, while Golf links (next to the Delhi Golf Club) and nearby Lodhi Road are also considered prestigious residential parts of the city.

- A. They have never liked any suburb east of Yamuna
- B. Vasant Vihar, which is home to many foreign embassies
- C. Delhi is less than two hours away by road from Jaipur
- D. I would never like to live or work in New Delhi as it's very polluted

**Answer:** Option B

## Reasoning Ability

**Q1.** In the following question, two statements are given. You have to decide whether the data provided in the statements is sufficient to answer the question.

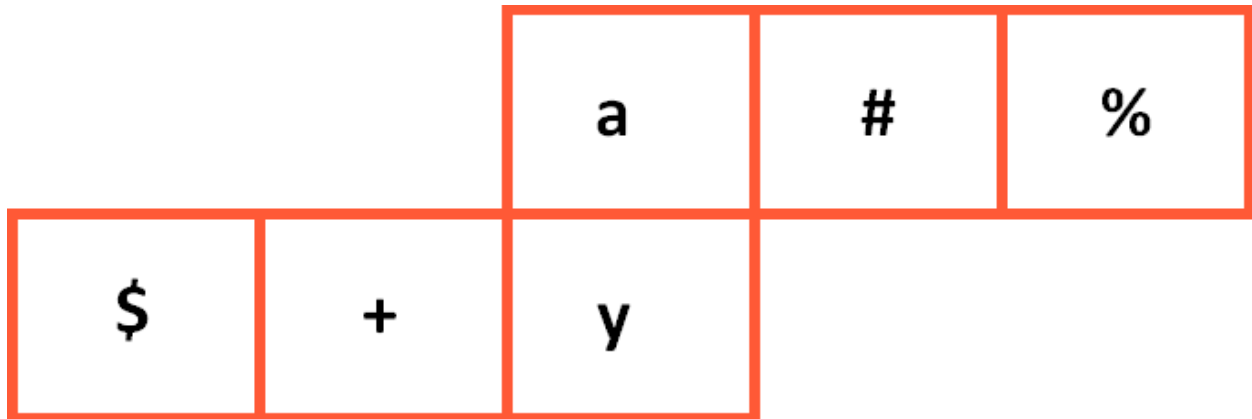
Who is elder Mukesh or Mohan?

- I. Mohan is twice as old as his sister.
  - II. Mukesh was born in the year 1985 and is five years younger than Mohan's sister.
- A. If the statements I and II together are needed to answer the question.
  - B. If the statement I alone is sufficient to answer the question.
  - C. If the statement II alone is sufficient to answer the question.
  - D. If the statement I or II alone is sufficient to answer the question.

**Answer:** Option A

**Q2.** A cube is made by folding the given sheet. In the cube so formed, which letter/ symbol will be on the opposite face to the face having the symbol '%'?





- A. Y
- B. a
- C. +
- D. \$

**Answer:** Option B

**Q3.** Three statements are given followed by three conclusions numbered 1, 2 and 3. 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:**

- A. All pinks are flowers
- B. All flowers are bees

**Conclusions:**

- 1. Some flowers are pinks
  - 2. Some pinks are not bees
  - 3. All bees are flowers
- 
- A. Only conclusion 1 and 2 follows
  - B. Only conclusion 1 follows
  - C. Only conclusion 3 follows
  - D. Only conclusion 2 follows

**Answer:** Option B

**Q4.** Three statements are given followed by three conclusions numbered 1,2 and 3. 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:**

- A. Some keys are locks
- B. Some locks are chains
- C. All chains are ropes

**Conclusions:**

- 1. Some ropes are locks
  - 2. Some chains are keys
  - 3. Some locks are keys
- 
- A. All conclusions 1, 2 and 3 follows
  - B. Only conclusion 2 and 3 follows
  - C. Only conclusion 1 and 3 follows
  - D. Only conclusion 1 and 2 follows

**Answer:** Option C

**Q5.** Which of the following means atmosphere in a certain code language, if:

- 1. 'san pa chan' means extremely polluted atmosphere
  - 2. ;han chan an' means 'atmosphere is clear'
- 
- A. If the statement I and II both the statement are not sufficient to answer the question
  - B. If the statement II alone is sufficient to answer the question
  - C. If the statement I alone is sufficient to answer the question
  - D. If the statement I and II both are sufficient to answer the question

**Answer:** Option D

**Q6.** In each of the five pairs of 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?

- P. MASON : AMNOS
- Q. PARTY : APRYT

R. FAULT : AFTLU  
S. LODGE : DOLEG  
T. CARGO : ACOGS

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

**Answer:** Option B

**Q7.** Two statements are given followed by two conclusions numbered 1 and 2. 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:**

- 1. All birds are plants
- 2. Some plants are houses

**Conclusions:**

- 1. All plants are birds
  - 2. Some houses are birds
- 
- A. Neither conclusion 1 nor 2 follows
  - B. Only conclusion 1 follows
  - C. Only conclusion 2 follows
  - D. Both conclusion 1 and 2 follows

**Answer:** Option C

**Q8.** If 'A x B' means A is the mother of B, 'A-B' means A is the sister of B, A/B means A is the father of B, A + B means A is the husband of B, and A % B means A is the wife of B. Then how is P related to G in G%Q/R-S+PxT?

- A. Daughter
- B. Sister
- C. Mother-in-law
- D. Daughter-in-law

**Answer:** Option D

**Q9.** Based on the information given below, answer the following question:

The percentage expenditure by a school in different categories is given. It spends 30% on staff salary, 25% on school maintenance, 20% on furniture and other resources, 15% on electricity and 10% on transportation. Total expenditure is Rs. 13,89,200.

How much money is spent on electricity and transport together if the total expenditure is increased by Rs. 36,000 (given, percentage of expenditure on each category remains the same)?

- A. Rs. 356,300
- B. Rs. 208,920
- C. Rs. 347,300
- D. Rs. 139,280

**Answer:** Option A

**Q10.** Statements

- A. Some apples are reds.
- B. All cherries are reds.

Conclusions:

- I. Some reds are cherries.
- II. Some reds are apples.
- A. Only conclusion II follows
- B. Only conclusion I follows
- C. Both conclusion I & II follows
- D. Neither conclusion I nor II follows

**Answer:** Option B

**Q11.** Six friends Poonam, Madhav, Ravi, Neelam, Jaya and Vineet are sitting around a circular table facing towards the centre. What is Madhav's position with respect to Vineet?

- I. Madhav is to the immediate right of Neelam. There are only two friends between Madhav and Poonam. Vineet is an immediate neighbour of Poonam but not of Neelam.
- II. Only two friends sit between Ravi and Jaya. Vineet is second to left of Jaya. Neelam and Madhav are immediate neighbours of each other.
- A. If statement I and II both are required to answer the question.
- B. If statement I alone is sufficient to answer the question.
- C. If statement I and II both are not sufficient to answer the question.
- D. If statement II alone is sufficient to answer the question.

**Answer:** Option B

**Q12.** Read the given information carefully and answer the following question.

- A. 'P/Q' means 'P' is the son of 'Q'.
- B. 'P+Q' means 'P' is the father of 'Q'.
- C. 'P\*Q' means 'P' is the wife of 'Q'.
- D. 'PxQ' means 'P' is the sister of 'Q'.
- E. 'P-Q' means 'P' is the mother of 'Q'.

Which among the following expressions is true, if 'M' is the son of 'L' is definitely false?

- A.  $K-L+O \times M/N$
- B.  $L+N \times O \times M/K$
- C.  $K+N \times O \times M/L$
- D.  $K * L + N - M + O$

**Answer:** Option D

- Q13.** A. Seven professionals a Doctor, an Engineer, a Teacher, a Pharmacist, a Lawyer, an Architect, and a Musician live in a hill station, an industrial city and a historical city. Their houses are painted with different colours like blue, red, green, yellow, black, pink and brown.
- B. The Engineer's and the Lawyer's houses are small in size and located in the industrial city.
  - C. There are only two houses that are small in size.
  - D. Only one big house is located at historical city and teacher lives there.
  - E. Musician lives in the industrial city and his big house is painted in brown colour.
  - F. The environment of all three-hill stations is very pure and clean.
  - G. The Doctor, the Pharmacist and the Architect live in blue, yellow and pink painted houses respectively.
  - H. Red and black painted houses are small in size.

What will be the specifications of the teacher's house?

- A. Small-black-historical city
- B. Small-blue-industrial city
- C. Big-red-hill station
- D. Big-green-historical city

**Answer:** Option D

**Q14 & Q15. Read the given information carefully and answer the questions**

- A. There are five friends Anjali Avinash, Gargi, James and Mohit having six subjects Biology, English, Hindi, Mathematics, Physics and Statistics.
- B. Only one passes in all six subjects.
- C. Gargi and Anjali fail in Hindi but not Avinash.
- D. All friends pass in Biology except Gargi and Avinash.
- E. Three friends Mohit, Avinash and Anjali fail in Physics and Mathematics.
- F. All friends pass in English except Mohit.
- G. All friends fail in physics except James.
- H. Only Avinash fails in Statistics.
- I. Only two friends pass in Hindi and Mathematics.

**Q14. Who does pass in Biology and Statistics only?**

- A. Anjali
- B. James
- C. Avinash
- D. Mohit

**Answer:** Option D

**Q15. Who does pass in all six subjects?**

- A. James
- B. Anjali
- C. Gargi
- D. Mohit

**Answer:** Option A

**Q16. Based on the information given below, answer the following question:**

The percentage expenditure by a school in different categories is given. It spends 30% on staff salary, 25% on school maintenance, 20% on furniture and other resources, 15% on electricity and 10% on transportation. Total expenditure is Rs. 13,89,200.

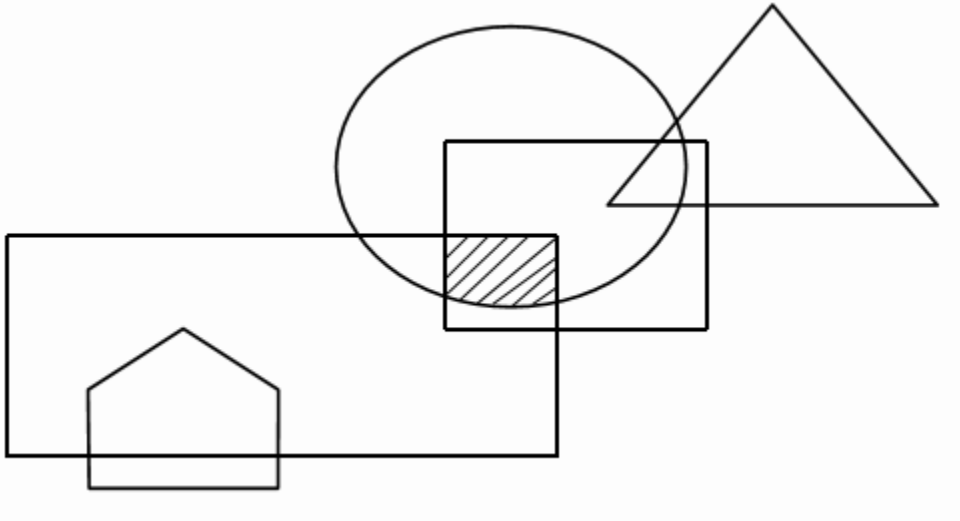
What is the amount spent on school maintenance?

- A. Rs. 347,300
- B. Rs. 208,380
- C. Rs. 555,680
- D. Rs. 416,760

**Answer:** Option A

**Q17.** In the following figure, circle represents post graduate person, triangle represents graduate person, rectangle represents politicians, square represents females and pentagon represents businessman.

The shaded region represents-



- A. Graduate female politician
- B. Graduate politician
- C. Post graduate female politician
- D. Graduate Businessmen

**Answer:** Option C

**Q18.** Read the following information carefully to answer the question given below.

A. Four professionals Ravi, Roma, Rahul and Rohan are practicing their professions in different cities Pune, Guwahati, Delhi and Kolkata not necessarily in the same order. Each has a different profession like a Professor, an Engineer, a Doctor and a lawyer not necessarily in the same order.

B. Rohan is a Professor and practices in Guwahati.

C. Ravi is a Doctor but does not practice in Pune.

D. Rahul is a Supreme court Lawyer.

Which of the following combinations of profession and place is correct?

- A. Lawyer-Kolkata
- B. Engineer-Kolkata
- C. Engineer-Pune
- D. Doctor-Pune

**Answer:** Option C

**Q19.** Read the following information carefully to answer the question given below.

- A. A travel company operates seven taxis A, B, C, D, E, F and G for daily passengers.
- B. From Monday to Friday, the first taxi leaves at 06.00 A.M and other taxis leave after an interval of 25 minutes and 15 minutes alternatively.
- C. For other days of the week the first taxi leaves at 6.45 A.M followed by other taxis regularly at an interval of 35 minutes
- D. Taxi E waves immediately after A followed by taxi G.
- E. Taxi F leaves immediately before taxi A but not immediately after taxi D.
- F. Taxi C is not followed by any other taxi.

At what time does the taxi E leave on Saturday, if taxi D is the first taxi to leave?

- A. 8.30 A.M.
- B. 9:05 A.M.
- C. 7.55 A.M
- D. Data Inadequate

**Answer:** Option B

## Programming Logic

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

```
1 #include<stdio.h>
2 #include<math.h>
3 int main()
4 {
5     if(!pow(2,4)!= abs(!-16))
6         printf("True");
7     else
8         printf("False");
9     return 0;
10 }
```

Enter your answer in the box.

**Answer:** False



**Q2.** What is the name of the approach by development of a system by means of a series of iterations to incorporate mid term changes until the system tests all the business requirements.

- A. Prototyping
- B. Normalization
- C. Smoke test
- D. Tracking

**Answer:** Option D

**Q3.** Suppose there is a stack of size 7. In that stack we push first 3 even numbers from the range of 1 to 10 in ascending order. Then we perform two pop operations then we push first 3 odd numbers from the range 11 to 20 in ascending order, then what will be the top element into the stack?

- A. 13
- B. 2
- C. 15
- D. 6

**Answer:** Option C

**Q4.** In the given program, if the sum value is initialized with 0 value before starting the loop, find the aggregate value of sum after completion of loop statements.

```
1 for (i=7; i<7; i++)  
2 {  
3     sum=((i!=2 && i!=3)?sum+i:sum);  
4 }
```

- A. 15
- B. 16
- C. 17
- D. 18

**Answer:** Option B

**Q5.** Which of the following combinations forms the correct example combo for Greedy and Divide & Conquer Algorithms?

A.

Greedy	Divide and Conquer
<ul style="list-style-type: none"> <li>• Multiplication, Knapsack problem</li> <li>• Job Scheduling Problem</li> <li>• Graph - Map Colouring</li> </ul>	<ul style="list-style-type: none"> <li>• Closest Pair (or Points)</li> <li>• Traveling Salesman</li> <li>• Binary Search</li> <li>• Strassen's Matrix</li> </ul>

B.

Greedy	Divide and Conquer
<ul style="list-style-type: none"> <li>• Strassen's Matrix</li> <li>• Multiplication, Knapsack Problem</li> <li>• Job Scheduling Problem</li> <li>• Graph - Map Colouring</li> </ul>	<ul style="list-style-type: none"> <li>• Closest Pair (or Points)</li> <li>• Traveling Salesman</li> <li>• Binary Search</li> </ul>

C.

Greedy	Divide and Conquer
<ul style="list-style-type: none"> <li>• Strassen's Matrix</li> <li>• Job Scheduling Problem</li> <li>• Closest Pair (or Points)</li> </ul>	<ul style="list-style-type: none"> <li>• Traveling Salesman</li> <li>• Binary Search</li> <li>• Graph - Map Colouring</li> <li>• Multiplication, Knapsack Problem</li> </ul>

D.

Greedy	Divide and Conquer
<ul style="list-style-type: none"> <li>• Multiplication, Knapsack Problem</li> <li>• Job Scheduling Problem</li> <li>• Graph - Map Colouring</li> <li>• Traveling Salesman</li> </ul>	<ul style="list-style-type: none"> <li>• Closest Pair (or Points)</li> <li>• Binary Search</li> <li>• Strassen's Matrix</li> </ul>

**Answer:** Option D

**Q6.** Find the output of the following code.

```
1 int main ()
2 {
3     int a,b,c;
4     printf("Enter value of a & b\n");
5     c=scanf("%d", &a, &b);
6     printf("%d",c);
7     getch();
8     return 0;
9 }
```

Enter your answer ONLY as a numeral in the box.

**Answer:** 1

**Q7.** What will be the prefix conversion of the following postfix expression?

Postfix expression: IJK/-LM/N-\*

- A. \*-I/JK/LMN
- B. \* I / J K - / L M N
- C. \* - I / J K / - L M N
- D. \* - I J K / - / L M N

**Answer:** Option A

**Q8.** 6-Sigma Standard is developed in which organization?

- A. Ericson
- B. ANSI - American National Standard Institute
- C. ECMA - European Computer Manufacturing Association
- D. Motorola, Inc

**Answer:** Option D

**Q9.** What would be the output of the following code?

```
1 class HelloWorld
2 {
3     private int num;
4     private HelloWorld()
5     {
6         num=10;
7     }
8 }
9 public class Main
10 {
11     public static void main(String[] args)
12     {
13         HelloWorld h = new HelloWorld();
14         System.out.println(h.num);
15     }
16 }
```

- A. Compilation Error
- B. Null
- C. 10
- D. Runtime Error

**Answer:** Option A

## Coding

**Q1.** For annual sports events, the college is selecting members in a team for national level games. For one of the games, Team selection criteria is height. Candidates who wish to be part of that team for any game fill the registration form. So far a Game A, from N number of registered candidates only M number of candidates will be selected based on their heights. Height[] is an array of float representing heights of registered candidates whose names are maintained in a string array candidates [] at the same index position as of Height[].

The problem is to identify the members selected for Team for Game A.(Display the Names of selected candidates)

Inputs are as follows

1. Number of required players required to form a team -  
<Integer>
2. Names of registered participants. Users can enter N number of names. Names should be string values.

3. Heights[] of candidates whose names are taken above maintaining the mapping with names and heights. Number of inputs of heights should be equal to the number of inputs of names
4. Q or q should be pressed to stop taking input of names
5. Non integer values should be pressed to stop taking input of height

### Example 1

#### Input Values

8

PRATIK

JOY

NIMESH

NIKHIL

SURESH

RAMESH

JITU

ASHISH

SWAYAM

HARSH

LARA

MITESH

SANTOSH

RAJ

Q

5.6

5.4

5.5

5.5

5.6

5.4

5.7

5.9

6.1

6.2

6.5

6.8

7.1

6.8

**OUTPUT VALUES**

SANTOSH

RAJ

MITESH

LARA

HARSH

SWAYAM

ASHISH

JITU

Solution in C++:

```
1 #include<iostream>
2 using namespace std;
3 int main()
4 {
5     int n;
6     cin>>n;
7     if(n<=10)
8     {
9         int age,normal=0,senior=0,i;
10        for(i=0;i<n;i++)
11        {
12            cin>>age;
13            if(age>=10 && age<=100)
14            {
15                if(age>60 && senior<5)
16                    senior++;
17                else if(age<=60)
18                    normal++;
19            }
20            else
21                normal++;
22        }
23        else
24        {
25            cout<<"INVALID INPUT";
26            return 0;
27        }
28        cout<<"QUEUE1 TIME:"<<normal*15<<" mins"<<endl;
29        cout<<"QUEUE2 TIME:"<<senior*15<<" mins"<<endl;
30    }
31    else
32        cout<<"INVALID INPUT";
33 }
```

**Q2.** An organization is conducting eye checkup camp, the number of people allowed for registration is 10. A person is supposed to enter his age for registration. If a senior citizen above 60yrs age registers then he is shifted to another queue which will be 2nd queue, now two separate queues are created for checkup. The 2nd queue will be for senior citizens. If the number of people in the 2nd queue becomes 5 then shifting of senior citizens from 1st queue to 2nd queue is stopped. Suppose eye checkup takes approximately 15 mins per person, then calculate the total number of time taken for checkup by first queue and second queue respectively. Number of person Registrations 'N' for checkup,  $1 \leq N \leq 10$  Age of person, 'A'  $10 \leq A \leq 100$

Note:

1. Output should be in the format:  
QUEUE1 TIME: <integer> mins  
QUEUE2 TIME: <integer> mins

If age is below 10 or above 100 display "INVALID INPUT"/

Note:

1. **Output should be in the format:**  
QUEUE1 TIME: <integer> mins  
QUEUE2 TIME: <integer> mins
2. **If age is below 10 or above 100 display "INVALID INPUT"**



Solution in C++:

```
1 #include<iostream>
2 #include<string>
3 using namespace std;
4 int main(){
5     string s[100],in;
6     int total=0,count=0,n;
7     cin>>n;
8     cin>>in;
9     while(in!="q" && in!="Q")
10    {
11        s[count++]=in;
12        cin>>in;
13    }
14    float height[count];
15    for(int i=0;i<count;i++)
16        cin>>height[i];
17    for(int i=0;i<count-1;i++)
18    {
19        for(int j=0;j<count-i-1;j++)
20        {
21            if(height[j]<height[j+1])
22            {
23                float temp;
24                string stemp;
25                temp=height[j];
26                height[j]=height[j+1];
27                height[j+1]=temp;
28
29                stemp = s[j];
30                s[j] = s[j+1];
31                s[j+1] = stemp;
32            }
33        }
34    }
35    for(int i=0;i<n;i++)
36        cout<<s[i]<<endl;
37 }
```