

This document details the Slot Analysis as well as Answers to Questions that students recollected post their TCS NQT(Slot 2) on 25th 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
- Data sufficiency
- Syllogisms
- Statements and Assumptions
- Odd one out
- 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

Coding:

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

Slot Analysis

- The assessment platform used was TCS iON.
- **A few questions in Numerical Ability did not have the correct answer in the options. In this case, please take the liberty to mark any option.**
- 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.

Questions with Answers:

Numerical Ability

Q1. The monthly expenses in a boarding house are partly fixed and partly a multiple of the number of boarders. It is Rs. 78660 and Rs 94884 when the numbers of boarders are 62 and 75 respectively. What is the monthly expense (in Rs) when the number of boarders is 80?

- A. 101534
- B. 101124
- C. 100804
- D. 100926

Answer: Option B

Q2. What is the sum (in Rs) which when divided among A, B, C, D in the proportion 2:3:5:8 provides Rs 8420 less to D than what it provides to him when the proportion is

$$\frac{1}{2} : \frac{1}{3} : \frac{1}{5} : \frac{1}{8}$$

- A. 25020
- B. 12510
- C. 37530
- D. 17540

Answer: Option A

Q3. A number is divided by 1001 ($=7 \times 11 \times 13$) and it was divided in succession by 7, 11 and 13, to obtain the remainders 4, 6 and 12 respectively. What would have been the remainder if the number was divided directly by 1001?

- A. 828
- B. 982
- C. 764
- D. 970

Answer: Option D

Q4. At an election between two candidates A and B, all the eligible candidates had voted, but 4% of votes were not valid. A, the winner got support from 52% of the voters and defeated B by 600 votes. What was the total number of votes?

- A. 7500
- B. 8000
- C. 6250
- D. 6000

Answer: Option A

Q5. 72 men are engaged for a task with a timeline given beforehand. It is found that in $38\frac{6}{13}\%$ of the given time 36% of the task is accomplished. How many additional men are to be engaged so that the timeline can be met?

- A. 12
- B. 8
- C. 6
- D. 9

Answer: Option B

Q6. The average speed of X always turns out to be 150% that of Y, who can travel 20 km in 3 hr 36 min. If X sets on a journey of 150 km and stops for half an hour each at two stages in between, what will be the total time (in hours) he had been on move?

- A. 15
- B. 17
- C. 13.5
- D. 16.5

All the answer options are wrong.

Correct Answer: 18

Q7. The radius of a solid sphere and a solid right circular cone are equal and the height of the cone is equal to the diameter of its base. They are melted and the combined matter is recast into a solid hemisphere. What is the ratio of the radius of the hemisphere to that of the circle?

- A. $\sqrt[3]{4}$
- B. $\sqrt[3]{3}$
- C. $\sqrt[3]{6}$
- D. $\sqrt[3]{2}$

Answer: Option D

Q8. A sum invested in a scheme where the interest gets compounded quarterly grows to Rs.140000 and Rs.157304 respectively in 15 and 21 months respectively. What is the interest per annum?

- A. 6
- B. 12
- C. 24
- D. 15

Answer: Option B

Q9. The average rainfall (in mm) in a city during the months, March to October, of a year calculated over a period of ten years is presented in a tabular form below.

Months	Mar	Apr	May	June	July	Aug	Sept	Oct
Rainfall	44	56	154	312	333	350	288	147

What is the ratio of the average rainfall for the months having three-figure data to that of the same for the rest?

- A. 66 : 25
- B. 264 : 25
- C. 132 : 25
- D. 99 : 50

Answer: Option C

Q10. A person gains Rs.357 on selling a tablet at 13% gain and a chair at 6% gain. If he sells the table at 15% gain and the chair 8% loss, he gains Rs.203. What is the actual cost of the chair?

- A. 2200
- B. 2100
- C. 2400
- D. 1400

Answer: Option D

Q11. What is the simplified value of:

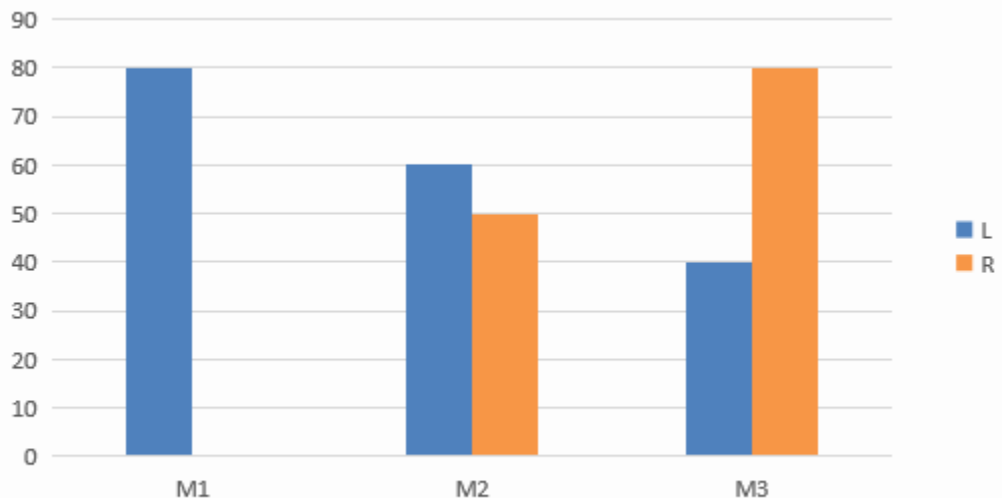
$$\frac{1}{18} \left\{ 7\frac{1}{3} - 2\frac{1}{12} \times \frac{6}{25} \div \frac{1}{4} \text{ of } \left(2\frac{2}{5} - \frac{3}{10} \div \frac{1}{3} \right) \right\}?$$

- A. 2/9
- B. 1/6
- C. 2/3
- D. 1/3

Answer: Option D

Q12. A rural library created lending facilities for only 100 books and kept the lending desk open only on Mondays, which were the days on which it is also took stock of the books. The position of the number of the books lent (L) and returned(R) on the first three Mondays (M1,M2,M3) of

operation in the lending desk is presented through a bar graph below.



How many of these 100 books remained outside the library after stock checking on the third monday?

- A. 30
- B. 50
- C. 60
- D. 40

Answer: Option B

Q13. In a factory, the coefficients of variation of the wages of urban and rural workers are 52% and 66% respectively and their standard deviations are 2600 and 2640 respectively. If 60% of the workers are urban, what is the overall average wage (in Rs) of the workers?

- A. 4450
- B. 4350
- C. 4600
- D. 4200

Answer: Option C

Q14. If two numbers are respectively, 25% and 40% less than the third number, what is the ratio of these two numbers?

- A. 4:5
- B. 5:4
- C. 3:5

D. 3:4

Answer: Option B

Q15. X working alone takes 75 days more than Y to do a work, and working together they complete it in 20 days. If a certain sum has been earmarked as wages for his work, in what ratio should it get distributed among X and Y?

- A. 2 : 5
- B. 2 : 3
- C. 1 : 5
- D. 1 : 4

Answer: Option D

Q16. A room measuring 6m 65cm long and 4m 55cm broad is to be paved with the least number of squared tiles. Then the least number of squared tiles required to cover the floor is

- A. 247
- B. 210
- C. 257
- D. 187

Answer: Option A

Q17. If $x = \frac{\sqrt{12+\sqrt{140}}}{\sqrt{12-\sqrt{140}}}$, what is the value of $(x + \frac{1}{x})^2 - (x - \frac{1}{x})^2$?

- A. 4
- B. 1
- C. 6
- D. 2

Answer: Option A

Q18. The median of the frequency distribution table is _____

Class	50-54	55-59	60-64	65-69	70-74	75-79
Frequency	12	26	30	8	13	11

- A. 61.5
- B. 61
- C. 62.5
- D. 62

Answer: Option D

Q19. What is the simplified value of : $\frac{0.397}{1.2 \times 1.2 + 2 \times 0.66 + 1.1 \times 1.1}$?

- A. 0.001
- B. 1
- C. 0.01
- D. 0.1

Answer: Option D

Q20. 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

Q21. P,Q,R are three cups having capacities of 120,180 and 200 cc respectively which are completely filled with tea of three different varieties. They are all mixed in a separate vessel of capacity more than that of P,Q,R taken together, and then the mixture is poured successively into P,Q,R Then how much (in cc) of Pand Q's tea will be there in R?

- A. 44(P), 76(Q)
- B. 56(P), 64(Q)
- C. 48(P), 72(Q)
- D. 52(P), 68(Q)

Answer: Option C

Q22. If the marks distribution of a number of candidates in an examination, out of 100, are in accordance with the table given below, what is the estimated number of candidates who scored between 58 and 72?

Marks(m)	$m \leq 55$	$55 < m \leq 60$	$60 \leq m \leq 65$	$65 \leq m \leq 70$	$70 \leq m \leq 75$
Number of Candidates	410	40	50	40	30

- A. 118
- B. 122
- C. 112
- D. 120

Answer: Option C

Verbal Ability

Q1. 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: The 1940 version of the movie, Pinocchio, is no exception

S-2:

S-3:

S-4: Surprisingly, his character in the movie is not as prominent as it is in the book.

P: Jimmy cricket appears as the talking cricket in the book

Q:The movie is based on a story that appeared as a serial in a newspaper called The Adventures of Pinocchio written by Carlo Collod

R: It was written in 1881 and 1882

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

Answer: Option C

Q2. Fill in the blanks with the most appropriate pair of words from the options given below.

Information _____ defined as a collection of symbols which, _____ combined, communicates a message or intelligence.

- A. Can be / where
- B. Should / which
- C. Can be / when
- D. Should be / which

Answer: Option C

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

Since sunrise to sunset my grandmother would sit by her wheel spinning and reciting prayers

- A. Since sunrise to sunset
- B. my grandmother would sit by her wheel
- C. No error
- D. spinning and reciting prayers

Answer: Option A

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

In the evening, Bhushan took his seat on the window of that empty house.

- A. On the window
- B. In the evening
- C. Of that empty house
- D. Bhushan took his seat

Answer: Option A

Q5. One part of the sentence below may contain an error, Identify the error.

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

- A. In Lauren's mind
- B. Something about
- C. Way he spoke

D. Stuck a bell

Answer: Option D

Q6 to Q9. Directions: Read the following passage:

The much-delayed Indian Premier League starts Saturday without its customary glitz and glamour, but the Twenty20 tournament is expected to be a welcome relief to cricket fans during the coronavirus pandemic. The short-form extravaganza normally starts in March but, along with other major international sporting events, was postponed as countries went into virus lockdowns. It was then moved to the United Arab Emirates as cases rose in India.

All the eight teams have been in strict, bio-secure 'bubbles' since landing in the UAE, with the competition set to kick off when defending champions Mumbai Indians take on Chennai Super Kings in Abu Dhabi on September 19. There will be no gala opening ceremony for the world's richest T20 league, and the games will be played behind closed doors at three venues including Dubai and Sharjah.

Yet President of the Board of Control for Cricket in India, Sourav Ganguly, expects a surge in viewership for the 13th edition with the matches scheduled for India's evening primetime TV slots.

"There is a positive in everything." commented Sourav Ganguly.

Q6. Based on your understanding of the passage answer the following questions by choosing the best option

The expression 'Bio-secure bubbles' refers to:

- A. Consists of Greek and Iranian characters from history books who die for their country or kingdoms, often in the pursuit of beautiful women.
- B. Safety PPE kit
- C. Social distancing methods
- D. It consists of a staged dance drama about fairy tales, where heroes and heroines dance and sing, performed in small villages.

Answer: Option C

'Bio-secure bubbles' actually refers to an environment which is cut off from the outside world. Everyone engaged in the tournament, including the players, support staff and match officials will be limited only to a few places.

Q7. Which of the following is NOT a relevant criteria for conduct of the 13th IPL series?

- A. The Mahabharata teaches readers about the finest aspects of warfare and martial struggle and how man's ambition can make or break him in the final race.
- B. Venue for IPL will be shifted to the Middle East.
- C. The epic works as a tale of good versus evil in the battle between Pandavas and Kauravas, and also highlights the internal struggle in all of us, which leads to spiritual wisdom.
- D. Matches will be telecast on prime-time slot.

All the answer options are wrong.

Correct Answer: Both Option A and Option C

Q8. Which of the following sentences is indicative of the mood of the general public?

- A. All epics extoll the necessity of valour, the beauty of women and the lure of money and property that is the bane of humankind.
- B. All epics teach us that the common man has to learn about the right and wrong of life only through the stories of the rich and famous.
- C. The games will be played behind closed doors at three venues including Dubai and Sharjah.
- D. The much-delayed Indian Premier League starts on Saturday without its customary glitz and glamour.

All the answer options are wrong.

Answer: All of the answer options are incorrect

The line which mentions the mood of the general public is *"The much-delayed Indian Premier League starts Saturday without its customary glitz and glamour, but the Twenty20 tournament is expected to be a welcome relief to cricket fans during the coronavirus pandemic."* Thus if we had 'relief' as one of our answer options, it would have been right.

Q9. Saurav Ganguly's comment 'There is something positive in everything', implies that he is _____.

- A. Determined
- B. Accident
- C. Adversity
- D. Optimistic

Answer: Option D

Q10. 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: It is neither the size nor the length of the life which makes man human

S-2:

S-3:

S-4: Man is not like a tree

P: The man may physically attain the size of a giant, yet intellectually he may remain a dwarf

Q: The growth of mind and intellect is never in proportion to the growth of the human body

R: My friend's brother was a dwarf

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

Answer: Option C

Q11. Choose the pair of options that are appropriate to complete the sentence

Martin Sir had a reputation as the (1) _____ of principals, but those who knew him well, said he was a (2) _____ man.

Blank 1: A. mad B.tough C.slovenly D.strictest

Blank 2: A.crazy B.family C.effective D.just

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

Answer: Option C

Q12. Two sentences have been removed from the text below. Read the text and then match the missing sentences to fill up Blank 1 and Blank 2. You will need to choose two options out of four - P, Q, R, S - provided:

Unlike undergraduate courses where some students do minimal reading and still succeed, graduate studies require a student to read large volumes of information. Reading at graduate school is the way in which students glean new ideas, theories, models, etc., that contribute to their theses and research papers.

____(1)____ For example, a literature review requires a student to read with great breadth and depth within his/her research area.

____(2)____ The number of documents to read, analyze and synthesize to compile a literature review can be mind boggling.

Options

P. Graduate students are asked to actively engage with the information they read.

Q. Graduate students do not want to read the books available in libraries.

R. Books are a man's best friend.

S. Then the ideas are synthesized into a unified whole.

A. QS

B. RS

C. SP

D. PS

Answer: Option D

Q13. You are going to read a text about fighting pollution. 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.

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'.

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

Answer: 1- C, 2-A

Q14. Fill in the blanks with the most appropriate pair of words from the options given below.

As WHO and partners work together on the response - tracking the pandemic, _____ on critical interventions, distributing vital medical supplies to those in mind - they are still _____ to find a vaccine.

- A. Advising / race
- B. Advising / racing
- C. Advise / racing
- D. Advised / raced

Answer: Option B

Q15. Which of the following sentences does NOT use informal language?

- A. The professor's lecture was way over my head.
- B. Can you pick up ice on your way back?
- C. Sorry, I could not come by last night.
- D. Sorry, I could not attend your party last night.

Answer: Option A

Q16. Direction: Read the following passage and answer the questions below.

Despite the setback caused by the COVID-19 pandemic and schedules being affected, the Indian Space Research Organisation (ISRO) has continued to slowly pursue its two ambitious missions - the Gaganyaan and Chandrayaan-3. Even as officials had said that the staffers were working from home through the lockdown, several have started heading to their workspaces through the lockdown 4.

Using the payload on Chandrayaan-2 orbiter, which has three optical heads (unlike the single optical head of Chandrayaan-1 orbiter), the space agency has a greater resolution and a stereo view of the moon. The image data will also help them decide and fine tune the point of touchdown of the lander. Since the Chandrayaan-2 orbiter is working to capacity, the upcoming mission will only have a lander and rover which will be taken to the moon by a propulsion module. The chances of success at Chandrayaan-3 are being increased with the space agency using the robust data acquired by Chandrayaan-2 orbiter. Director of Vikram Sarabhai Space Centre S Somanth recently iterated that the Human spaceflight programme was significant. Drawing a comparison with other countries like the USA, he said Human Space Travel is a capacity we need to create even under stress as the capability will be essential for the future.

Q16. What is the passage about?

- A. Significance of space programs for the future.
- B. Working under constraints
- C. Meeting the target deadlines
- D. Commitment of the scientists at ISRO

Answer: Option A

Reasoning Ability

Q1. Among six members of the family O,P,Q,R,S and T, how many are females?

Statements:

- I. O is the wife of P and mother of T, R is grandmother of O and mother of P
- II. T is the grandmother of S

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

Answer: Option C

Q2. A statement is followed by two assumptions numbered I and II. Consider the statement and decide which of the following assumption(s) is/are implicit in the statement

Statement

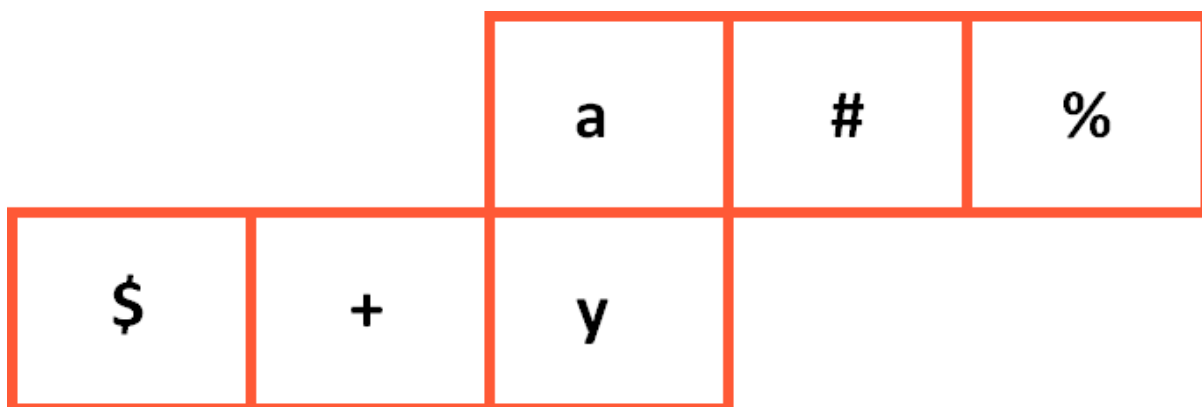
The educational framework now requires to go through a process of change so as to cater to the individuals according to their interests and talents.

Assumptions

- I. The current educational system is geared to mainstream individuals without due regard to their unique personalities
 - II. Learners find less scope for their nurturing their individual interests and talents in the present system
-
- A. Only I is implicit
 - B. Only II is implicit
 - C. Neither I nor II is implicit
 - D. Both I and II are implicit

Answer: Option D

Q3. 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. a
- B. +
- C. \$

D. Y

Answer: Option A

Q4. Which is the wrong term in the given series?

vcu, teo, qhj, mle, hqc, bwa

- A. hqc
- B. bwa
- C. teo
- D. mle

Answer: Option D

Q5. Seven friends P, Q, R, S, T, U and V are sitting in a circular table facing the center.

- I. P is between T and U
- II. V is between Q and R
- III. S is left of U and Right of Q

Who is exactly right of R?

- A. U
- B. P
- C. V
- D. Q

Answer: Option C

Q6. Four 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:

- 1. Some papers are pens
- 2. Some pens are books
- 3. Some books are flowers

Conclusions:

- I. Some flowers are papers
- II. Some books are papers
- III. Some papers are books

IV. No flower is paper

- A. Either I or IV follows
- B. Either II or III follows
- C. Either I or IV follows
- D. Either I or II follows

Answer: Option C

Q7. In a certain code, P @ R means P is the wife of R. P \$ R means P is the husband of R. P # R means P is the son of R.

Which of the following equations shows that Z is the mother-in-law of W?

- A. W @ X \$ Y # Z
- B. W # Z @ Y \$ X
- C. W \$ X # Y @ Z
- D. W @ X # Y \$ Z

Answer: Option D

Q8. Among 5 objects P, Q, R, S and T:

- I. R is twice as heavy as T
- II. P and S together are as heavy as Q and R together
- III. P and R together are as heavy as Q and T together
- IV. P and Q together are one and half time as heavy as R and S together.

Which among the five is the heaviest of all?

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

Answer: Option C

Q9. A statement is followed by two arguments numbered I and II. Decide which of the argument is/are strong (important and directly related to the question) and which is/are weak (not important or not related to the central message of the question)

Statement:

Should there be a ban on advertising a medicine?

Argument:

- I. No it is the age of advertising, without advertising, awareness about a health product gets restricted.
 - II. Yes, the money spent on advertising is very huge and it inflates the cost of medicine
-
- A. Only argument II is strong
 - B. Both argument I and II are strong
 - C. Only argument I is strong
 - D. Both arguments I and II are not strong

Answer: Option B

Q10. There is a group of five friends P, Q, R, S and T. P is second in height but younger than R. Q is taller than S but younger in age. R and S are of the same age but R is shortest in the group. T is taller than Q and elder to R. P is not the youngest in group.

Who will be in the third position, if all the friends are arranged in ascending order of the heights?

- A. Q
- B. S
- C. R
- D. T

Answer: Option A

Q11. In a certain code, P + R means P is the son of R; P - R is the wife of R and P × R means P is the father of R.

If A+B-Q+S, then which of the following is true?

- A. A is the grandson of S.
- B. S is the uncle of A.

- C. A is the brother of S.
- D. A is the sister of S.

Answer: Option C

Q12. 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

Q13. Eight cricket teams A, B, C, D, E, F, G and H played one-day matches with one another. Every team played one match with every other team at the league stage. In each match, the winning team earned 2 points and the losing team did not earn any point. A won only 1 match; B lost only one match; C lost 3 matches and earned 2 points more than D. E earned 4 points more than G and G earned the same point as that of H. E and F together earned 16 points.

After the league match, the top two teams as per the league points table played the final match and the team scoring the second highest point at the league stage won.

Which team won in the final?

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

Answer: Option C

Q14. Read the following information carefully and answer the given question:

A public charitable organization desires to select a candidate for the post of programme Coordinator for a health project, based on the following criteria:

The Candidate must

- (i) hold B.E. degree with minimum 60% marks and above
- (ii) have an experience of 5 years in the relevant field
- (iii) be ready to execute a bond of three years of service

Incase of the applicant who satisfies all other criteria except -

1. At (i) above, but has B.E. degree with minimum 55% marks but has completed M.Tech with 50%, his/her case is to be referred to the secretary.
2. At (ii) above, but has 3 years full time experience as a programme manager, his/her case is to be referred to the project director
3. At (iii) above, but is ready to give Rs.30,000/- as secure money, his/her case is to be referred to the president of the trust

Based on the criteria and information provided decide the course of action.

Suresh has completed B.E. Degree with 62% marks and he has been working as project manager for the last 3 years in a Government funding health project. He is ready to execute a bond of three years of service. What decision would be taken for him?

- A. Refer to project director
- B. Refer to secretary of trust
- C. Refer to president of trust
- D. He would be selected

Answer: Option A

Q15. A statement is followed by three courses of action numbered I, II and III. Assuming everything in the statement to be true, decide which of the suggested courses of action (a decision to be taken for follow up/improvement in regard to the problem) logically follow(s) for pursuing

Statement:

Of late, it has come to the notice of the municipal authorities that a large section of people in certain sector are suffering from water-borne diseases

Course of Action:

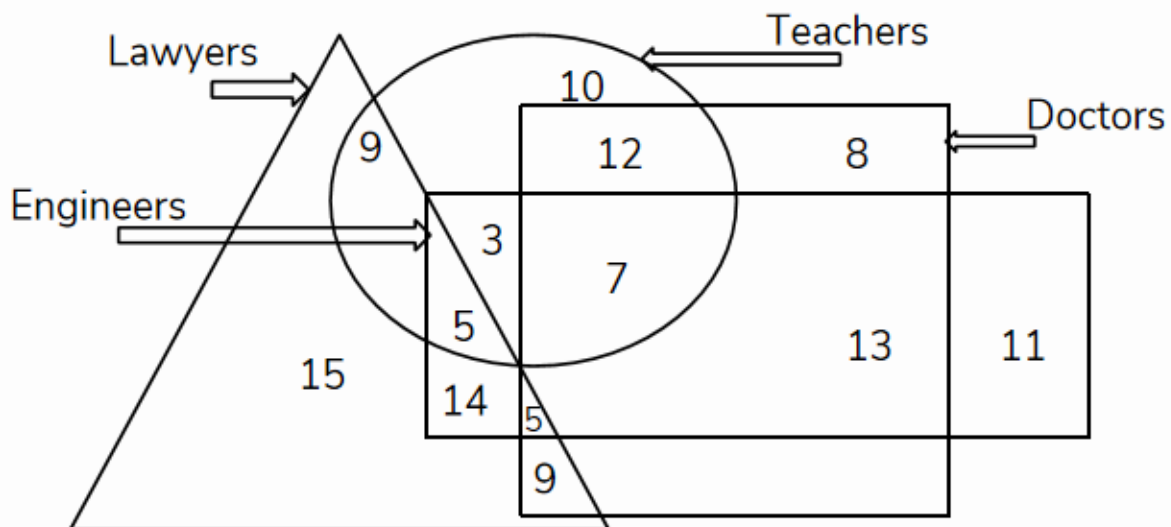
1. All the hospitals and health care workers should be kept on high alert to address the emerging situation and proper medical attention to the affected
2. A body of specialists should soon be constituted to survey water supply network in the city to correct any systematic errors responsible for spreading the diseases
3. The municipal authority should issue an advisory warning to people not to drink piped water and depend on other water sources

- A. All of 1,2 and 3 follow
- B. Only 2 follows
- C. Only 1 follows
- D. Only 1 and 2 follow

Answer: Option D

Q16. In the following diagram, the rectangle stands for 'Engineers'; the circle stands for 'Teachers'; the triangle stands for 'Lawyers', and the square for 'Doctors'. The numbers in different segments show the number of persons.

Answer the question on the basis of the information given in the diagram.



How many engineers are lawyers as well as doctors?

- A. 9

- B. 14
- C. 7
- D. 5

Answer: Option D

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

Four subjects were taught i.e. Hindi, English, Math and Science in four consecutive periods of one hour each starting from 8.00 am. At what time was the science period scheduled?

Statements:

- I. Mathematics period started from 9.00 am which was preceded by hindi
- II. English was scheduled in the last
- III. Hindi period was scheduled sometime before science

- A. Statement I alone is sufficient
- B. Statements I and II together are sufficient
- C. Statement III alone is sufficient
- D. Statement II alone is sufficient

Answer: Option B

Programming Logic

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

```
1 public class Main
2 {
3     public static void main(String args[])
4     {
5         System.out.println("ab\raba\r");
6     }
7 }
```

Type your answer here:

Answer:

ab
aba

Q2. _____ function is used to show a key pressed by a user will appear on the screen.

- A. getch()
- B. getsf()
- C. gfets()
- D. getch()

Answer: Option A

Q3. When we implement stack by using linked list then:

- A. insertion of node is done from beginning and deletion from beginning
- B. insertion of node is done from end & deletion from end
- C. insertion of node is done from end & deletion from beginning
- D. insertion of node is done from beginning and deletion from end

Answer: Option A

Both A and B can be correct. If insertion and deletion happens at the same end it is stack and if it happens at different ends it is Queue. Here the best among A and B is Option A

Q4. The primary mission of an analyst or systems designer is to:

- A. calculate the Return on Investment
- B. development of Software Evaluation Tool
- C. create a Data Flow Diagram
- D. extract the physical requirements of the users and convert them to software

Answer: Option D

Q5. _____ is a process to identify the key aspects of an entity and hiding the rest.

- A. Encapsulation
- B. Inheritance
- C. Abstraction
- D. Polymorphism

Answer: Option C

Q6. Among the following loops which is a post tested loop?

- A. while
- B. do-while

- C. for
- D. If

Answer: Option B

Q7. Which one is not a type of topology?

- A. Star-topology
- B. Circuit-topology
- C. Ring-topology
- D. Bus-topology

Answer: Option B

Q8. Assume: Linked list as head -> 2 -> 4 -> 6 -> 8

```
1 struct emp
2 {
3     int emp-id;
4     structemp *next;
5 };
6 structemp *head,*temp;
7 temp = head;
8 while(temp->next!= NULL)
9 {
10     printf("%d", temp -> emp_id);
11     temp = temp -> next;
12 }
```

What will be the output of the given program?

- A. 2460
- B. 2468
- C. 246
- D. 246NULL

Answer: Option C

Q9. Predict the output.

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

- A. No output
- B. 20
- C. 0
- D. Compilation Error

Answer: Option A

Q10. What would be the Time Complexity of below Code? Type your answer:

```
1 #include<stdio.h>
2 void main()
3 {
4     int count = 11;
5     for(int i = 1; i <= count; i++) {
6         printf("Time Complexity!!");
7     }
8 }
```

Answer:

O(11) or O(count)

Coding:

Q1. There are a total number of Monkeys sitting on the branches of a huge Tree. As travelers offer Bananas and Peanuts, the Monkeys jump down the Tree. If every Monkey can eat k Bananas and j Peanuts. If Total m number of Bananas and p number of Peanuts offered by Travelers, calculate how many Monkeys remain on the Tree after some of them jumped down to eat.

At a time, one Monkey gets down and finishes eating and goes to the other side of the road. The Monkey who climbed down does not climb up again after eating until the other Monkeys finish eating. Monkeys can either eat k Bananas or j Peanuts. If for the last Monkey there are less than k Bananas left on the ground or less than j Peanuts left on the ground, only that Monkey can eat Bananas ($<k$) along with the Peanuts ($<j$).

Write the code to take inputs as n, m, p, k, j and return the number of Monkeys left on the Tree.

Where, n = Total number of Monkeys

k = Number of eatable Bananas by a single Monkey (Monkey that jumped down last may get less than k Bananas)

j = Number of eatable Peanuts by a single Monkey (Monkey that jumped down last may get less than Bananas)

m = Total number of Bananas

p = Total number of Peanuts

Remember that the Monkeys always eat Bananas and Peanuts, so there is no possibility of k and j having a value zero.

Example 1:**Input Values**

20

2

3

12

12

Output Values

Number of Monkeys left on the Tree: 10

Note: Kindly follow the order of inputs as n, k, j, m, p as given in above example. And output must include the same format as in above example(Number of Monkeys left on the Tree:<Integer>)

For any wrong input display INVALID INPUT

Solution in C++:

```
1 #include<iostream>
2 using namespace std;
3 int main()
4 {
5     int n, k, j, m, p;
6     cin >> n >> k >> j >> m >> p;
7     int ans = 0;
8     if(k < 0 || n < 0 || j < 0 || m < 0 || p < 0)
9     {
10         cout << "INVALID INPUT";
11         return 0;
12     }
13     ans = ans + (m/k);
14     ans = ans + (p/j);
15     cout << n - ans;
16     return 0;
17 }
```

Q2. Chain Marketing Sales Organization has a scheme for income generation through which its members generate income for themselves. The scheme is such that suppose A joins the scheme and makes Rand V to join this scheme then A is Parent Member of R and V who are child Members. When any member joins the scheme then the parent gets a total commission of 10% from each of its child members.

Child members receive commission of 5% respectively.

If a Parent member does not have any member joined under him, then he/she gets commission of 5%.

Take the Name of the Members Joining the Scheme as input.

Display how many members joined the scheme including parent members, Calculate the Total commission gained by each member in the scheme. The fixed amount for joining the scheme is Rs.5000 on which commission will be generated.

Scherne Amount=5000

Example 1: When there are more than one child members

Input: (Do not give Input Prompts. Accept values as follows.)

Amit	//Enter Parent Member Name as this
Y	//Enter Y if Parent Member have child members otherwise enter N
Rajesh, Virat	//Enter Name of child members of Amit in comma separated

Output: (Final output must be in format given below.)

TOTAL MEMBERS: 3

COMMISSION DETAILS

Amit: 1000 INR

Rajesh: 250 INR

Virat: 250INR

Example 2: When there is only one child member in the hierarchy

Input:

Amit
Y
Rajesh

Output:

TOTAL MEMBERS: 2

COMMISSION DETAILS

Amit: 500 INR

Rajesh: 250 INR

Solution in C++:

```
1 #include<bits/stdc++.h>
2 #define ll long long
3 using namespace std;
4 int main()
5 {
6     string par;
7     cin >> par;
8     string x;
9     cin >> x;
10    if (x == "N") {
11        cout << "TOTAL MEMBERS:1\n";
12        cout << "COMMISSION DETAILS\n";
13        cout << par << ":250 INR\n";
14    } else {
15        string child;
16        cin >> child;
17        vector<string>v;
18        string temp = "";
19        for (int i = 0; i < child.length(); i++) {
20            if (child[i] == ',') {
21                v.push_back(temp);
22                temp = "";
23            }
24            else if (child[i] != ' ')
25                temp += child[i];
26        }
27        v.push_back(temp);
28        cout << "TOTAL MEMBERS:" << v.size() + 1 << "\n";
29        cout << "COMMISSION DETAILS\n";
30        cout << par << ":" << v.size() * 500 << " INR\n";
31        for (auto a : v) {
32            cout << a << ":" << "250 INR\n";
33        }
34    }
35 }
```

This document details the Slot Analysis as well as Answers to Questions that students recollected post their TCS NQT(Slot 3) on 26th 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

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

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

Coding:

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

Slot Analysis

- The assessment platform used was TCS iON.
- **All the programming MCQs were same as yesterday's second slot questions (25th Oct)**
- 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 x and y are two positive integers such that $(4x^2 - 3y^2) : (2x^2 + 3y^2) = 37:59$. What is the value of $x:y$?

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

Answer: Option D

Q2. A man travels 240 Km partly by a train and partly by a car. If he covers 160 Km by the train and rest by the car, it will take 3 hours 30 minutes. But if he travels 100 Km by the train and the rest by the car. It will take 15 minutes more. What is the speed of the train?

- A. 90 kmph
- B. 60 kmph
- C. 100 kmph
- D. 80 kmph

Answer: Option D

Q3. What is the product of $(3\sqrt{3} - 5)$ with the positive square root of $\{6 + 2\sqrt{3} / 33 - 19\sqrt{3}\}$?

- A. 1

- B. $\sqrt{3}$
- C. 2
- D. $2\sqrt{3}$

Answer: Option C

Q4. The Marks of 10 students in an English test are given below:

10, 21, 22, 35, 37, 13, 16, 18, 24, 34

What is the population standard deviation of the data?

- A. 9.0
- B. 8.9
- C. 8.8
- D. 9.3

Answer: Option A

Q5. If 3 men and 4 women can finish the work in 24 days, 4 men and 8 women can finish the same work in 15 days, in how many days will it take for one man alone to finish the same work?

- A. 200 days
- B. 150 days
- C. 120 days
- D. 240 days

Answer: Option C

Q6. An arc of a circle subtends an angle 36° at a point on its circumference. What is the area (in cm^2) of the sector if the arc of its length is $3\pi / 5$ cm?

- A. $3\pi / 8$
- B. $9\pi / 10$
- C. $9\pi / 20$
- D. $3\pi / 16$

Answer: Option B

Q7. If mean of 29 observations is 33 and on adding one more observation in the new mean it becomes 34. What is the value of the 30th observation?

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

Answer: Option B

Q8. Gopi gave 30% of the money he had to his parents, 15% of the remaining money to each of his 2 children, one-third of the money now left was spent for his personal expenses and the remaining money Rs.9800 was deposited in the bank. How much money did Gopi gave initially?

- A. Rs.40000
- B. Rs.32000
- C. Rs.30000
- D. Rs.42000

Answer: Option C

Q9. If 14 men working 8 hours a day, can reap a field in 18 days, in how many days will 9 men reap the field working 7 hours a day?

- A. 16 days
- B. 20 days
- C. 28 days
- D. 32 days

Answer: Option D

Q10. If $5^x 3^y = 225 \times 405$, find the value of X^{2Y-3X} ?

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

Answer: Option B

Q11. The number of 10 paisa, 20 paisa, 25 paisa and 50 paisa coins contained in the bag are in the ratio $\frac{1}{6} : \frac{1}{4} : \frac{1}{3} : \frac{1}{2}$, amounts to Rs.240. The total amount of 25 paisa and 50 paisa coins is

- A. Rs.150
- B. Rs.180
- C. Rs.200
- D. Rs.160

Answer: Option C

Q12. Sarita wants to gift a stationery kit which includes a pencil, an eraser and a sharpener to some kids in her village. She went to a wholesaler for purchasing these items. The seller sells pencils in packing of 12, erasers in a packing of 18, and sharpeners in a packing of 10. She purchases the minimum number of packets of pencils, erasers and sharpeners so that a fixed number of kits can be prepared without any item being unused or short. What is the number of packets of pencils purchased by her?

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

Answer: Option D

Q13. The ratio of incomes of two persons A & B is $\frac{1}{9} : \frac{1}{13}$ and the ratio of their expenditure is $\frac{1}{5} : \frac{1}{7}$. If person A saves Rs.5000 per month and person B saves Rs.3000 per month. What is the sum of their monthly incomes?

- A. Rs.26000
- B. Rs.18000
- C. Rs.22000
- D. Rs.44000

Answer: Option D

Q14. A person invested a certain amount in two different schemes A and B at the rate of interest 10% and 15% respectively. If the amount invested in scheme B was two-third of the

amount invested in scheme A and the total interest in one year was Rs.2400, what was the amount invested in scheme B?

- A. Rs.12000
- B. Rs. 9000
- C. Rs. 7000
- D. Rs. 8000

Answer: Option D

Q15. The daily expenditure of a sports coaching camp is Rs.12200 when there are 30 male and 20 female members. When the number of females and males increase by 25% and 10% respectively, the daily expenditure turns out to be Rs.14170. What would have been the daily expenditure (in Rs) if the number of females and males had increased by 10% and 20% respectively?

- A. 14350
- B. 14140
- C. 14230
- D. 13920

Answer: Option D

Q16. Mr.Raju lent out a certain sum on S.I and the same sum on C.I at a certain rate of interest p.a. If the ratio between the difference of C.I and S.I of 2 years and 3 years is 10 : 31, what is the rate of interest p.a?

- A. 12.5%
- B. 7.5%
- C. 10%
- D. 15%

Answer: Option C

Q17. If the mean of 6, 8, 12, 16, t, 22, 26 is t, what is the value of t?

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

D. 20

Answer: Option B

Q18. A person bought a bicycle for a certain amount of money. He spent 15% of the cost on repairs and sold it for a profit of Rs.1150. How much did he spend on repairs if he made the profit of 25%?

- A. Rs. 500
- B. Rs. 650
- C. Rs. 550
- D. Rs. 600

Answer: Option D

Q19. What would be the volume of hemisphere whose T.S.A is 108π sq.cm?

- A. 144π cc
- B. 288π cc
- C. 216π cc
- D. 72π cc

Answer: Option A

Q20. A person is able to buy 2kg more for Rs.198, due to a reduction of $8\frac{1}{3}\%$ in the price of rice. What is the difference between the original and the reduced rate of rice per kg?

- A. Rs.0.75
- B. Rs. 0.50
- C. Rs. 0.25
- D. Rs. 1.00

Answer: Option A

Q21. The speed of a bus increases by 3 km after every one hour. If the distance travelled in the first one hour was 45 Km, what was the total distance travelled in 15 hours?

- A. 725 Km

- B. 900 Km
- C. 990 Km
- D. 675 Km

Answer: Option C

Q22. What is the value of $(0.000216)^{\frac{1}{3}} + (\sqrt{0.000064})^{\frac{1}{2}} / (0.000343)^{\frac{1}{3}} + (0.000729)^{\frac{1}{3}}$?

- A. 1.125
- B. 1.625
- C. 2.125
- D. 0.500

Answer: Option B

Q23. What is the median time for the period, 1st february to 20th september, of a leap year ?

- A. 12 Noon of 27th May
- B. 12 Noon of 28th May
- C. Midnight between 26th and 27th May
- D. Midnight between 27th and 28th May

Answer: Option A

Verbal Ability

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

Swami Vivekananda dies at an early age /of 39 years on July 4, 1902 due to a rupture in /one of the blood vessels of his brain.

- A. No error
- B. Swami Vivekananda dies at an early age
- C. one of the blood vessels of his brain
- D. of 39 years on July 4, 1902 due to a rupture in

Answer: Option B

Q2. Fill in the blanks with the most appropriate pair of words from the options given below:

Aarogya Setu is a mobile application developed by the Government of India _____ hotspots, hence _____ the spread of Covid.

- A. from identified/ aids in curbing
- B. on identification/ aiding to curb
- C. to identify/ aiding in curbing
- D. for identifying/ aids to curbing

Answer: Option C

Q3. 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.

S1. "Unemployment", may be defined as a phenomenon wherein an individual who is fit and willing to work is not able to find work.

S2.

S3.

S4. The unemployment rate of a country is indicative of its socio-economic health.

P. Similarly, the term 'labour force' is applied to the total number of individuals within the population who are willing and capable of doing work.

Q. And the unemployment rate is usually measured in percentages, the number of individuals without work out of the total labour force of the country or specific social groups.

R. The most accepted classification of unemployment recognizes two broad types: Voluntary and involuntary unemployment.

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

Answer: Option B

Q4. For the four-sentence (S1 to S4) paragraph below, sentences S1 and S4 are given. From the options P, Q and R, choose the appropriate sentences for S2 and S3 respectively.

S1: The tourism and transport industry is in total shambles due to the lockdowns during the current pandemic caused by Covid 19.

S2: _____

S3: _____

S4: Many organizations have mounted a 360° virtual tour to allow the potential tourists to get a foretaste of the real thing.

P: To combat this problem, the governments across the globe, tourist destinations and other players have come up with the novel idea of offering virtual tours to the general public.

Q: The New York city's Broadway is streaming its famous productions through social media.

R: By doing so, they are not only providing relief to the people staying put in their homes by showcasing popular destinations but also promoting themselves amongst their target customers.

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

Answer: Option D

Q5. The Mughal Emperor Akbar, _____ 25th October 1605, shortly _____ his 63rd birthday due to yesterday.

- A. dies on/ when
- B. died on/ after
- C. died at/ after
- D. died in/ before

Answer: Option B

Q6. One part of the sentence below may contain an error. Identify the part. If there is no error, choose "No error".

The 9.2 km Atal Tunnel at Rohtang in Himachal Pradesh is the longest highway tunnel in the world /connecting Manali to Lahaul-Spiti valley.

- A. The 9.2 km Atal Tunnel at Rohtang in Himachal Pradesh
- B. No error
- C. is the longest highway tunnel in the world
- D. connecting Manali to Lahaul-Spiti valley

Answer: Option D

Q7. You are going to read a text about glaciers. Some sentences are missing from the text.

Choose from the list (A-C) the most appropriate sentence for each gap (1-2) in the text. There is one extra sentence that you do not need to use.

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

Specifically, since the industrial revolution, carbon dioxide and other greenhouse gas emissions have raised temperatures, even higher in the poles. ____2____ Scientists project that if emissions continue to rise unchecked the Arctic could be ice free in the summer as soon as the year 2040 as ocean and air temperatures continue to rise rapidly.

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

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

Answer: Option A

Q8. 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: A global partnership will be making 120 million rapid coronavirus tests available to 133 economically less-advantaged nations at heavily discounted prices, the World Health Organization (WHO) announced.

S-2:

S-3:

S-4: The plan is the result of a series of agreements between the two pharmaceutical companies and several nonprofit organizations and the Global Fund.

P. They will cost the purchasing nations \$5 or less apiece.

Q. Testing is a critical cornerstone of the COVID-19 response, enabling countries to trace and contain the virus now.

R. The tests will be supplied by U.S.-based Abbott and South Korea's SD Biosensor, over a period of six months.

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

Answer: Option D

Q9. You are going to read a text about working with a remote team. 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.

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 realized 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 a 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'

A. (1) B, (2) A

B. (1) A, (2) C

C. (1) A, (2) B

D. (1) C, (2) A

Answer: Option D

Q10. to Q13. Read the following passage and the answer the questions below:

Since the beginning of civilizations, art and culture, has been revered as the medium of expression and entertainment. It has allowed us, and countless generations before us, to timelessly share our human experiences, goals, ideas and sentiments. In its essence, it is the very thread that weaves together the fabric of societies and nations by giving members an experience of shared identity and heritage.

In addition to these intrinsic values of expression, identity, social-cohesion and nation-building, art and culture, as an industry has the power to spearhead economic growth and productivity. It has become one of the fastest growing sectors in the world, generating a global revenue of \$2,250 billion, and employing approximately 30 million people. Moreover, it is closely linked to the wider economy through its spillover impacts on other sectors, like tourism, skill development, and industrial activity

Based on the passage, answer the following questions by choosing the most suitable option

Q10. Complete the following statement:

Art and culture bind societies and build a national spirit by_____

- A. being a medium of expression and entertainment.
- B. being there from the beginning of generations,
- C. using thread to weave a national fabric
- D. handing down shared identity and heritage, goals and ideas to successive generations

Answer: Option A

Q11. Which metaphor in the given extract best defines how community members interact with each other?

- A. To weave together the fabric of societies
- B. To spearhead economic growth.
- C. To timelessly share our human experiences
- D. From the beginning of civilization

Answer: Option C

Q12. Which statement in the passage gives a clear evidence of the impact of art and culture on global economy?

- A. generating a global revenue of \$2.250 billion, and employing approximately 30 million people."
- B. it is closely linked to the wider economy through its spillover impacts on other sectors..."
- C. "It has become one of the fastest growing sectors in the world
- D. art and culture, as an industry has the power to spearhead economic growth and productivity

Answer: Option A

Q13. What industries aligned to art and culture are directly impacted by its growth in regions?

- A. Tourism and skill development
- B. Art and culture
- C. All industries
- D. Nation building

Answer: Option A

Q14. Fill in the blanks with the most appropriate pair of words from the options given below.
India's Arunima Sinha _____ became the world's first woman amputee _____ Mount Everest in 2013, has added another impressive record to her profile.

- A. which/ to climb
- B. who/ to climb
- C. who/ that climbed
- D. that/ for climbing

Answer: Option B

Q15. One part of the sentence below may contain an error. Identify the part

The Param Vir Chakra is /India's highest military decoration / awarded for displaying /acts about valour during wartime.

- A. India's highest military decoration
- B. acts about valour during wartime.
- C. awarded for displaying
- D. The Param Vir Chakra is

Answer: Option B

Q16. Which of the following conversations does NOT use formal language?

- A. A: Will you be interested in working for our company if we offer you a job?
B: Definitely. It will be my privilege.
- B. A: It's raining cats and dogs. Are you going to cancel the picnic you had planned for today?
B: I guess we will have to
- C. A: Will you be able to submit the project by Friday?
B: Yup!!Sure!
- D. A: I want to talk to your Director, Marketing, Mr. Sameer Bhatia. Can you connect me to him?
B: Sure, give me a minute.

Answer: Option C

Q17. You are going to read a text about aerobic exercise. 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.

Aerobic exercise in particular plays a big role in your memory, says Wendy Suzuki, PhD.

Professor of Neural Science and Psychology at New York University's Center for Neural Science

(1)_____ That's the area of the brain that's critical for storing long-term memories," she

says. (2)_____ Just a single session of exercise can improve my mood, Suzuki says

A. "When you exercise, your body pumps out a wide range of neurochemicals, including growth factors that stimulate the birth of brand-new brain cells in the hippocampus.

B. But the simple act of moving your body more can provide a powerful tool for fighting infection.

C. "I use that as my personal motivation to keep working out every day.

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

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

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

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

Answer: Option A

Q18. The following sentence can be re-drafted to make it read better. Choose the sentence that is the best answer.

It's a very unique problem and, in an effort to prevent another violent explosion, they want to clean up the site at the hour of 2 p.m. regardless of whether or not it's privately owned.

A. It's a unique problem and to prevent another violent explosion, they want to clean up the site at the hour of 2 p.m. regardless of whether or not it's privately owned.

B. It's a unique problem and, to prevent another explosion, they want to clean up the site at 2 pm regardless of who owns it.

C. It's a unique problem and, to prevent another violent explosion, they decided to clean up the site at 2 p.m regardless of it being privately owned.

D. In their interest to prevent another explosion, they decided to clean up the site at 2 p.m.

Answer: Option B

Q19. Read the following passage and fill in the blanks by selecting the most appropriate option

The American crime thriller The French Connection, directed by William Friedkin and starring

Gene Hackman, had its world (1)_____ in New York City and Los Angeles in October in the

year 1971. The movie, which won the Oscar for best picture, is especially (2)_____ for

featuring one of the most exciting and iconic car chases in cinematic history.

Blank 1. A. performances B. presentations C. premieres D. productions

Blank 2. A. known B. accepted C. established D. created

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

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

Answer: Option D

Q20. Complete the following sentence by filling in the blanks (1 and 2) with the right word from the list given below

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

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

Answer: Option A

Q21 to Q24. Direction: Read the following passage and answer the questions below:

With the passage of time, it is evident that post Covid-19, the world cannot be doing business as usual. A calibrated bottom-up approach is required to successfully steer through these dire times. According to Statistics, approximately 139 million are migrant workers from different parts of India. The focus of the revival strategies needs to be on the most affected section of the population namely, the migrant workers, who are normally employed as either casual workers or agricultural workers. If support is not extended to this workforce, it is likely that three-fourths of these families would have been pushed below the poverty line. Though the government wanted migrant labour to stay put in the place of their present employment, the looming uncertainty on restarting the economy has led to a mass exodus of migrant labour. Dichotomous outcomes are predicted. With restrictions on movement in place, industries will be short of skilled/semi-skilled manpower. whereas in States like Bihar, Uttar Pradesh, Rajasthan, Madhya Pradesh and Chhattisgarh, there would be a glut in labour supply. Providing employment to each and every one would be a daunting task.

Q21. Who constitutes approximately 139 million of the Indian workforce?

- A. Agricultural workers

- B. Casual workers
- C. Migrant workers
- D. Businessmen

Answer: Option C

Q22. Which of the following options best explains the meaning of the above statement?

- A. On one hand, industry will face shortage of labour, on the other hand, there will be surplus labour in villages with no jobs for many.
- B. With migrant labour moving back to their hometowns the demographics will change: resulting in the glut of manpower in rural areas and thinning of population in cities.
- C. With migrant labour returning to their hometown, farming activities will get a boost whereas industrial sector will suffer.
- D. Rural economy will get a boost with more hands to work but there may not be enough skill training opportunities for all.

Answer: Option A

Q23. What global crisis has brought about the dire consequences referred to in the extract above.

- A. Labour shortage
- B. Unemployment
- C. Economic slowdown
- D. Covid-19

Answer: Option D

Q24. The phrase 'glut in labour supply' means:

- A. A blockage in supply
- B. Tremendous shortfall in supply
- C. Excessively abundant supply
- D. Barely sufficient supply

Answer: Option C

Reasoning Ability

Q1. Given below is a question followed by two statements, I and II each containing some information. Decide which of the statements is/are sufficient to answer the question.

Who is the tallest among friends A, B, C, D and E?

Statements:

- I. C is taller than E but not as tall as A
 - II. B is taller than C but not as tall as A
-
- A. Statement I alone is sufficient
 - B. Both statements I and II are necessary
 - C. Statement II alone is sufficient
 - D. The combination of the statement I and II is not sufficient

Answer: Option B

Q2. In a coded form, $A + B$ means A is the father of B; $A \times B$ means A is the son of B and A/B means A is the brother of B. Which of the following shows that P is the nephew of R?

- A. $Q/P \times R + S$
- B. $P + Q/R \times S$
- C. $P \times Q/R + S$
- D. $P \times Q + R/S$

Answer: Option C

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

A and B bought a bike with the partnership in the proportion of 4:3 respectively. What amount A gives in partnership?

Statements:

- I. B gives 75% that of A's money in the partnership
 - II. B gives Rs.4500 in the partnership
-
- A. The combination of the statement I and II is not sufficient

- B. Statement II alone is sufficient
- C. The combination of the statements I and II are necessary
- D. Statement I alone is sufficient

Answer: Option B

Q4. 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 have the transformation been done the same way?

[A] SUBHA - SHABU

[B] NHGRQ - GHNRRQ

[C] SQKTD-DSTKQ

[D] HPUTR - HTRUP

[E] JKCBD-BDCK

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

Answer: Option B

Q5. Which is the wrong term in the following series?

pbd, reh, thl, vlp, xnt

- A. xnt
- B. pbd
- C. thl
- D. vlp

Answer: Option D

Q6. In a survey, 65 percent people used Facebook as social media whereas 40 percent used Whatsapp and 25 percent people used both media Facebook and Whatsapp. What percent of the people used neither Facebook nor Whatsapp?

- A. 17

- B. 20
- C. 15
- D. 7

Answer: Option B

Q7. 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.

How many are male and female among a family of seven members O, P, Q, R, S, T and U?

Statements:

- I. O and S are sons of T and Q, R is the mother of 1 boy and 1 girl.
- II. P is the son of O and R

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

Answer: Option C

Q8. Nehal, Iqbal, Ronit, Malini and Harbhajan participate in any one of the five activities i.e. Quiz, Singing, Dance, Debate and Mimicry. Ronit participates in Singing. Harbhajan does not participate in Debate and Mimicry. Malini does not participate in Mimicry. Iqbal participates in Quiz. Who participates in Debate?

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

Answer: Option C

Q9. In a family Ten persons with three couples, D and S are brothers and each has two children. E is the aunt of A, and A is the cousin sister of Y. Y is the sister of V, who is the grand-daughter of K. B is the wife of K. How is K related to A?

- A. Grandfather
- B. Father
- C. Grandmother
- D. Uncle

Answer: Option A

Q10. Two statements 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:

- 1. Some cars are taxis
- 2. Some taxis are buses

Conclusion:

- I. Some cars are buses.
 - II. Some buses are cars
 - III. All buses are cars
 - IV. All taxis are cars
-
- A. Only II, III and IV follow
 - B. Only II and III follow
 - C. Only III and IV follow
 - D. None of the conclusions follow

Answer: Option D

Q11. In a certain code, P @ R means P is the grandson of R; P \$ R means P is the brother of R; P # R means P is the mother of R.

If A @ B # C \$ D, then how is B related to D?

- A. Mother
- B. Husband
- C. Son
- D. Sister

Answer: Option A

Q12. 5 cars P, Q, R, S and T, the cost of car Q is half as much as P while T is half as much as Q. S is half as much as R and R is three times as much as costly than Q.

If all the cars are arranged in ascending order of their costs, which car will be exactly in the middle?

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

Answer: Option C

Q13. A statement is followed by three arguments numbered I, II and III. Decide which of the argument(s) is/are strong (important and directly related to the question) and which is/are weak (not important and not related to the central message of the question)

Statement:

National Education Policy-2020 predicts a new curricular and academic structure for school education that is approachable and appropriate to the needs and interests of learners at different stages of their development.

Arguments:

- I. No it is not ensuring that the quality education reaches to the students of ALL sections of the society.
 - II. NEP-2020 improves multiple aspects of education
 - III. Students would gain better theoretical knowledge
-
- A. Only argument II is strong
 - B. All arguments I, II and III are strong
 - C. Only argument I is strong
 - D. Both I and II are strong

Answer: Option D

Q14. A statement is followed by three assumptions numbered I, II and III. Consider the statement and decide which of the given assumption(s) is/are implicit in the statement.

Statement:

Shouldn't school psychologist be made compulsory in every school in India?

Assumptions:

- I. Yes that is the only way to improve overall development and adjustment of students throughout the school years.
 - II. No, it would be an extra burden of salary of school psychologist on Government
-
- A. Neither I nor II is implicit
 - B. Both I and II are implicit
 - C. Only II is implicit
 - D. Only I is implicit

Answer: Option D

Q15. In a group of children, 15 children can speak Hindi language, 10 children can speak Urdu language, 8 children can speak English language. None can speak any other languages. If 12 children in this group can speak only two languages and 2 children can speak all the three languages. Then, how many children are there in a group?

- A. 15
- B. 47
- C. 19
- D. 17

Answer: Option C

Q16. Seven players O, P, Q, R, S, T and U are standing in a row.

- i. O is on the left of Q.
- ii. U is on the right of R and on the left of P.
- iii. O and R have two players between them.
- iv. S and P have two players between them.
- v. T is on the extreme left.

Who is exactly in the middle of the row?

- A. P
- B. O
- C. S
- D. Q

All the options were wrong.

Correct answer: Either P or S

Q17. A statement is followed by three assumptions numbered I, II and III. Consider the statement and decide which of the given assumption(s) is/are implicit in the statement.

Statement

Should children be prevented completely from smart mobile phone?

Assumptions

- I. No, children getting educational information from smart mobile phone.
 - II. Yes, it will create health problems.
 - III. Yes, some information related to sex and violence misguides young children.
- A. Both I and II are implicit
 - B. Both II and III are implicit
 - C. Only I is implicit
 - D. Only II is implicit

Answer: Option D

Q18. In a college, graduate students got distinctions of three subjects i.e. P, Q and R. Subject P is taken by 26 percent students, 25 percent students took subject Q and subject R is taken by 14 percent. Subject P and Q are taken by 11 percent while subject Q and R are taken by 10 percent. Subject R and P are taken by 9 percent while subject R alone is not taken by any student.

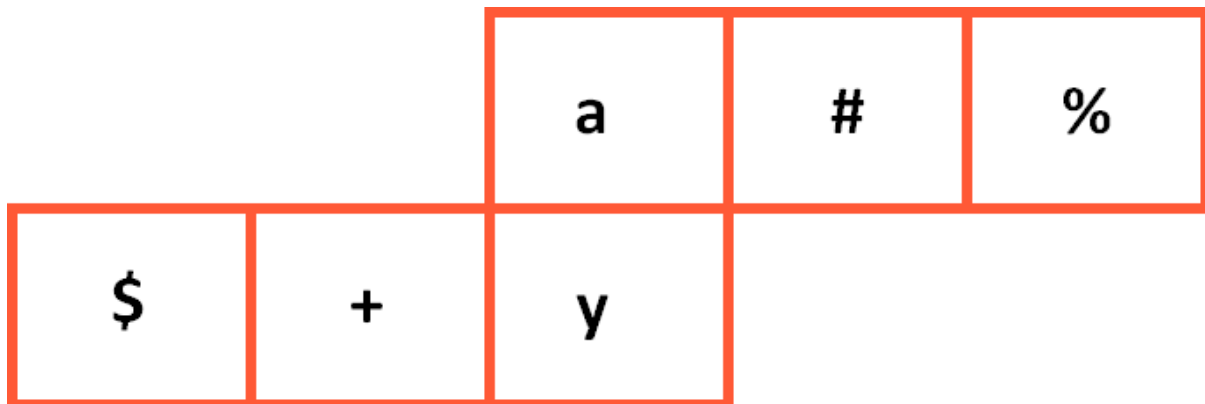
What is the percentage of students who taken subject P and Q but not subject R?

- A. 4
- B. 6
- C. 10
- D. 8

Answer: Option B

Q19. 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. a
- B. +
- C. \$
- D. Y

Answer: Option A

Programming Logic

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

```
1 public class Main
2 {
3     public static void main(String args[])
4     {
5         System.out.println("ab\raba\r");
6     }
7 }
```

Type your answer here:

Answer:

ab

aba

Q2. _____ function is used to show a key pressed by a user will appear on the screen.

- A. getch()
- B. getsf()
- C. gfets()

D. getch()

Answer: Option A

Q3. When we implement stack by using linked list then:

- A. insertion of node is done from beginning and deletion from beginning
- B. insertion of node is done from end & deletion from end
- C. insertion of node is done from end & deletion from beginning
- D. insertion of node is done from beginning and deletion from end

Answer: Option A

Both A and B can be correct. If insertion and deletion happens at the same end it is stack and if it happens at different ends it is Queue. Here the best among A and B is Option A

Q4. The primary mission of an analyst or systems designer is to:

- A. calculate the Return on Investment
- B. development of Software Evaluation Tool
- C. create a Data Flow Diagram
- D. extract the physical requirements of the users and convert them to software

Answer: Option D

Q5. _____ is a process to identify the key aspects of an entity and hiding the rest.

- A. Encapsulation
- B. Inheritance
- C. Abstraction
- D. Polymorphism

Answer: Option C

Q6. Among the following loops which is a post tested loop?

- A. while
- B. do-while
- C. for
- D. If

Answer: Option B

Q7. Which one is not a type of topology?

- A. Star-topology
- B. Circuit-topology
- C. Ring-topology
- D. Bus-topology

Answer: Option B

Q8. Assume: Linked list as head -> 2 -> 4 -> 6 -> 8

```
1 struct emp
2 {
3     int emp-id;
4     structemp *next;
5 };
6 structemp *head,*temp;
7 temp = head;
8 while(temp->next!= NULL)
9 {
10     printf("%d", temp -> emp_id);
11     temp = temp -> next;
12 }
```

What will be the output of the given program?

- A. 2460
- B. 2468
- C. 246
- D. 246NULL

Answer: Option C

Q9. Predict the output.

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

- A. No output
- B. 20
- C. 0
- D. Compilation Error

Answer: Option A

Q10. What would be the Time Complexity of below Code? Type your answer:

```
1 #include<stdio.h>
2 void main()
3 {
4     int count = 11;
5     for(int i = 1; i <= count; i++) {
6         printf("Time Complexity!!");
7     }
8 }
```

Answer:

O(count)

Coding

Q1. There is a bucket of water capacity of X litres, which is supposed to fill with a mug of Y millilitres water capacity. Say for example X=100 and Y=10 then, the bucket will get full of a minimum of 8 mugs (>80% and less than 100%). Bucket filling is to be stopped once more than 80% of bucket capacity is filled. The amount of water taken at a time in a mug is not fixed as it can be any value less than or equal to y. Notify to stop once the bucket is full. That is more than 80% of the capacity of the bucket and the count number of mugs poured into the bucket. Note that Bucket capacity will always be greater than Mug's capacity.

Example 1:

INPUT Values

```
100 // Enter bucket capacity in litres
as this
20 //Enter Mug capacity in litres as
this
```

```
//Enter Amount of water in MUG one after other as below
```

```
20
20
20
20
20
```

OUTPUT Values

```
BUCKET FULL!
NUMBER OF MUGS: 4
```

Note:

Order of inputs should be the same as shown in the above example. Do not use Input Prompts(Directly accept input values in order as above). Output should match with the format given above.

If the amount of water entered by the user is less than zero or greater than Mug's Capacity display "INVALID INPUT" and quit. If the capacity of Mug entered is greater than the capacity of Bucket then quit with the error message "INVALID INPUT".

Solution in C++:

```
1 #include <iostream>
2 using namespace std;
3 int main()
4 {
5     int bcap=0,mcap=0,mincap=0,filled=0,temp,mcnt=0,flag=0;
6     cin>>bcap>>mcap;
7     mincap=bcap*0.8;
8     if(mcap>bcap)
9         flag=1;
10    else
11    {
12        while(filled<mincap)
13        {
14            cin>>temp;
15            if(temp>mcap || temp<0)
16            {
17                flag=1;
18                break;
19            }
20            else
21            {
22                filled+=temp;
23                mcnt+=1;
24            }
25        }
26    }
27    if(flag==0)
28        cout<<"BUCKET FULL!\nNUMBER OF MUGS:"<<mcnt;
29    else
30        cout<<"INVALID INPUT";
31    return 0;
32 }
```

Q2. A string or character array containing array Mobile numbers is provided . Verify these five mobile numbers and identify valid as well as Invalidnnumbers. Any mobile number is greater than 10 digits or any characters is considered as invalid. Write a code which will generate a report on the count of total number of invalid mobile numbers. A valid Mobile number 'M' should be digit of length 10 with all numeric digits. Do not use any input message. Directly accept Mobile Numbers one after another as input and enter "q" or "Q" to stop as taking input.

Example 1:

```
9892568790
989A2568790
9992568790
999256879099
Q
```

Output:

```
3
```

Note:

1. Output should be in format <integer>
2. If a user enters a set of Mobile Numbers containing less than 5 or more than 5 values, display " INPUT LIMIT is 5" and quit.

Solution in C++:

```
1 #include<bits/stdc++.h>
2 using namespace std;
3 int main()
4 {
5     string m;
6     int count=0,total=0;
7     cin>>m;
8     while(m!="Q" && m!="q")
9     {
10         total++;
11         int len = m.length();
12         int i=0;
13         if(len==10)
14         {
15             for(i=0;i<len;i++)
16             {
17                 if(!(m[i]>='0'&& m[i]<='9'))
18                     break;
19             }
20             if(i!=len)
21                 count++;
22         }
23         else if(len>10)
24             count++;
25         cin>>m;
26     }
27     if(total==5)
28         cout<<count;
29     else
30         cout<<"INPUT LIMIT IS 5";
31 }
```

This document details the Slot Analysis as well as Answers to Questions that students recollected post their TCS NQT(Slot 3) on 26th 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

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

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

Coding:

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

Slot Analysis

- The assessment platform used was TCS iON.
- **All the programming MCQs were same as yesterday's second slot questions (25th Oct)**
- 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 x and y are two positive integers such that $(4x^2 - 3y^2) : (2x^2 + 3y^2) = 37:59$. What is the value of $x:y$?

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

Answer: Option D

Q2. A man travels 240 Km partly by a train and partly by a car. If he covers 160 Km by the train and rest by the car, it will take 3 hours 30 minutes. But if he travels 100 Km by the train and the rest by the car. It will take 15 minutes more. What is the speed of the train?

- A. 90 kmph
- B. 60 kmph
- C. 100 kmph
- D. 80 kmph

Answer: Option D

Q3. What is the product of $(3\sqrt{3} - 5)$ with the positive square root of $\{6 + 2\sqrt{3} / 33 - 19\sqrt{3}\}$?

- A. 1

- B. $\sqrt{3}$
- C. 2
- D. $2\sqrt{3}$

Answer: Option C

Q4. The Marks of 10 students in an English test are given below:

10, 21, 22, 35, 37, 13, 16, 18, 24, 34

What is the population standard deviation of the data?

- A. 9.0
- B. 8.9
- C. 8.8
- D. 9.3

Answer: Option A

Q5. If 3 men and 4 women can finish the work in 24 days, 4 men and 8 women can finish the same work in 15 days, in how many days will it take for one man alone to finish the same work?

- A. 200 days
- B. 150 days
- C. 120 days
- D. 240 days

Answer: Option C

Q6. An arc of a circle subtends an angle 36° at a point on its circumference. What is the area (in cm^2) of the sector if the arc of its length is $3\pi / 5$ cm?

- A. $3\pi / 8$
- B. $9\pi / 10$
- C. $9\pi / 20$
- D. $3\pi / 16$

Answer: Option B

Q7. If mean of 29 observations is 33 and on adding one more observation in the new mean it becomes 34. What is the value of the 30th observation?

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

Answer: Option B

Q8. Gopi gave 30% of the money he had to his parents, 15% of the remaining money to each of his 2 children, one-third of the money now left was spent for his personal expenses and the remaining money Rs.9800 was deposited in the bank. How much money did Gopi gave initially?

- A. Rs.40000
- B. Rs.32000
- C. Rs.30000
- D. Rs.42000

Answer: Option C

Q9. If 14 men working 8 hours a day, can reap a field in 18 days, in how many days will 9 men reap the field working 7 hours a day?

- A. 16 days
- B. 20 days
- C. 28 days
- D. 32 days

Answer: Option D

Q10. If $5^x 3^y = 225 \times 405$, find the value of X^{2Y-3X} ?

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

Answer: Option B

Q11. The number of 10 paisa, 20 paisa, 25 paisa and 50 paisa coins contained in the bag are in the ratio $\frac{1}{6} : \frac{1}{4} : \frac{1}{3} : \frac{1}{2}$, amounts to Rs.240. The total amount of 25 paisa and 50 paisa coins is

- A. Rs.150
- B. Rs.180
- C. Rs.200
- D. Rs.160

Answer: Option C

Q12. Sarita wants to gift a stationery kit which includes a pencil, an eraser and a sharpener to some kids in her village. She went to a wholesaler for purchasing these items. The seller sells pencils in packing of 12, erasers in a packing of 18, and sharpeners in a packing of 10. She purchases the minimum number of packets of pencils, erasers and sharpeners so that a fixed number of kits can be prepared without any item being unused or short. What is the number of packets of pencils purchased by her?

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

Answer: Option D

Q13. The ratio of incomes of two persons A & B is $\frac{1}{9} : \frac{1}{13}$ and the ratio of their expenditure is $\frac{1}{5} : \frac{1}{7}$. If person A saves Rs.5000 per month and person B saves Rs.3000 per month. What is the sum of their monthly incomes?

- A. Rs.26000
- B. Rs.18000
- C. Rs.22000
- D. Rs.44000

Answer: Option D

Q14. A person invested a certain amount in two different schemes A and B at the rate of interest 10% and 15% respectively. If the amount invested in scheme B was two-third of the

amount invested in scheme A and the total interest in one year was Rs.2400, what was the amount invested in scheme B?

- A. Rs.12000
- B. Rs. 9000
- C. Rs. 7000
- D. Rs. 8000

Answer: Option D

Q15. The daily expenditure of a sports coaching camp is Rs.12200 when there are 30 male and 20 female members. When the number of females and males increase by 25% and 10% respectively, the daily expenditure turns out to be Rs.14170. What would have been the daily expenditure (in Rs) if the number of females and males had increased by 10% and 20% respectively?

- A. 14350
- B. 14140
- C. 14230
- D. 13920

Answer: Option D

Q16. Mr.Raju lent out a certain sum on S.I and the same sum on C.I at a certain rate of interest p.a. If the ratio between the difference of C.I and S.I of 2 years and 3 years is 10 : 31, what is the rate of interest p.a?

- A. 12.5%
- B. 7.5%
- C. 10%
- D. 15%

Answer: Option C

Q17. If the mean of 6, 8, 12, 16, t, 22, 26 is t, what is the value of t?

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

D. 20

Answer: Option B

Q18. A person bought a bicycle for a certain amount of money. He spent 15% of the cost on repairs and sold it for a profit of Rs.1150. How much did he spend on repairs if he made the profit of 25%?

- A. Rs. 500
- B. Rs. 650
- C. Rs. 550
- D. Rs. 600

Answer: Option D

Q19. What would be the volume of hemisphere whose T.S.A is 108π sq.cm?

- A. 144π cc
- B. 288π cc
- C. 216π cc
- D. 72π cc

Answer: Option A

Q20. A person is able to buy 2kg more for Rs.198, due to a reduction of $8\frac{1}{3}\%$ in the price of rice. What is the difference between the original and the reduced rate of rice per kg?

- A. Rs.0.75
- B. Rs. 0.50
- C. Rs. 0.25
- D. Rs. 1.00

Answer: Option A

Q21. The speed of a bus increases by 3 km after every one hour. If the distance travelled in the first one hour was 45 Km, what was the total distance travelled in 15 hours?

- A. 725 Km

- B. 900 Km
- C. 990 Km
- D. 675 Km

Answer: Option C

Q22. What is the value of $(0.000216)^{\frac{1}{3}} + (\sqrt{0.000064})^{\frac{1}{2}} / (0.000343)^{\frac{1}{3}} + (0.000729)^{\frac{1}{3}}$?

- A. 1.125
- B. 1.625
- C. 2.125
- D. 0.500

Answer: Option B

Q23. What is the median time for the period, 1st february to 20th september, of a leap year ?

- A. 12 Noon of 27th May
- B. 12 Noon of 28th May
- C. Midnight between 26th and 27th May
- D. Midnight between 27th and 28th May

Answer: Option A

Verbal Ability

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

Swami Vivekananda dies at an early age /of 39 years on July 4, 1902 due to a rupture in /one of the blood vessels of his brain.

- A. No error
- B. Swami Vivekananda dies at an early age
- C. one of the blood vessels of his brain
- D. of 39 years on July 4, 1902 due to a rupture in

Answer: Option B

Q2. Fill in the blanks with the most appropriate pair of words from the options given below:

Aarogya Setu is a mobile application developed by the Government of India _____ hotspots, hence _____ the spread of Covid.

- A. from identified/ aids in curbing
- B. on identification/ aiding to curb
- C. to identify/ aiding in curbing
- D. for identifying/ aids to curbing

Answer: Option C

Q3. 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.

S1. "Unemployment", may be defined as a phenomenon wherein an individual who is fit and willing to work is not able to find work.

S2.

S3.

S4. The unemployment rate of a country is indicative of its socio-economic health.

P. Similarly, the term 'labour force' is applied to the total number of individuals within the population who are willing and capable of doing work.

Q. And the unemployment rate is usually measured in percentages, the number of individuals without work out of the total labour force of the country or specific social groups.

R. The most accepted classification of unemployment recognizes two broad types: Voluntary and involuntary unemployment.

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

Answer: Option B

Q4. For the four-sentence (S1 to S4) paragraph below, sentences S1 and S4 are given. From the options P, Q and R, choose the appropriate sentences for S2 and S3 respectively.

S1: The tourism and transport industry is in total shambles due to the lockdowns during the current pandemic caused by Covid 19.

S2: _____

S3: _____

S4: Many organizations have mounted a 360° virtual tour to allow the potential tourists to get a foretaste of the real thing.

P: To combat this problem, the governments across the globe, tourist destinations and other players have come up with the novel idea of offering virtual tours to the general public.

Q: The New York city's Broadway is streaming its famous productions through social media.

R: By doing so, they are not only providing relief to the people staying put in their homes by showcasing popular destinations but also promoting themselves amongst their target customers.

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

Answer: Option D

Q5. The Mughal Emperor Akbar, _____ 25th October 1605, shortly _____ his 63rd birthday due to yesterday.

- A. dies on/ when
- B. died on/ after
- C. died at/ after
- D. died in/ before

Answer: Option B

Q6. One part of the sentence below may contain an error. Identify the part. If there is no error, choose "No error".

The 9.2 km Atal Tunnel at Rohtang in Himachal Pradesh is the longest highway tunnel in the world /connecting Manali to Lahaul-Spiti valley.

- A. The 9.2 km Atal Tunnel at Rohtang in Himachal Pradesh
- B. No error
- C. is the longest highway tunnel in the world
- D. connecting Manali to Lahaul-Spiti valley

Answer: Option D

Q7. You are going to read a text about glaciers. Some sentences are missing from the text.

Choose from the list (A-C) the most appropriate sentence for each gap (1-2) in the text. There is one extra sentence that you do not need to use.

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

Specifically, since the industrial revolution, carbon dioxide and other greenhouse gas emissions have raised temperatures, even higher in the poles. ____2____ Scientists project that if emissions continue to rise unchecked the Arctic could be ice free in the summer as soon as the year 2040 as ocean and air temperatures continue to rise rapidly.

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

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

Answer: Option A

Q8. 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: A global partnership will be making 120 million rapid coronavirus tests available to 133 economically less-advantaged nations at heavily discounted prices, the World Health Organization (WHO) announced.

S-2:

S-3:

S-4: The plan is the result of a series of agreements between the two pharmaceutical companies and several nonprofit organizations and the Global Fund.

P. They will cost the purchasing nations \$5 or less apiece.

Q. Testing is a critical cornerstone of the COVID-19 response, enabling countries to trace and contain the virus now.

R. The tests will be supplied by U.S.-based Abbott and South Korea's SD Biosensor, over a period of six months.

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

Answer: Option D

Q9. You are going to read a text about working with a remote team. 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.

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 realized 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 a 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'

A. (1) B, (2) A

B. (1) A, (2) C

C. (1) A, (2) B

D. (1) C, (2) A

Answer: Option D

Q10. to Q13. Read the following passage and the answer the questions below:

Since the beginning of civilizations, art and culture, has been revered as the medium of expression and entertainment. It has allowed us, and countless generations before us, to timelessly share our human experiences, goals, ideas and sentiments. In its essence, it is the very thread that weaves together the fabric of societies and nations by giving members an experience of shared identity and heritage.

In addition to these intrinsic values of expression, identity, social-cohesion and nation-building, art and culture, as an industry has the power to spearhead economic growth and productivity. It has become one of the fastest growing sectors in the world, generating a global revenue of \$2,250 billion, and employing approximately 30 million people. Moreover, it is closely linked to the wider economy through its spillover impacts on other sectors, like tourism, skill development, and industrial activity

Based on the passage, answer the following questions by choosing the most suitable option

Q10. Complete the following statement:

Art and culture bind societies and build a national spirit by_____

- A. being a medium of expression and entertainment.
- B. being there from the beginning of generations,
- C. using thread to weave a national fabric
- D. handing down shared identity and heritage, goals and ideas to successive generations

Answer: Option A

Q11. Which metaphor in the given extract best defines how community members interact with each other?

- A. To weave together the fabric of societies
- B. To spearhead economic growth.
- C. To timelessly share our human experiences
- D. From the beginning of civilization

Answer: Option C

Q12. Which statement in the passage gives a clear evidence of the impact of art and culture on global economy?

- A. generating a global revenue of \$2.250 billion, and employing approximately 30 million people."
- B. it is closely linked to the wider economy through its spillover impacts on other sectors..."
- C. "It has become one of the fastest growing sectors in the world
- D. art and culture, as an industry has the power to spearhead economic growth and productivity

Answer: Option A

Q13. What industries aligned to art and culture are directly impacted by its growth in regions?

- A. Tourism and skill development
- B. Art and culture
- C. All industries
- D. Nation building

Answer: Option A

Q14. Fill in the blanks with the most appropriate pair of words from the options given below.
India's Arunima Sinha _____ became the world's first woman amputee _____ Mount Everest in 2013, has added another impressive record to her profile.

- A. which/ to climb
- B. who/ to climb
- C. who/ that climbed
- D. that/ for climbing

Answer: Option B

Q15. One part of the sentence below may contain an error. Identify the part

The Param Vir Chakra is /India's highest military decoration / awarded for displaying /acts about valour during wartime.

- A. India's highest military decoration
- B. acts about valour during wartime.
- C. awarded for displaying
- D. The Param Vir Chakra is

Answer: Option B

Q16. Which of the following conversations does NOT use formal language?

- A. A: Will you be interested in working for our company if we offer you a job?
B: Definitely. It will be my privilege.
- B. A: It's raining cats and dogs. Are you going to cancel the picnic you had planned for today?
B: I guess we will have to
- C. A: Will you be able to submit the project by Friday?
B: Yup!!Sure!
- D. A: I want to talk to your Director, Marketing, Mr. Sameer Bhatia. Can you connect me to him?
B: Sure, give me a minute.

Answer: Option C

Q17. You are going to read a text about aerobic exercise. 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.

Aerobic exercise in particular plays a big role in your memory, says Wendy Suzuki, PhD.

Professor of Neural Science and Psychology at New York University's Center for Neural Science

(1)_____ That's the area of the brain that's critical for storing long-term memories," she

says. (2)_____ Just a single session of exercise can improve my mood, Suzuki says

A. "When you exercise, your body pumps out a wide range of neurochemicals, including growth factors that stimulate the birth of brand-new brain cells in the hippocampus.

B. But the simple act of moving your body more can provide a powerful tool for fighting infection.

C. "I use that as my personal motivation to keep working out every day.

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

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

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

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

Answer: Option A

Q18. The following sentence can be re-drafted to make it read better. Choose the sentence that is the best answer.

It's a very unique problem and, in an effort to prevent another violent explosion, they want to clean up the site at the hour of 2 p.m. regardless of whether or not it's privately owned.

A. It's a unique problem and to prevent another violent explosion, they want to clean up the site at the hour of 2 p.m. regardless of whether or not it's privately owned.

B. It's a unique problem and, to prevent another explosion, they want to clean up the site at 2 pm regardless of who owns it.

C. It's a unique problem and, to prevent another violent explosion, they decided to clean up the site at 2 p.m regardless of it being privately owned.

D. In their interest to prevent another explosion, they decided to clean up the site at 2 p.m.

Answer: Option B

Q19. Read the following passage and fill in the blanks by selecting the most appropriate option

The American crime thriller The French Connection, directed by William Friedkin and starring

Gene Hackman, had its world (1)_____ in New York City and Los Angeles in October in the

year 1971. The movie, which won the Oscar for best picture, is especially (2)_____ for

featuring one of the most exciting and iconic car chases in cinematic history.

Blank 1. A. performances B. presentations C. premieres D. productions

Blank 2. A. known B. accepted C. established D. created

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

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

Answer: Option D

Q20. Complete the following sentence by filling in the blanks (1 and 2) with the right word from the list given below

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

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

Answer: Option A

Q21 to Q24. Direction: Read the following passage and answer the questions below:

With the passage of time, it is evident that post Covid-19, the world cannot be doing business as usual. A calibrated bottom-up approach is required to successfully steer through these dire times. According to Statistics, approximately 139 million are migrant workers from different parts of India. The focus of the revival strategies needs to be on the most affected section of the population namely, the migrant workers, who are normally employed as either casual workers or agricultural workers. If support is not extended to this workforce, it is likely that three-fourths of these families would have been pushed below the poverty line. Though the government wanted migrant labour to stay put in the place of their present employment, the looming uncertainty on restarting the economy has led to a mass exodus of migrant labour. Dichotomous outcomes are predicted. With restrictions on movement in place, industries will be short of skilled/semi-skilled manpower. whereas in States like Bihar, Uttar Pradesh, Rajasthan, Madhya Pradesh and Chhattisgarh, there would be a glut in labour supply. Providing employment to each and every one would be a daunting task.

Q21. Who constitutes approximately 139 million of the Indian workforce?

- A. Agricultural workers

- B. Casual workers
- C. Migrant workers
- D. Businessmen

Answer: Option C

Q22. Which of the following options best explains the meaning of the above statement?

- A. On one hand, industry will face shortage of labour, on the other hand, there will be surplus labour in villages with no jobs for many.
- B. With migrant labour moving back to their hometowns the demographics will change: resulting in the glut of manpower in rural areas and thinning of population in cities.
- C. With migrant labour returning to their hometown, farming activities will get a boost whereas industrial sector will suffer.
- D. Rural economy will get a boost with more hands to work but there may not be enough skill training opportunities for all.

Answer: Option A

Q23. What global crisis has brought about the dire consequences referred to in the extract above.

- A. Labour shortage
- B. Unemployment
- C. Economic slowdown
- D. Covid-19

Answer: Option D

Q24. The phrase 'glut in labour supply' means:

- A. A blockage in supply
- B. Tremendous shortfall in supply
- C. Excessively abundant supply
- D. Barely sufficient supply

Answer: Option C

Reasoning Ability

Q1. Given below is a question followed by two statements, I and II each containing some information. Decide which of the statements is/are sufficient to answer the question.

Who is the tallest among friends A, B, C, D and E?

Statements:

- I. C is taller than E but not as tall as A
 - II. B is taller than C but not as tall as A
-
- A. Statement I alone is sufficient
 - B. Both statements I and II are necessary
 - C. Statement II alone is sufficient
 - D. The combination of the statement I and II is not sufficient

Answer: Option B

Q2. In a coded form, $A + B$ means A is the father of B; $A \times B$ means A is the son of B and A/B means A is the brother of B. Which of the following shows that P is the nephew of R?

- A. $Q/P \times R + S$
- B. $P + Q/R \times S$
- C. $P \times Q/R + S$
- D. $P \times Q + R/S$

Answer: Option C

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

A and B bought a bike with the partnership in the proportion of 4:3 respectively. What amount A gives in partnership?

Statements:

- I. B gives 75% that of A's money in the partnership
 - II. B gives Rs.4500 in the partnership
-
- A. The combination of the statement I and II is not sufficient

- B. Statement II alone is sufficient
- C. The combination of the statements I and II are necessary
- D. Statement I alone is sufficient

Answer: Option B

Q4. 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 have the transformation been done the same way?

[A] SUBHA - SHABU

[B] NHGRQ - GHNRRQ

[C] SQKTD-DSTKQ

[D] HPUTR - HTRUP

[E] JKCBD-BDCK

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

Answer: Option B

Q5. Which is the wrong term in the following series?
pbd, reh, thl, vlp, xnt

- A. xnt
- B. pbd
- C. thl
- D. vlp

Answer: Option D

Q6. In a survey, 65 percent people used Facebook as social media whereas 40 percent used Whatsapp and 25 percent people used both media Facebook and Whatsapp. What percent of the people used neither Facebook nor Whatsapp?

- A. 17

- B. 20
- C. 15
- D. 7

Answer: Option B

Q7. 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.

How many are male and female among a family of seven members O, P, Q, R, S, T and U?

Statements:

- I. O and S are sons of T and Q, R is the mother of 1 boy and 1 girl.
- II. P is the son of O and R

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

Answer: Option C

Q8. Nehal, Iqbal, Ronit, Malini and Harbhajan participate in any one of the five activities i.e. Quiz, Singing, Dance, Debate and Mimicry. Ronit participates in Singing. Harbhajan does not participate in Debate and Mimicry. Malini does not participate in Mimicry. Iqbal participates in Quiz. Who participates in Debate?

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

Answer: Option C

Q9. In a family Ten persons with three couples, D and S are brothers and each has two children. E is the aunt of A, and A is the cousin sister of Y. Y is the sister of V, who is the grand-daughter of K. B is the wife of K. How is K related to A?

- A. Grandfather
- B. Father
- C. Grandmother
- D. Uncle

Answer: Option A

Q10. Two statements 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:

- 1. Some cars are taxis
- 2. Some taxis are buses

Conclusion:

- I. Some cars are buses.
 - II. Some buses are cars
 - III. All buses are cars
 - IV. All taxis are cars
-
- A. Only II, III and IV follow
 - B. Only II and III follow
 - C. Only III and IV follow
 - D. None of the conclusions follow

Answer: Option D

Q11. In a certain code, P @ R means P is the grandson of R; P \$ R means P is the brother of R; P # R means P is the mother of R.

If A @ B # C \$ D, then how is B related to D?

- A. Mother
- B. Husband
- C. Son
- D. Sister

Answer: Option A

Q12. 5 cars P, Q, R, S and T, the cost of car Q is half as much as P while T is half as much as Q. S is half as much as R and R is three times as much as costly than Q.

If all the cars are arranged in ascending order of their costs, which car will be exactly in the middle?

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

Answer: Option C

Q13. A statement is followed by three arguments numbered I, II and III. Decide which of the argument(s) is/are strong (important and directly related to the question) and which is/are weak (not important and not related to the central message of the question)

Statement:

National Education Policy-2020 predicts a new curricular and academic structure for school education that is approachable and appropriate to the needs and interests of learners at different stages of their development.

Arguments:

- I. No it is not ensuring that the quality education reaches to the students of ALL sections of the society.
 - II. NEP-2020 improves multiple aspects of education
 - III. Students would gain better theoretical knowledge
-
- A. Only argument II is strong
 - B. All arguments I, II and III are strong
 - C. Only argument I is strong
 - D. Both I and II are strong

Answer: Option D

Q14. A statement is followed by three assumptions numbered I, II and III. Consider the statement and decide which of the given assumption(s) is/are implicit in the statement.

Statement:

Shouldn't school psychologist be made compulsory in every school in India?

Assumptions:

- I. Yes that is the only way to improve overall development and adjustment of students throughout the school years.
 - II. No, it would be an extra burden of salary of school psychologist on Government
-
- A. Neither I nor II is implicit
 - B. Both I and II are implicit
 - C. Only II is implicit
 - D. Only I is implicit

Answer: Option D

Q15. In a group of children, 15 children can speak Hindi language, 10 children can speak Urdu language, 8 children can speak English language. None can speak any other languages. If 12 children in this group can speak only two languages and 2 children can speak all the three languages. Then, how many children are there in a group?

- A. 15
- B. 47
- C. 19
- D. 17

Answer: Option C

Q16. Seven players O, P, Q, R, S, T and U are standing in a row.

- i. O is on the left of Q.
- ii. U is on the right of R and on the left of P.
- iii. O and R have two players between them.
- iv. S and P have two players between them.
- v. T is on the extreme left.

Who is exactly in the middle of the row?

- A. P
- B. O
- C. S
- D. Q

All the options were wrong.

Correct answer: Either P or S

Q17. A statement is followed by three assumptions numbered I, II and III. Consider the statement and decide which of the given assumption(s) is/are implicit in the statement.

Statement

Should children be prevented completely from smart mobile phone?

Assumptions

- I. No, children getting educational information from smart mobile phone.
 - II. Yes, it will create health problems.
 - III. Yes, some information related to sex and violence misguides young children.
- A. Both I and II are implicit
 - B. Both II and III are implicit
 - C. Only I is implicit
 - D. Only II is implicit

Answer: Option D

Q18. In a college, graduate students got distinctions of three subjects i.e. P, Q and R. Subject P is taken by 26 percent students, 25 percent students took subject Q and subject R is taken by 14 percent. Subject P and Q are taken by 11 percent while subject Q and R are taken by 10 percent. Subject R and P are taken by 9 percent while subject R alone is not taken by any student.

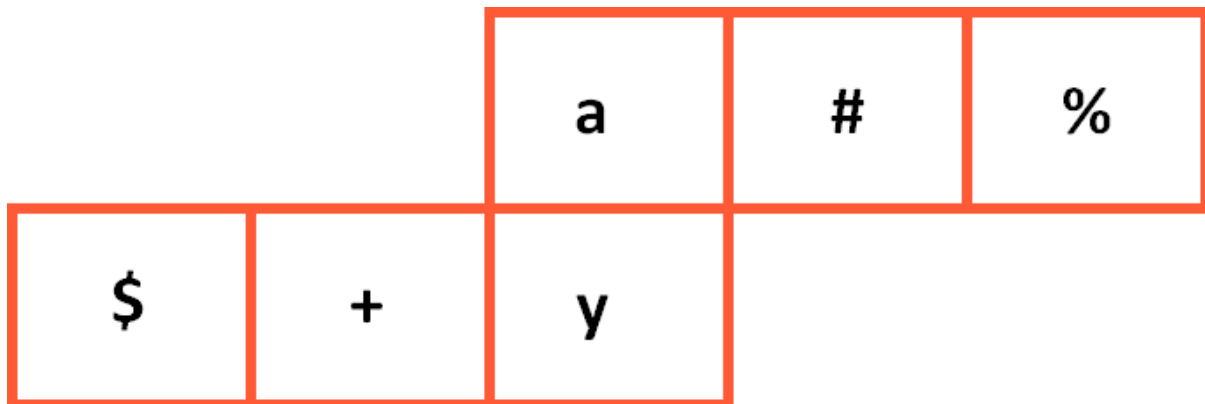
What is the percentage of students who taken subject P and Q but not subject R?

- A. 4
- B. 6
- C. 10
- D. 8

Answer: Option B

Q19. 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. a
- B. +
- C. \$
- D. Y

Answer: Option A

Programming Logic

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

```
1 public class Main
2 {
3     public static void main(String args[])
4     {
5         System.out.println("ab\raba\r");
6     }
7 }
```

Type your answer here:

Answer:

ab

aba

Q2. _____ function is used to show a key pressed by a user will appear on the screen.

- A. getch()
- B. getsf()
- C. gfets()

D. getch()

Answer: Option A

Q3. When we implement stack by using linked list then:

- A. insertion of node is done from beginning and deletion from beginning
- B. insertion of node is done from end & deletion from end
- C. insertion of node is done from end & deletion from beginning
- D. insertion of node is done from beginning and deletion from end

Answer: Option A

Both A and B can be correct. If insertion and deletion happens at the same end it is stack and if it happens at different ends it is Queue. Here the best among A and B is Option A

Q4. The primary mission of an analyst or systems designer is to:

- A. calculate the Return on Investment
- B. development of Software Evaluation Tool
- C. create a Data Flow Diagram
- D. extract the physical requirements of the users and convert them to software

Answer: Option D

Q5. _____ is a process to identify the key aspects of an entity and hiding the rest.

- A. Encapsulation
- B. Inheritance
- C. Abstraction
- D. Polymorphism

Answer: Option C

Q6. Among the following loops which is a post tested loop?

- A. while
- B. do-while
- C. for
- D. If

Answer: Option B

Q7. Which one is not a type of topology?

- A. Star-topology
- B. Circuit-topology
- C. Ring-topology
- D. Bus-topology

Answer: Option B

Q8. Assume: Linked list as head -> 2 -> 4 -> 6 -> 8

```
1 struct emp
2 {
3     int emp-id;
4     structemp *next;
5 };
6 structemp *head,*temp;
7 temp = head;
8 while(temp->next!= NULL)
9 {
10     printf("%d", temp -> emp_id);
11     temp = temp -> next;
12 }
```

What will be the output of the given program?

- A. 2460
- B. 2468
- C. 246
- D. 246NULL

Answer: Option C

Q9. Predict the output.

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

- A. No output
- B. 20
- C. 0
- D. Compilation Error

Answer: Option A

Q10. What would be the Time Complexity of below Code? Type your answer:

```
1 #include<stdio.h>
2 void main()
3 {
4     int count = 11;
5     for(int i = 1; i <= count; i++) {
6         printf("Time Complexity!!");
7     }
8 }
```

Answer:

O(count)

Coding

Q1. There is a bucket of water capacity of X litres, which is supposed to fill with a mug of Y millilitres water capacity. Say for example X=100 and Y=10 then, the bucket will get full of a minimum of 8 mugs (>80% and less than 100%). Bucket filling is to be stopped once more than 80% of bucket capacity is filled. The amount of water taken at a time in a mug is not fixed as it can be any value less than or equal to y. Notify to stop once the bucket is full. That is more than 80% of the capacity of the bucket and the count number of mugs poured into the bucket. Note that Bucket capacity will always be greater than Mug's capacity.

Example 1:

INPUT Values

```
100 // Enter bucket capacity in litres
as this
20 //Enter Mug capacity in litres as
this
```

```
//Enter Amount of water in MUG one after other as below
```

```
20
20
20
20
20
```

OUTPUT Values

```
BUCKET FULL!
NUMBER OF MUGS: 4
```

Note:

Order of inputs should be the same as shown in the above example. Do not use Input Prompts(Directly accept input values in order as above). Output should match with the format given above.

If the amount of water entered by the user is less than zero or greater than Mug's Capacity display "INVALID INPUT" and quit. If the capacity of Mug entered is greater than the capacity of Bucket then quit with the error message "INVALID INPUT".

Solution in C++:

```
1 #include <iostream>
2 using namespace std;
3 int main()
4 {
5     int bcap=0,mcap=0,mincap=0,filled=0,temp,mcnt=0,flag=0;
6     cin>>bcap>>mcap;
7     mincap=bcap*0.8;
8     if(mcap>bcap)
9         flag=1;
10    else
11    {
12        while(filled<mincap)
13        {
14            cin>>temp;
15            if(temp>mcap || temp<0)
16            {
17                flag=1;
18                break;
19            }
20            else
21            {
22                filled+=temp;
23                mcnt+=1;
24            }
25        }
26    }
27    if(flag==0)
28        cout<<"BUCKET FULL!\nNUMBER OF MUGS:"<<mcnt;
29    else
30        cout<<"INVALID INPUT";
31    return 0;
32 }
```

Q2. A string or character array containing array Mobile numbers is provided . Verify these five mobile numbers and identify valid as well as Invalidnnumbers. Any mobile number is greater than 10 digits or any characters is considered as invalid. Write a code which will generate a report on the count of total number of invalid mobile numbers. A valid Mobile number 'M' should be digit of length 10 with all numeric digits. Do not use any input message. Directly accept Mobile Numbers one after another as input and enter "q" or "Q" to stop as taking input.

Example 1:

```
9892568790
989A2568790
9992568790
999256879099
Q
```

Output:

```
3
```

Note:

1. Output should be in format <integer>
2. If a user enters a set of Mobile Numbers containing less than 5 or more than 5 values, display " INPUT LIMIT is 5" and quit.

Solution in C++:

```
1 #include<bits/stdc++.h>
2 using namespace std;
3 int main()
4 {
5     string m;
6     int count=0,total=0;
7     cin>>m;
8     while(m!="Q" && m!="q")
9     {
10         total++;
11         int len = m.length();
12         int i=0;
13         if(len==10)
14         {
15             for(i=0;i<len;i++)
16             {
17                 if(!(m[i]>='0'&& m[i]<='9'))
18                     break;
19             }
20             if(i!=len)
21                 count++;
22         }
23         else if(len>10)
24             count++;
25         cin>>m;
26     }
27     if(total==5)
28         cout<<count;
29     else
30         cout<<"INPUT LIMIT IS 5";
31 }
```

This document details the Slot Analysis as well as Answers to Questions that students recollected post their TCS NQT(Slot 2) on 26th 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
- 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.
- **All the programming MCQs were same as the morning slot(26th Oct – Slot 1)**
- 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. A and B can do a piece of work in 60 days, B and C can do it in 100 days, A and C can do it in 75 days. In how many days B alone can do it?

- A. 100 days
- B. 75 days
- C. 200 days
- D. 150 days

Answer: Option D

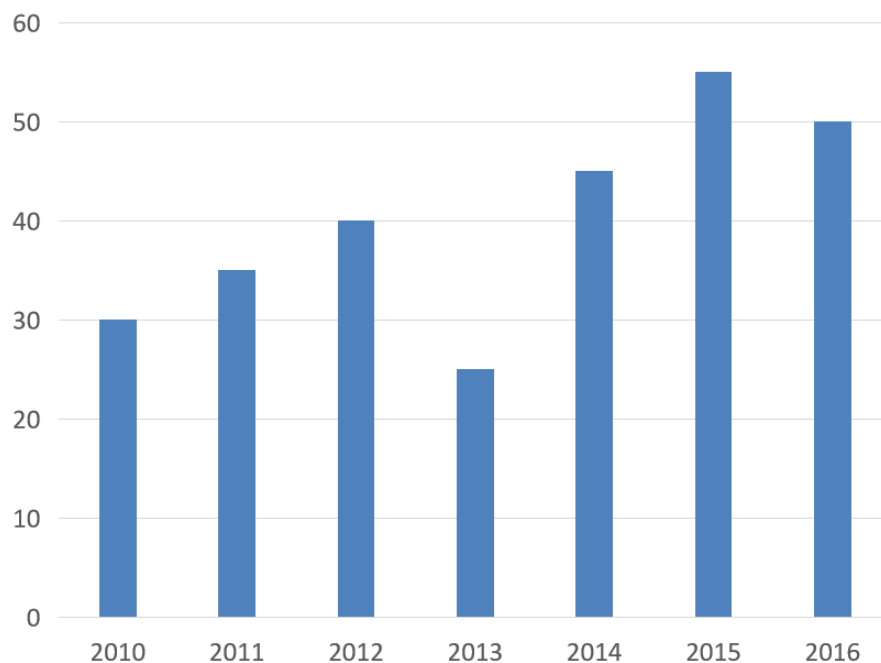
Q2. The volumes of three containers are in the ratio 2:3:4. They are full of mixtures of milk and water in the ratios 3:1, 3:2 and 4:3 respectively. When the contents of all these three

containers are poured into a fourth container, the ratio of milk and water in the fourth container is _____

- A. 121:249
- B. 12:239
- C. 391:239
- D. 391:249

Answer: Option C

Q3. The following bar graph shows the production of iron by a company (in 100000 tonnes) over the years.



What was the percentage increase in the production of iron in 2015 compared to that in 2011?

- A. 57.142%
- B. 50%
- C. 143.127%
- D. 47.125%

Answer: Option A

Q4. A shopkeeper who incurred a loss in a certain deal, finds that the difference between the selling and cost prices is $16\frac{2}{3}\%$ of their sum. By what percentage should the selling price have been increased so that it would have been a break even deal?

- A. 25

- B. 24
- C. 36
- D. 40

Answer: Option D

Q5. Train A leaves a station at a certain time and moves at a uniform speed. After 5 hours Train B leaves the station and moves in the same direction at a fixed speed or a speed of 72Km/hr. Train B catches up with Train A in 3 hours. What is the speed of Train A?

- A. 45Km/hr
- B. 27Km/hr
- C. 36Km/hr
- D. 30Km/hr

Answer: Option B

Q6. A can do a job in 26 days. B is 30% more efficient than A. In how many days can B alone do the same job?

- A. 18 days
- B. 24 days
- C. 23 days
- D. 20 days

Answer: Option D

Q7. What is the sum (in Rs) which when divided among A, B, C, D in the proportion 2:3:5:8 provides Rs. 8420 less to D than what it provides to him when the proportion is $\frac{1}{2}:\frac{1}{3}:\frac{1}{5}:\frac{1}{8}$?

- A. 25020
- B. 12510
- C. 37530
- D. 17540

Answer: Option A

Q8. If the same simple interest gets paid annually on three different sums of money in schemes providing interest rates of 10,12 and 15 per cent respectively per annum. What is the equivalent rate of interest on the total sum?

- A. 12.67

- B. 12
- C. 12.5
- D. 12.33

Answer: Option B

Q9. If the mean of 29 observations is 33 and on adding one more observation the new mean becomes 34. What is the value of the 30th observation?

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

Answer: Option C

Q10. If the curved surface area of a cylinder is 1012 cm^2 and height of the cylinder is 23cm, what is volume of the cylinder?

- A. 3602 cm^3
- B. 3502 cm^3
- C. 3712 cm^3
- D. 3542 cm^3

Answer: Option D

Q11. If there is a 45% increase in amount in 3 years at S.I, what will be the compound interest of Rs.12000 at the same rate after 2 years?

- A. 3600
- B. 3870
- C. 15600
- D. 1800

Answer: Option B

Q12. A bus travels the first one-fourth distance at a speed 15 kmph the second one-fourth distance at a speed of 20 kmph and the third one-fourth distance at a speed of 30 kmph and the last one-fourth distance at a speed of 40 kmph. The average speed of the bus for the whole journey is _____

- A. 22.857 kmph
- B. 34.056 kmph
- C. 29.027 kmph
- D. 26.250 kmph

Answer: Option A

Q13. What is the mean proportional between the fourth proportionals of (0.03, 5, 0.006) and (0.81, 29.4, 5.4)?

- A. 14
- B. 1.4
- C. 2.8
- D. 0.28

Answer: Option A

Q14. What is the standard Deviation(correct up to two decimal places) of the numbers: 21334, 21335, 21336, 21337 and 21338?

- A. 21336.41
- B. 2
- C. 21338
- D. 1.41

Answer: Option D

Q15. If the mean of the data 5, 7, 10, 14, x, 25, 32, 19 is x, what is the value of x?

- A. 14
- B. 15
- C. 14.5
- D. 16

Answer: Option D

Q16. If 6 pens and 7 pencils together cost Rs. 90, while 5 pens and 6 pencils cost Rs. 76, what will be the cost of each pen?

- A. Rs. 12
- B. Rs. 10
- C. Rs. 8

D. Rs. 6

Answer: Option C

Q17. If $5\sqrt{5} \times 625 \times \sqrt[4]{5} = 5^{n+\frac{1}{5}}$, what will be the value of n?

- A. $4\frac{11}{20}$
- B. $5\frac{11}{20}$
- C. $7\frac{11}{20}$
- D. $6\frac{11}{20}$

Answer: Option B

Q18. Sarita wants to gift a stationery kit which includes a pencil, an eraser and a sharpener to some kids in her village. She went to a wholesaler for purchasing these items. The seller sells pencils in packing of 12, erasers in a packing of 18, and sharpeners in a packing of 10. She purchases the minimum number of packets of pencils, erasers and sharpeners so that a fixed number of kits can be prepared without any item being unused or short. What is the number of packets of pencils purchased by her?

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

Answer: Option A

Q19. The expenditure of a person is 60% of his income. His income increased by 15% and he increased his expenditure by 10%. What is the percentage of increase in his savings?

- A. $30\frac{1}{2}\%$
- B. $34\frac{1}{2}\%$
- C. $25\frac{1}{2}\%$
- D. $22\frac{1}{2}\%$

Answer: Option D

Q20. When a owner sells his house for Rs.26400, he loses 20%. At what price should he have sold the house in order to get profit at 12%?

- A. Rs. 36960
- B. Rs. 33000
- C. Rs. 36000
- D. Rs. 35000

Answer: Option A

Q21. If the real positive fourth root of $(28 + 16\sqrt{3})$ is divided by $(2 + \sqrt{3})$, and the result is expressed as $(a + b\sqrt{3})$, with a & b both being integers, then $(4a + 3b)$ is equal to:

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

Answer: Option B

Q22. If $\sqrt{1 + \frac{31}{225}} = 1 + \frac{x}{15}$, then the value of x is

- A. 1
- B. 16
- C. 15
- D. 2

Answer: Option A

Q23. What is the area (in cm^2) of a trapezium whose parallel sides are 12 cm and 16 cm and whose height is equal to that of an equilateral triangle of side $\sqrt{3}$ cm?

- A. 21
- B. 17.5
- C. 24.5
- D. 28

Answer: Option A

Q24. The following table gives the expenditure of a company (in Lakh Rupees per annum) over the given years 2015 to 2019.

Expenditure/ Year	Salary	Transport	Bonus	Taxes	Advertisement
2015	250	97	4	80	4.1
2016	200	113	4.25	70	3.0
2017	270	95	4.5	85	8.1
2018	300	103	4.5	79	7.6
2019	325	92	5	75	9.2

The total amount incurred on advertisement by the company during the period 2015 to 2019 is what percent of the total amount of transport incurred during this period?

- A. 3.75%
- B. 4%
- C. 6.4%
- D. 3.5%

Answer: Option C

Q25. If $20\%(a + b) = 25\%$ of $(a - b)$, what percent of a is b ?

- A. $11\frac{5}{9}$
- B. $11\frac{7}{9}$
- C. $11\frac{1}{9}$
- D. $11\frac{2}{9}$

Answer: Option C

Q26. The daily sale of wheat flour (in kgs) in a certain grocery shop is given below table.

Mon	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
-----	---------	-----------	----------	--------	----------	--------

47	15	37	20	38	42	18
----	----	----	----	----	----	----

What is the standard deviation of the given data?

- A. 14.4
- B. 12.0
- C. 13.2
- D. 13.4

Answer: Option B

Verbal Ability

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

There are many jobs where workers deal with _____ situations. Therefore, companies must ensure that proper safety _____ are in place to protect the workers from any injury

- A. Hazarding/ precautions
- B. hazardous/ measures
- C. hazards/ measure
- D. hazard/ gears

Answer: Option B

Q2. Fill in the blanks with the most appropriate pair of words from the options given below.

Did you remember _____ seats for the theatre tomorrow?

Yes, I have the tickets here. Do you mind _____ it with you? I fear I may lose them.

- A. to have booked/ keeping
- B. booked/ to keep
- C. booking/ to keep
- D. to book/ keeping

Answer: Option D

Q3. Fill in the blanks with the most appropriate pair of words from the options given below.

The Indian Air Force was _____ established on 8th October 1932 as apart of an auxiliary air force of the British Empire and was known as the Royal Air Force. It was only after India became a republic in 1950 that the name _____ to Indian Air Force.

- A. officially/ was changed

- B. judiciously/ has been changed
- C. official/ has been changed
- D. officious/ had been changed

Answer: Option A

Q4. One part of the sentence below may contain an error. Identify the part. If there is no error, choose 'No error'

There is no doubt /that this is the most difficult but disrupting year /that many of us will ever have experienced.

- A. that this is the most difficult but disrupting year
- B. that many of us will ever have experienced.
- C. No error
- D. There is no doubt

Answer: Option B

Q5. 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 got lost at the fair and was scared
- B. I am scared after I am lost at the fair
- C. I am lost at the fair so I am too scared
- D. I went to fair and got scared as I was lost

Answer: Option A

Q6. Complete the following sentences by filling in the blanks (1 and 2) with the right words from the list given below.

Melting glaciers add to rising sea levels, which in turn increases coastal _____ and elevates storm surge as warming air and ocean temperatures create more frequent and intense coastal storms like hurricanes and typhoons. Specifically, the Greenland and Antarctic ice sheets are the largest _____ of global sea level rise.

Blank 1: A. erosion, B. eroded, C. corrosion, D. corrode

Blank 2: A. destruction, B. contribution, C. contributors, D. responsibility

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

Answer: Option A

Q7. You are going to read a text about skills that the workforce of the future will need. Some sentences are missing from the text. Choose from the list(A-C) the most appropriate sentence
As technological innovations continue to change the workplace, we are seeing more industries entrust their operations to new gadgets, software and programs that can transform the workplace. (1) _____ With more industries starting to embrace RPA software, RPA robots would be able to handle mundane, repetitive tasks like some of the clerical work normally dealt with by administrative staff, thereby lowering running costs and increasing productivity. There is a common concern that companies employing technology like RPA are only interested in increasing their profit margins through cost reduction, and that this trend would eventually leave most of the workforce jobless.(2)_____

- A. By equipping our future generation of workers with such business skills, we can ensure that when automation fully takes over, our workers will have the survival skills to become better employees and leaders of the future.
- B. However, while it is true that the menial tasks of administrative and clerical jobs are likely to be taken over by automation, the demands on the average office worker will evolve to include more creative work, managerial duties and communication with clients and suppliers
- C. One such technology that has the potential to revolutionise workplaces in the coming years is RPA (Robotic Process Automation).

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

Answer: Option D

Q8. Read the following passage and answer the questions given after it.

Rosio Sánchez, a Mexican-American chef who lives in Copenhagen, makes the best tortillas in Scandinavia. That, she admits, isn't necessarily saying much – like laying claim to the best pizza in Indonesia. "It was so much worse," she said, describing the state of Mexican food when she arrived in 2010 to work as a pastry chef at the celebrated restaurant Noma. "Imagine the worst Tex-Mex food in America, and imagine that being passed on like a game of telephone, by

people who have no idea what real Mexican food is.” That is beginning to change, and not only in Copenhagen, where Sánchez has opened a taqueria with freshly ground, hand-pressed corn tortillas.

It goes far beyond tacos and tortillas, though: Mexican cuisine has made the leap to the global stage of fine dining.

Chefs are making house-cured chorizo in Toronto, and Michelin-starred chilaquiles at Punto MX in Madrid. Last week, the Houston chef Hugo Ortega, who began his working life as a shoeshine boy in Mexico City, received the James Beard Foundation’s award for best chef in his region: a first for a Mexico-born chef.

“Everywhere, I see a new respect for Mexican culture,” said Martha Ortiz, a celebrity chef in Mexico who is opening a warmly elegant restaurant, Ella Canta, in the InterContinental London Park Lane hotel this summer. Ten years ago, when a taco in London might easily have contained canned baked beans, the idea of a Mexican restaurant in a posh hotel would have been mystifying.

“Our traditional food has always had a high value at home, and there is a lot of respect for the women who produce it,” she said. “But for people internationally to be excited about it and willing to pay for it? That is new.”

Q8. What is the main idea of the passage?

- A. there is more to Mexican food than just tacos and tortillas
- B. there are celebrity chefs in Mexican cuisine nowadays
- C. Mexican food is being globally appreciated now
- D. Mexican restaurants are opening in different countries

Answer: Option C

Q9. Why is the Mexican food being compared to a game of telephone?

- A. It was like the worst Tex-Mex food being served in the name of Mexican food.
- B. It reached people instantly like a telephone message.
- C. Its naturally was drastically changed when it reached people in other countries
- D. It was passed from hand before reaching the consumers.

Answer: Option A

Q10. Which of the following is NOT a Mexican food item?

- A. Tortillas
- B. Chorizo
- C. Chilaquiles
- D. Taqueria

Answer: Option B

Q11. In the context of the given passage, which of the following is closest in meaning to the word 'mystifying'?

- A. Appropriate cuisine
- B. Perfectly suitable
- C. Impossible to explain
- D. A special occurrence

Answer: Option D

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

Since sunrise to sunset/ my grandmother would sit by her wheel/spinning and reciting prayers.

- A. my grandmother would sit by her wheel.
- B. spinning and reciting prayers
- C. Since sunrise to sunset
- D. No error

Answer: Option C

Q13. For the four sentences (S1 to S4) in the paragraph below, sentences S1 and S4 are given.

From the options P, Q and R, choose appropriate sentences for S2 and S3 appropriately.

S1: The past is not dead and static, it is alive and dynamic and is moved in determining the quality of our present and the prospects of our future.

S2: _____

S3: _____

S4: I, therefore, pledge myself to the loyalty of our past culture from whomsoever it may have come and by whomsoever it may have been contributed. (Dr. Radhakrishnan)

P: The process of its constant renewal is, indeed the process of growth of national culture and national character.

Q: It is the business of education, as I see it, to minister this constant renewal and I may be forgiven the presumption that the choice to this high office has mainly if not entirely been made on account of my long association with the education of my people

R: The work on one's self is to follow the urge towards moral development as a free person and under self-imposed discipline which alone can render that development possible.

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

Answer: Option D

Q14. Which of the following sentences does NOT use formal language?

- A. In a short time, we will serve refreshments
- B. Welcome aboard! To operate your seat belt, insert the metal tab into the buckle, and pull tight
- C. We'd like to thank you folks for flying with us today.
- D. This is the final boarding call for passengers Neha and Mohit Sahni booked on flight 372A to Kansas City. Please proceed to Gate 3 immediately.

Answer: Option B

Q15. 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

Q16. For the four-sentence (S1 to S4) paragraph below, sentences S1 and S4 are given. From the options P Q and R, choose the appropriate sentences for S2 and S3 respectively.

S1: The Hawa Mahal or Palace of the Wind was built for the female residents of Jaipur's City Palace

S2.

S3.

S4. The vented, ornate windows and balconies provided passive-cooling, keeping the interior more comfortable than the sunbaked streets, all without using any mechanical air conditioning devices

P. And they could do so in relative comfort as its architecture allowed cool air to pass through

Q. Traditionally, the women of Jaipur wear scarves over their faces when in public

R. It gave the women of City Palace a place to watch the activities on the streets of the city without having to wear veils and scarves

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

Answer: Option B

Q17 to Q20. Read the passage given below and answer the following questions:

Terming India's winning of a non-permanent seat of the UN Security Council one of its "best performances" ever, the Union government said the majority of votes it received in the General Assembly demonstrated the "goodwill" the country enjoyed. India will promote multilateral solutions for the COVID-19 crisis and enhance global action against terrorism, among its priorities, during the two-year term beginning January 2021, it said. In the election decided overnight on Wednesday, India secured 184 of the 192 votes, far in excess of the 128, or two-thirds minimum, it needed to be confirmed.

"The strong support by almost the entire U.N. membership for India's election demonstrates the goodwill that India enjoys in the U.N. and the confidence that the international community

has reposed in India's capability to contribute to the work of the Council," said MEA Secretary Vikas Swarup on Thursday.

India's term on the 15-member Council will be its eighth. Briefing the media about the win, Mr. Swarup said India would be the "voice for all those who are not represented in the Council" during its tenure. He also thanked the government of Afghanistan, which had allowed India to contest unopposed by giving up its bid for the seat in favour of India in 2013.

On the basis of your understanding of the passage answer the questions below by choosing the best option.

Q17. India's overwhelming success at the recent General Assembly elections of the UN Security council for a non permanent seat was a result of the tremendous goodwill of a number of nations

Which of the following sentences does not represent the above thought?

- A. The strong support by almost the entire U N membership for India's election demonstrates the goodwill that India enjoys in the UN
- B. ...the Union government said the majority of votes it received in the General Assembly demonstrated the "goodwill the country enjoyed
- C. ...the confidence that the international community has reposed in India's capability to contribute to the work of the Council
- D. Briefing the media about the win, Mr Swarup said India would be the voice for all those who are not represented in the Council" during its tenure

Answer: Option D

Q18. What will be India's priorities during its two-year term in the Security Council?

- A. To further strengthen the confidence reposed in its abilities by the international community.
- B. To build ground for the Government of Afghanistan to make way for India to stand unopposed in 2013.
- C. To be a voice for those represented at the Security Council.
- D. To promote multilateral solutions for Covid-19 crisis and enhance action against global terrorism.

Answer: Option D

Q19. What was the total number of votes India would have required to be confirmed a non-permanent seat of the UN Security Council?

- A. Two thirds of 184
- B. 184
- C. 192
- D. 128

Answer: Option D

Q20. According to the MEA secretary, Mr. Vikas swarup why does India need to thank Afghanistan for their success?

- A. Afghanistan India's biggest supporter in the UN Security Council
- B. Afghanistan voted for India, so India could win
- C. Afghanistan campaigned in favour of India
- D. Afghanistan gave up its bid for a seat in India's favour in 2013.

Answer: Option D

Q21. Self styled visionaries and people particularly fond of their pajamas have for decades been arguing that a lot of work done in large shared offices could better be done at home. With covid-19 their(1) _____ were put to the test in a huge if not in a randomized trial. The preliminary results are now in. Yes a lot of work can be done at home. And what is more, many people seem to (2) _____ doing it there.

Blank 1:	P. mindsets	Q. ideas	R. philosophies	S. designs
Blank 2:	P. desire	Q. select	R. Prove	S. prefer

- A. 1-R, 2-P
- B. 1-Q, 2-S
- C. 1-P, 2-Q
- D. 1-S, 2-R

Answer: Option B

Q22. You are going to read a text about motivation. Some sentences are missing from the text. Choose from the list(A-C) the most appropriate sentence

Motivation is the desire to act in the service of a goal. It is the crucial element in setting and attaining one's objectives--and research shows that people can influence their own levels of motivation and self-control. Motivation can have many sources, and often people have multiple motives for engaging in any one behaviour (1) _____ Motivation can also be intrinsic whereby the inspiration comes from within a person--the desire to improve at a certainty activity (2)

- _____
- A. Everyone feels demotivated or devoid of willpower at times
 - B. Intrinsic motivation tends to push people more forcefully, and the accomplishments are more fulfilling
 - C. Motivation might be extrinsic, whereby a person is inspired by outside forces--other people or events that transpire.
- A. (1)-A, (2)-B
 - B. (1)-C, (2)-B
 - C. (1)-A, (2)-C
 - D. (1)-B, (2)-A

Answer: Option B

Reasoning Ability

Q1. There are five persons in a group: Raju, Sanjay, Deepak, Suresh and Mukesh. Deepak is elder to Raju, but not tall as suresh. Suresh is younger to Sanjay and taller than Mukesh and Raju. Sanjay is taller than Mukesh but not taller than Raju. Mukesh is elder to sanjay but the shortest of all friends. Who among the following is the eldest?

- A. Suresh
- B. Sanjay
- C. Either Deepak or Mukesh
- D. Deepak

Answer: Option C

Q2. Given below is a question followed by two statements, I and II each containing some information. Decide which of the statements is/are sufficient to answer the question

In a row, Vijay is sitting exactly in the middle of Ambar and Sonam. What is Vijay's position from the right end of the row?

Statements:

- I. Vijay is 16th from the left and is separated by four persons from Ambar who is to his left and if Ambar interchanges his position with sonam, he becomes 15th from the right
 - II. Vijay is 16th from the left and if Sonam changes her position with Ambar, she becomes 11th from left
- A. Both the statements I and II are not sufficient
 - B. Either statement I alone or statement II alone is sufficient
 - C. Statement I alone is sufficient
 - D. Statement II alone is sufficient

Answer: Option A

Q3. Four Statements are given followed by four conclusions numbered I, II, III and IV. 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:

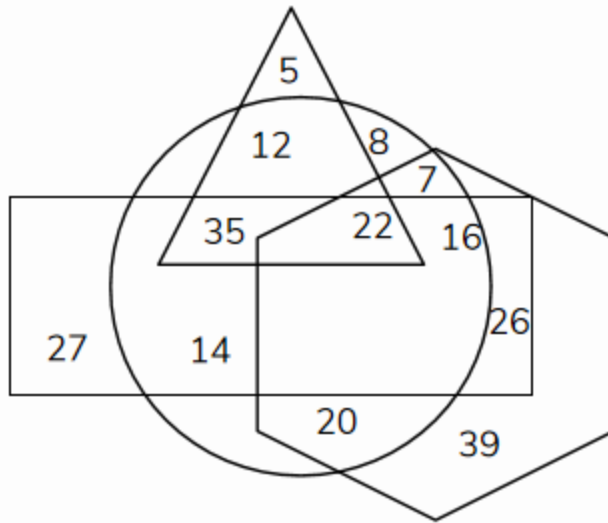
- 1. All vegetables are fruit
- 2. No carrot is fruit
- 3. Some roots are carrot
- 4. All roots are eatables

Conclusions:

- I. Some fruits are eatables
 - II. No root is vegetable
 - III. Some eatables are carrots
 - IV. Some roots are vegetables
- A. Only conclusion II, III and IV follow
 - B. Only conclusion III and IV follow
 - C. Only I and either II or IV follow
 - D. Only III and either II or IV follow

Answer: Option D

Q4. 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 or both?

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

Answer: Option B

Q5. Eight persons P,Q,R,S,T, U, V and W are sitting around a circular table facing the centre. U is sitting between S and W. P is facing W and T is second to the left of W. S is third to the right of Q, who is second to the right of V.

Who is sitting between R and V?

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

Answer: Option B

Q6. Read the following information carefully and answer the given question:

A public charitable organization desires to select a candidate for the post of programme Coordinator for a health project, based on the following criteria:

The Candidate must

- (i) hold B.E. degree with minimum 60% marks and above
- (ii) have an experience of 5 years in the relevant field
- (iii) be ready to execute a bond of three years of service

Incase of the applicant who satisfies all other criteria except -

1. At (i) above, but has B.E. degree with minimum 55% marks but has completed M.Tech with 50%, his/her case is to be referred to the secretary.
2. At (ii) above, but has 3 years full time experience as a programme manager, his/her case is to be referred to the project director
3. At (iii) above, but is ready to give Rs.30,000/- as secure money, his/her case is to be referred to the president of the trust

Based on the criteria and information provided decide the course of action.

Jayvinder has completed B.E degree with 56% marks and also has M.Tech with 55% marks, he has been working for 6 years in a Government Funding Health Project. He is ready to execute a bond of 3 years of service. What decision would be taken for him?

- A. Refer to project director
- B. Refer to secretary of trust
- C. Refer to president of trust
- D. He would be selected

Answer: Option B

Q7. In a certain code, if A + B means A is the wife of B, A x B means A is the son of B, A/B means A is the brother of B then, What is the meaning of the expression H/K x S + M?

- A. K is the brother of M
- B. H is the brother of M
- C. H is the son of M
- D. M is the son of H

Answer: Option C

Q8. Given below is a question followed by two statements I and II, each containing some information. Decide which of the statements is/are sufficient to answer the question

How much did Mayank get as profit at the year-end in business done by Abinash, Mayank and Pankaj?

Statements:

- I. Abinash invested Rs.6000 every month for eight months and earned a profit which was one and a half times that of Mayank while that of Abinash's total investment is three times than that of Pankaj
 - II. Pankaj and Mayank invested for one year in the ratio of 1:2 and the total profit earned by all three was Rs.3600
- A. Statement II alone is sufficient
 - B. Both statements I and II are not sufficient
 - C. statements I and II are necessary
 - D. Statement I alone is sufficient

Answer: Option D

Q9. There are four friends Roy, Prem, Amar and Dhir

1. Each one plays one of the following games - Badminton, Hockey, Tennis and Cricket
2. Each owns only one of the following coloured cars - Red, Blue, White and Yellow
3. Prem owns a white car and plays cricket
4. Amar does not play either Badminton or Tennis and does not own a yellow car.
5. Dhir does not play Badminton and owns a red car.

Who plays Badminton and owns a yellow car?

- A. Amar
- B. Dhir
- C. Roy
- D. Prem

Answer: Option C

Q10. In a family of 7 persons having 4 female and 3 male members, P is the brother of Q and son of R. R has two children and two grandchildren. V is the daughter of S who is the son-in-law of R. W is the nephew of Q and son of T. How is V related to T?

- A. Cousin sister
- B. Niece
- C. Nephew
- D. Sister-in-law

Answer: Option B

Q11. Which is the wrong term in the following series?

jkl, lin, mho, ofq, per, rds, sbu

- A. sbu
- B. per
- C. ofq
- D. rds

Answer: Option D

Q12. A statement is followed by three assumptions numbered I and II. Consider the statement and decide which of the given assumption(s) is/are implicit in the statement

Statement:

The advancement of technology will lead to increase in the sale of smartphone due to its multipurpose usage

Assumptions:

- I. With the help of smartphone people uses many facilities that are available online now a day
 - II. There are more functions of smartphone rather than just conversation
- A. Neither I nor II is implicit
 - B. Both I and II are implicit
 - C. Only II is implicit
 - D. Only I is implicit

Answer: Option B

Q13. Given below is a question followed by two statements I and II, each containing some information. Decide which of the statements is/are sufficient to answer the question
What is the age of Sumit?

Statements:

- I. Sumit is five years younger than Amit, who is double the age of Prateek
- II. Prateek is 10 years older than Ravi, whose age is 22 years

- A. Statement II alone is sufficient
- B. Both statements I and II are necessary
- C. Statement I alone is sufficient
- D. Both statements I and II are not sufficient

Answer: Option B

Q14. 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. S and T
- B. P and R
- C. Q and R
- D. R and S

Answer: Option B

Q15. A statement is followed by three courses of action numbered I, II and III. Assuming everything in the statement to be true, decide which of the suggested courses of action (a decision to be taken for follow up/improvement in regard to the problem) logically follow(s) for pursuing

Statement:

In one of the worst road accident, 15 people died when a roadways bus carrying them collided on to a running track

Course of Action:

- I. The bus driver should immediately be suspended without any enquiry
 - II. The Government should make the markings to all the accident prone areas
 - III. The department of roadways should hold an enquiry at every level and try punish those who are responsible for the negligence in the court
- A. Only II follows for pursuing
 - B. Both I and III follow for pursuing
 - C. Only I follows for pursuing
 - D. Both II and III follow for pursuing

Answer: Option D

Q16. The following are the criteria for selecting trainees for the IT department of a company.

The candidate must

- 1. Be an engineering graduate in IT or Computer Science or Electronics with at least 65% of marks
- 2. Be not less than 22 years and not more than 27 years of age as on 1.3.2020
- 3. Have secured more than 80% in HSC examination
- 4. Have scored at least 60% in the written test and at least 50% in the interview

However if the candidate fulfils all the above except

- (i) at 2 and/or 3 but has scored at least 70% in the written test and 60% in the interview his/her case is referred to the General Manager, HR
- (ii) at 3 and/or 4 but has secured more than 75% in the engineering examination his/her case is to be referred to the VP,HR

Based on the criteria given above and without adding any additional information, you have to make a decision for the candidate whose profile has been given below. Mark your answer by choosing the appropriate alternative

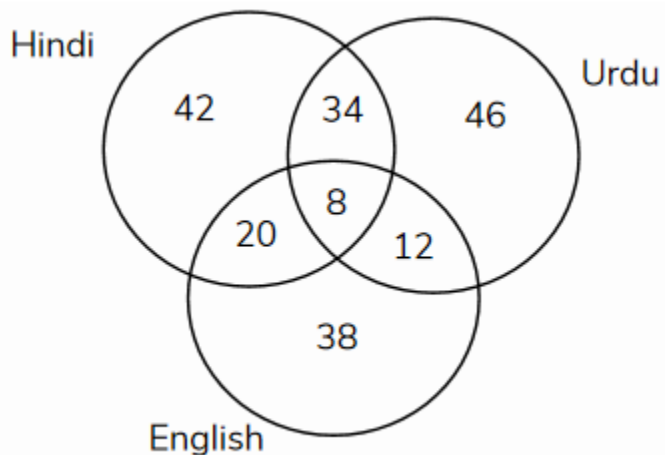
Poonam passed graduate engineering in computer science in 2015 at the age of 21 years with 78% of marks. She scored 65% in the interview as well as in the written test. She has secured 80% of marks in the HSC examination.What decision would be taken in her case?

- A. Her case is to be referred to the VP, HR

- B. Her case is to be referred to the General manager, HR
- C. She is not to be selected
- D. She is to be selected

Answer: Option C

Q17. Consider the venn diagram given below.



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 in Hindi Language only?

- A. 2290
- B. 4320
- C. 3150
- D. 3232

Answer: Option C

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. A doctor has a clinic where he serves his patients. The doctor's consultation fees are different for different groups of patients depending on their age. If the patient's age is below 17. The fee is 200 INR. If the patient's age is between 17 and 40, fees are 400 INR. If the patient's age is above 40, fees are 300 INR. Write a code to calculate earnings in a day for which one array/List of values representing age of patients visited on that day is passed as input.

Note:

- Age should not be zero or less than zero or above 120.
- Doctors consult a maximum of 20 patients a day.
- Enter age value (press ENTER without value to stop):

Example 1:

Input

20
30
40
50
2
3
14

Output

Total income 2000 INR

Solution in C++:

```
1 #include<iostream>
2 using namespace std;
3 int main()
4 {
5     int a[20],i=0,income=0;
6     while(cin>>a[i])
7     {
8         if(a[i]<1 || a[i]>120)
9         {
10             cout<<"INVALID INPUT";
11             return 0;
12         }
13         else if(a[i]<=17)
14             income=income+200;
15         else if(a[i]<=40)
16             income=income+400;
17         else
18             income=income+300;
19         i=i+1;
20         if(i==20)
21             break;
22     }
23     cout<<"Total Income "<<income<<" INR";
24 }
```

2020 - TCS NQT

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SLOT 1:

NUMERICAL ABILITY

Question 1- What is the sum (in RS) which when divided among X Y Z in the proportion 3:5:7 provides rupees 8000 more to Z then what it would have done to him when the proportion is 11 : 15 : 19?

1. 180000
2. 120000
3. 175000
4. 135000

Answer: 180000

Question 2- If the positive square root of (root 90 + root 80) is multiplied by (root (2 -1)) and the product is raised to the power of four, the result would be

1. 100
2. 1600
3. 11520000
4. 10

Answer: 10 (use the TCS calculator directly to find the answer of this question)

Question 3- A man has to travel 50 km in 2 hours. He could cover 20 km in one hour, and then had to stop for 10 minutes for refueling. By What factor should he increase his speed with reference to that during the first hour so as to be able to complete the journey as per schedule?

1. 1.5
2. 1.8
3. 1.2
4. 2.4

Answer: 1.8

Question 4- 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 half the work?

1. 80
2. 20
3. 40
4. 60

Efficiency of X = $4a$

Efficiency of Y = a

Time taken by both to complete a work = 16 days

$$\frac{1}{4a} + \frac{1}{a} = \frac{1}{16}$$

$$\frac{(1+4)}{4a} = \frac{1}{16}$$

$$\frac{5}{4a} = \frac{1}{16}$$

$$a = 20$$

Hence X will do the work in 20 days

And Y will do the work in 80 days

Thus Y will do half of work in 40 days

Question 5- If $5^x 3^y = 225 \times 405$, find the value of $x^2y - 3x$

1. 27
2. 81
3. 125
4. 25

Question 6- 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?

1. 10.5
2. 11.5
3. 11
4. 12

Answer - 11

Median of the even data = (sum of middle terms) / 2

$$= \frac{[(N - 1) + 15]}{2} = 12.5$$

Question 7 - How much percentage is (0.025% of 240% of 1.5) of 0.9?

1. 10
2. 0.01
3. 0.1
4. 1

Question 8 - 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?

1. 10% loss
2. 5% gain
3. 10% gain
4. 5% loss

Answer: 10% gain

Let the C.P of each copy be Rs 100

ATQ one copy is sold at $0.8 \times 100 = 80$

One copy is sold at $1.4 \times 100 = 140$

Total money spent in buying the copies = Rs 200

Total money earned after selling the copies = Rs $(80 + 140) = \text{Rs } 220$

Total gain of Rs 20. Therefore gain% = 10%.

Question 9: A file of cadets consisting of ten rows and five columns measures 420 m 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 each cadet is 80 cm and he takes 57 strides per minute?

1. 1 hr 10 min
2. 1 hr 20 min
3. 1 hr 24 min
4. 1 hr 15 min

Question 10: 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?

1. $1/270$
2. $1/67$
3. $1/68$
4. Not visible

Question 11 -The diameter of a pizza is 30 cm. What is the area(in cm^2) of the upper surface of a sector of the pizza whose arc length is 8 cm?

1. 120
2. 120π
3. 60π
4. 60

Answer: Area of sector when arc is given = $(L \times r)/2$

Where L = length of arc and r = radius of the circle

Here L = 8 cm and r = 15 cm

Therefore, Area = $(8 \times 15)/2 = 60\text{cm}^2$

Question 12- In a competitive exam, 5 marks are awarded for every correct answer and for every wrong answer, 2 marks are deducted. Sathwik scores 32 marks in the examination. If 4 marks had 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 ?

1. 14
2. 12
3. 20
4. 26

Answer: 26 Answer

In given Question:-

Correct answer = $5x$ and wrong answer = $2y$

Correct answer = $4x$ and wrong answer = $1y$

So,

$$5x - 2y = 32$$

$$4x - 2y = 34 \text{-----} \times 2$$

Now

$$5x - 2y = 32$$

$$8x - 4y = 68$$

By solving

$$3x = 36$$

$$x = 12$$

Now to find 'y'

$$5 \times 12 - 2y = 32$$

$$60 - 2y = 32$$

$$y = 14$$

By adding $x + y$

$$12 + 14 = 26$$

Questions in the test = 26

Question 13- 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 ?

1. 2.5% gain
2. 2.5% loss
3. 4% loss
4. 4% gain

Answer - 4% loss

Question 14- The mean of a set of data is 5. What will be the mean if ten is subtracted from each data ?

1. -5
2. 5
3. 10
4. -15

Answer = -5

Explanation

let the number of data be n

so sum of data = mean * number of data

$$= 5n$$

now 10 is subtracted to each data

so now sum becomes = $5n - 10n = -5n$

mean = sum of data / no. of data

$$= -5n/n = -5$$

so new mean becomes -5

Question 15- 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 ?

1. 15
2. $19\frac{1}{21}$
3. 16
4. $15\frac{1}{2}$

Questions 16- 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

1. 2.4
2. 0.91.2
3. 3

Answer: 1.2

Here $h = 6$ cm

$$C.S.A = 2\pi rh$$

$$2\pi rh = 5(2\pi r^2)$$

$$2 \times \pi \times r \times 6 = 10 \times \pi \times r^2$$

$$12 \times \pi \times r = 10 \times \pi \times r^2$$

$$12 = 10r$$

$$1.2 = r$$

Questions 17- A sum invested on simple interest grows to Rs 22500/- and Rs 25500/- is seven and nine years respectively. What is the rate percentage of the interest ?

1. 7.5
2. 9.6
3. 12.5
4. 13.5

Answer:

Question 18- What is the value of $(0.0000128)^{17}$?

1. 0.5
2. 5
3. 0.2
4. 2

Solution :- $\frac{1}{5} = 0.2$

Question 19 - The variation in temperatures throughout the day in a desert town was studied on the basis of the record of minimum and maximum temperatures which were 36 and degrees centigrade respectively. What was the standard deviation in degree centigrade?

1. **12**
2. **22**
3. **14**
4. **28**

Question 20 - 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?

1. 3075
2. 2975
3. 3024
4. 3126

Question 21- The diameter of a pizza is 30 cm. What is the area (in cm^2) of the upper surface of a sector of the pizza whose arc length is 8 cm?

1. 120
2. 120
3. 60
4. 60

Question 22- 96 men were engaged for a project of constructing a railway track of the length of 18 km in four weeks. After one week it was observed that the work of 4m was completed. How many additional men should be engaged for timely completion of the project?

1. **16**
2. **14**
3. **15**
4. **12**

Question 23- If n is an integer such that $1nn352$ is a six-digit number exactly divided by 24, what will be the sum of the possible value of n ?

1. 27
2. 15
3. 9
4. 21

Solution:-

Question 24

What is the mean deviation of the data 8,9,12,15,16,20,24,30,32,34?

- A.10.2
B.8
C.0
D.9.6

Solution:-

Step 1

Find the mean

$$8+9+12+15+16+20+24+30+32+34/10$$

$$=200/10$$

$$=20$$

Find the distance of each value from that mean

Value	Distance from 20
8	12

9	11
12	8
15	5
10	4
20	0
24	4
30	10
32	12

34

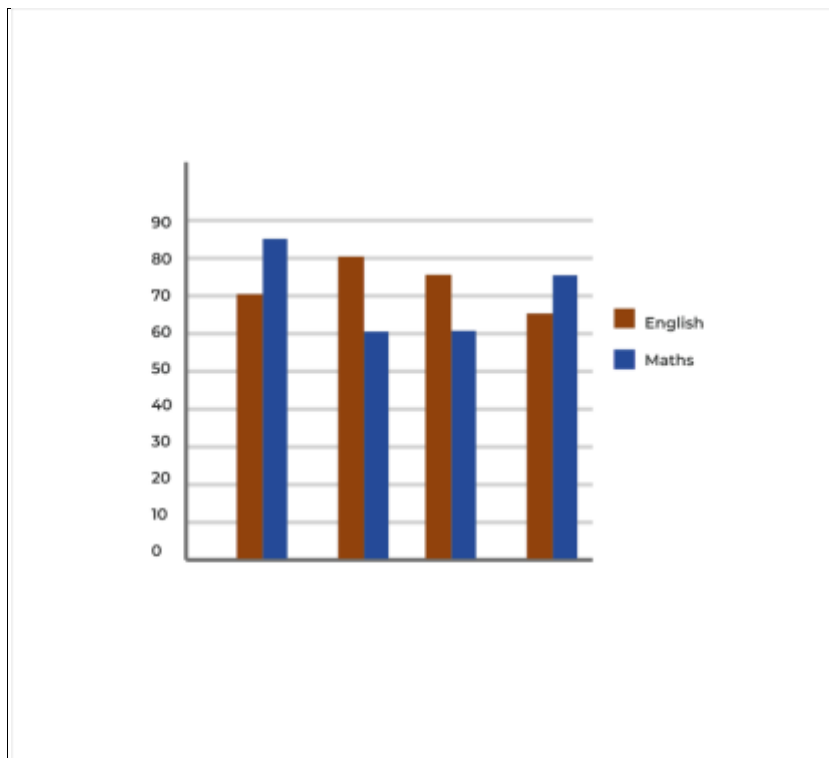
14

Step 3:- Find the mean of those distances

$$12+11+8+5+4+0+4+10+12+14/10$$

$$80/10=8$$

Question 25 - The marks scored by a student out of 100 in English and Mathematics at four consecutive monthly test 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 the highest ?



1. Jan
2. Mar
3. Apr
4. Feb

Question 26-

The temperature (in $^{\circ}\text{F}$) of a patient was recorded (using a clinical thermometer with smallest division equal to 1°F) during 6 AM to 8 PM on four consecutive days, A, B, C, D at intervals of two hours and the results are presented in a tabular form given below. The reading at a particular time provides the average body temperature (ABT) of the patient for the previous one hour. He is supposed to be given temperature controlling medicine (TCM) at the bedtime if the total duration of his ABT remaining above 99°F during the 14 hour period of record is four hours or more. on which day, TCM was required?

Day/Time	0600	0800	1000	1200	1400	1600	1800	2000
A	101	100	99	98	99	98	100	100
B	98	99	100	100	99	99	100	102
C	98	99	99	101	100	99	99	100
D	98	98	99	99	99	98	98	99

- A
- D
- B
- C

VERBAL ABILITY

Question 1 - For the four sentences S1 to S4 paragraph below, sentences S1 and S4 are given. From the options P Q and R, choose appropriate sentences for the following.

S1- Gandhi does not reject machinery as such

S2-

S3-

S4 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 toothpick 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"

1. QP
2. QR
3. RQ
4. PQ

Ans PQ

Question 2 : Which of the following sentences does NOT use informal language?

1. Did you locate our office quite easily?
2. You will be working with different managers during your training
3. **We shall endeavour to inform you of the position in two weeks time**
4. Is there anything else you want to ask?

Answer - C.. Use of endeavour is formal. Informal would be try.

Question 3: One part of the sentence below may contain an error. Identify the part.
If there is no error, choose 'No Error'

Everyday life have become more complicated with the advancement in mobile technology.

1. **Everyday life have become**
2. No error
3. advancement in mobile technology
4. more complicated with the

Answer - A . everyday life has become (life is singular)

Question 4 : 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

1. I am scared after I am lost at the fair
2. I went to the fair and got scared as i was lost
3. I am lost the fair so i am too scared
4. **I got lost at the fair and was scared**

Answer - D

This sentence combines all the elements of the 3 sentences with a proper use of conjunction and tenses.

Question 5 - Government have been promising the eradication of child labour in high-risk industries in India for many years. However, almost 100 million children are still not able to go to school, and around 10 million are working in (1) _____ industries. India has the biggest child population of 380 million in the world _____ 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

Question 6 : Which of the following sentences does NOT use informal language?

1. Did you locate our office quite easily?
2. You will be working with different managers during your training
3. **We shall endeavour to inform you of the position in two weeks time**
4. Is there anything else you want to ask?

Answer - C.. Use of endeavour is formal. Informal would be try.

Question: 7 One part of the sentence below may contain an error. Identify the part.
If there is no error, choose 'No Error'

Everyday life have become more complicated with the advancement in mobile technology.

1. **Everyday life have become**
2. No error
3. advancement in mobile technology
4. more complicated with the

Answer - A . everyday life has become (life is singular)

Question 8: 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

1. I am scared after I am lost at the fair

2. I went to the fair and got scared as i was lost
3. I am lost the fair so i am too scared
4. **I got lost at the fair and was scared**

Answer - D

This sentence combines all the elements of the 3 sentences with a proper use of conjunction and tenses.

Question 9 : Henry looks carefully into the telescope which lets him see far, far away, as far as the distant nebulae on the far edges of the Milky Way. Henry is an _____. He looks at the sky and stars in particular. Even though he spends much of his time looking at detailed computer reports, which are just lists and lists of numbers. His _____ 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. favoring B - pleasant C - pleasing D - favourite.

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

Answer - B (C , D)

Henry is an **astronomer** (who studies the stars and planets) and his **favourite** thing is to look at the sky.

Question 10 : 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.

1. To save / began slipping
2. To save / beginning to slip
3. To save / begin to slip
4. For saving / began to slip

Answer -

Explanation -

Question 11: You are going to read a text about an artist. 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. Kahini held her first solo show in 1998, the entire proceeds of which went to the Helen Keller institute for the Deaf and Blind in Mumbai. _____ Encountering the pathless terrain of inner landscape, the artist engages in a restless re-examination of idea and image. _____ She has also taken part in several art camps.

1. In her fifth solo show with acrylic and oil-on-canvas paintings in the series titled 'Metamorphosis' held recently at the Mumbai's Jehangir Art Gallery. She showed for the first time her abstract work as well.
2. Her work has been acquired by corporate houses and also forms part of private collections.
3. She has participated in a group show along with 50 women artists to celebrate International Women's Day

1. A,C
2. C,B
3. B,A

Question

Question 13: 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 _____. Aisha got her team members together for a remote meeting. But right from that first meeting , she realized 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..... Archies and Luciaand when they didn't speak, there was an uncomfortable silence. Valentina hardly said a word. _____ Without these visual clues, Aisha had no idea whether people were
1. No one had their cameras on, so there was none of the usual communication through body language and facial expressions.
2. Compared to a face-to-face meeting the remote team is not preferred by all the managers
3. For a start, Archie was late for the meeting by about 15 minutes because of the 'technical problems'.
1. A , C
2. B , A
3. A , B
4. **C , A**

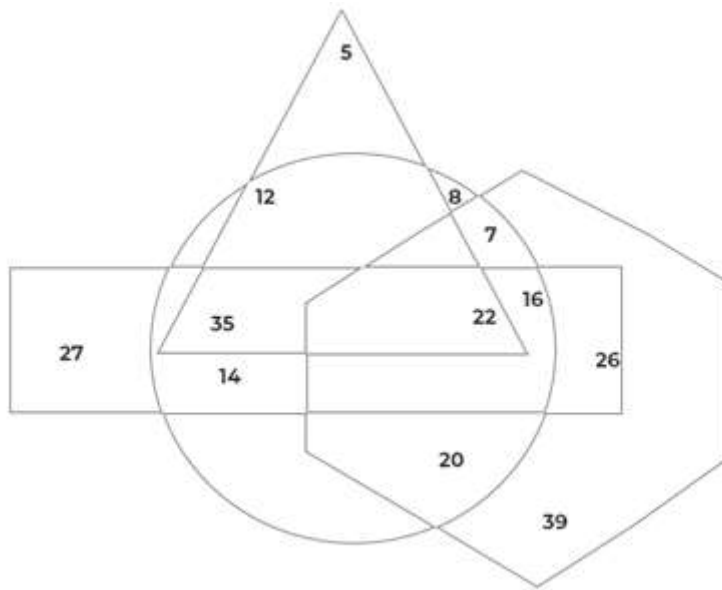
Answer - C, A

C starts with (for a start) hence this will be the beginning.

A talks about lack of visual clues which satisfies the sentence following the blank.

LOGICAL ABILITY

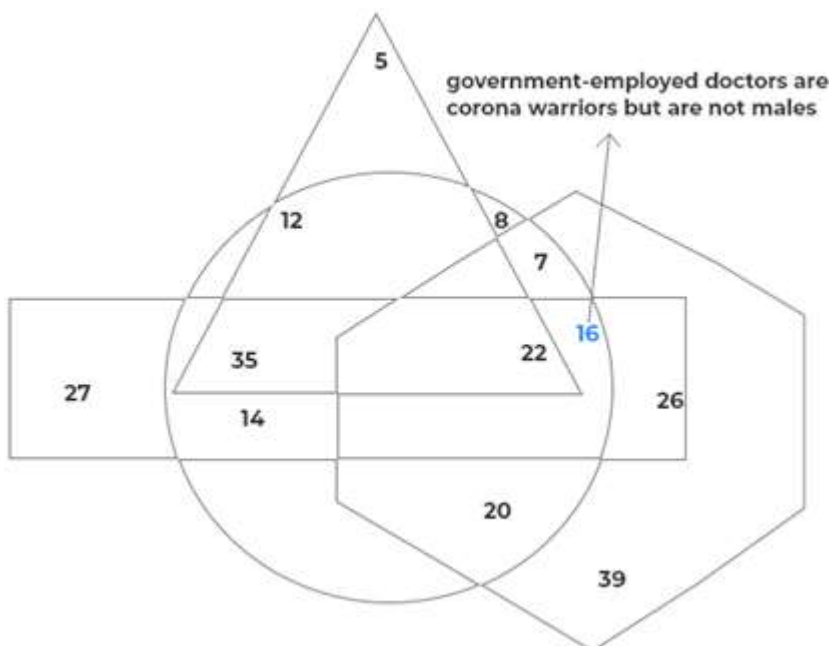
Question 1: In the following diagram, the triangle stands for "males", the circle stands for "doctors", the rectangle stands for "government employed", the hexagon stands for "corona warriors". The numbers in different segments show the number of persons for that segment.



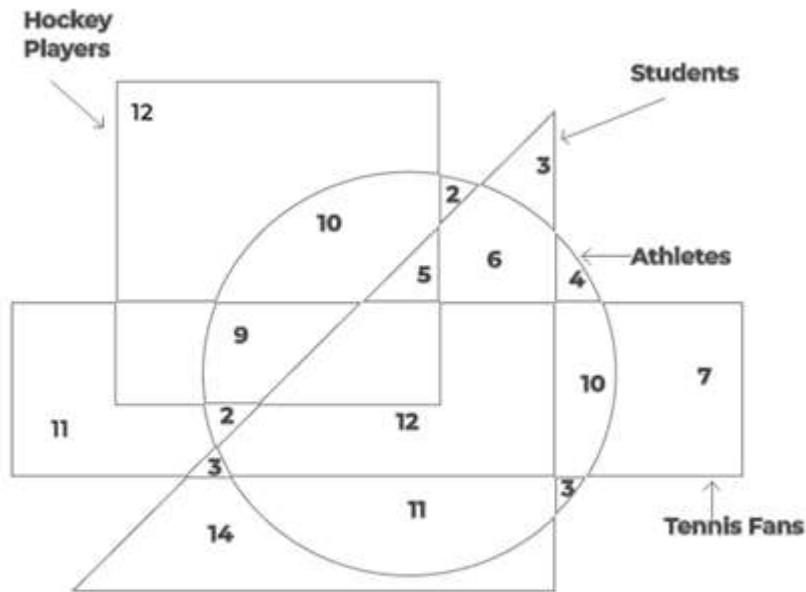
How many government-employed doctors are corona warriors but are not males?

1. 14
2. 23
3. 16
4. 17

Solution:



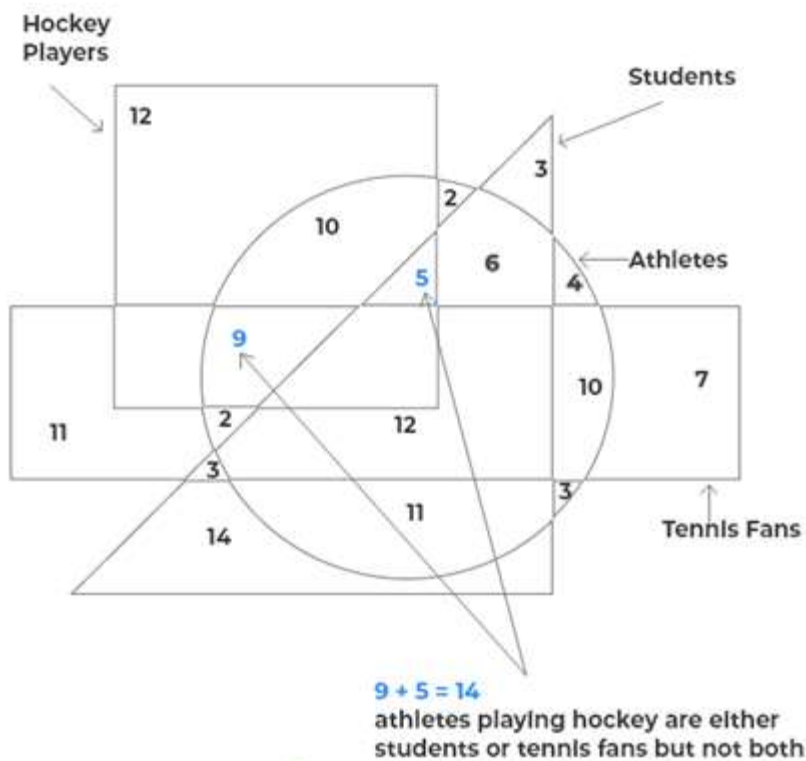
Question 2: In the following diagram, the rectangle stands for tennis fans, the circle stands for athletes, and the triangle stands for students, and the square stands for hockey players. The number in different segments show the number of persons.



How many athletes playing hockey are either students or tennis fans but not both

1. 18
2. 15
3. 14
4. 3

Solution:



Questions: 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, A#B means A is the sister of B.

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

1. Sister
2. Brother
3. Husband
4. Wife

K \$ Z = K is the father of Z (1)

Z % U = Z is the brother of U (2)

U & H = U is the mother of H (3)

H # N = H is the sister of N (4)

N @ T = N is the daughter of T (5)

From statement 3, 4, and 5

As U is the mother of H, H is the sister of N and N is the daughter of T complies that U and T are sisters

Questions: 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 Pune. D is not from Pune. C is from Indore. Which of the following statements is correct about B?

1. B is the lawyer and belongs to Chandigarh
2. B is Doctor and belongs to Pune
3. B is a doctor and belongs to Chandigarh
4. B is a lawyer and belongs to Pune

Solution:

- 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 Pune
- D is not from Pune
- C is from Indore

Question 2: The number of employees working in six different departments in two companies A and B are given below. Study the given data and answer the questions that follow.

Company A

Departement	No of Employees
Marketing	256
HR	72
Production	504
Accounts	68

Operations	256
Planning	46
Total	1202

Company B

Department	No of Employees
Marketing	524
HR	108
Production	736
Accounts	122
Operations	146
Planning	58
Total	1694

What is the percentage difference between the employees working in the production department of company A and B.

1. 3.21%
2. 2.27%
3. 1.52%
4. 1.15%

Solution:

Question-If both company A and B merge together to form company C, then what is the percentage of marketing and accounting employees in total employees of company C?

1. 33.49%
2. 37.59%

Question: Select the most appropriate option to fill in the blank.

The final report on the project was _____ into three parts.

1. Broken out
2. Broken off
3. Broken up
4. Broken away

Answer:

Question: A statement is followed by two assumptions numbered I and II. Consider the statement and decide which of the given assumption(s) is/are implicit in the statement.

Statement-

Various government across the world have issued strict guidelines for the public to wear masks and wash hands regularly to safeguard their health during covid-19 pandemic.

Assumptions-

1. Covid-19 Pandemic is serious health issue.
2. There are ways by which people can save themselves from Covid-19 pandemic.

Options-

1. Neither I nor II is implicit
2. Both I and II are implicit
3. Only II is implicit
4. Only I is implicit

Answer-Both I and II are implicit

Q3. What is the wrong number in the following series?

CMQ , FPT , JTX ,OYC , UFI

a.OYC

b.JTX

C.FPT

d.UFI

Solution:- UFI is the wrong number in the series.

Lets take CMQ

Difference between letter C and Letter M is 10 and difference between M and Q is 3
..same with OYC , JTX,FPT

But not with UFI

Question:- In a certain code , $K * N$ means K is the brother of N , $K + N$ means K is the husband of N, $K \times N$ means K is the mother of N and $K \div N$ means K is the sister of N , then which of the following expressions means C is the daughter of Y.?

1. $Y + R \times C * H \div V$
2. $Y + R \times H \div C * V$
3. $Y + R \times H * C \div V$
4. $Y \times R + H * C \div V$

Solution:-

Question:- 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.

How is A related to C?

Statements:-

1. A is the wife of B and B is the brother of C.
2. C is the son of D
1. Statement I alone is sufficient.
2. Statement II is sufficient.
3. Both I and II together are sufficient
4. Both I and II together are not sufficient.

Solution:- Both 1 and 2 together are not sufficient

PROGRAMMING LOGIC

Question 1- What will be the output

```
public class Main {  
    public static void main(String[] args)  
    {
```

```
int $ = 5;
}
}
```

1. Nothing will print
2. Symbol not found Error.
3. Runtime Error
4. Compile time error

Answer- 1.Nothing will print

Question 2-

```
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);
    }
}
```

What will be printed when the above sample code is executed.
Enter your answer ONLY as a NUMERAL, in the box.

Answer- -101233

Question 3- Which of the following options best suits for 'Memory Leak Occurred'

1. Resource allocation pending while debugging the code
2. Program releases resources allocated in the memory
3. Program does not free the memory which is allocated dynamically
4. Occurs due to address assignment failure.

Answer- Program does not free the memory which is allocated dynamically.

Question 4- What among the following is a server based paradigm

1. Request for Information(RFI)
2. Data Validation Routine
3. Cloud computing
4. Total cost of Ownership.

Answer- Request for information

Question 5- When we declare constant pointer to integer, we CANNOT change:

1. Value pointed by pointer
2. Either addressing pointer variable or value at that address
3. Changes are not permitted
4. Address in pointer variable.

Answer- Address in the pointer variable.

Question 6- 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 can he use to determine that location?

1. DFS
2. Dijkstra's
3. BFS
4. Topological Sorting

Answer- Dijkstra's

Question 7 - Find Prefix and Postfix for the below Infix problem statement:

1. Prefix Expression: $11\ 20\ 5\ 20\ 15 - 6\ 5\ \wedge\ * / +$
Postfix Expression: $+ 11 / 20 * 5 \wedge - 20\ 15\ 6\ 5$
2. Prefix Expression: $+ 11 / 20 * 5 \wedge - 20\ 15\ 6\ 5$
Postfix Expression: $11\ 20\ 5\ 20\ 15 - 6\ 5\ \wedge\ * / +$
3. Prefix Expression: $11\ 20\ 15\ 20\ 5 - \wedge\ * 6\ 5 / +$
Postfix Expression: $+ 20 / 11 * 5 - 20 \wedge 15\ 6\ 5$
4. Prefix Expression: $11\ 20\ 5\ 20\ 15 - \wedge\ * / + 6\ 5$
Postfix Expression: $+ 11 / \wedge - 20 * 5\ 20\ 15\ 6\ 5$

Question 8 - There are two integer numbers X and Y, and the value of X and Y is in between 0 to 25. User stores the value under 5 bit number. How many minimum bit is required to store the result of the below expression?

$\text{Res} = 3*(X-Y)$

1. 7
2. 5
3. 8
4. 6

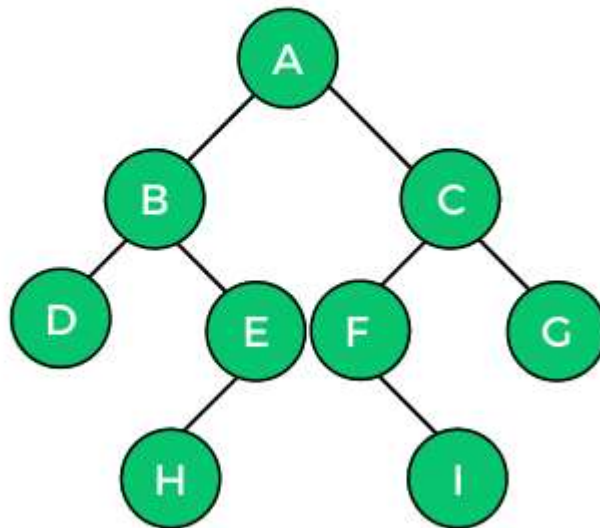
Answer-

Question 9- Write the name of library of functions which is used to perform arithmetic operations on BigInteger and BigDecimal

Answer- MathContext

This question in TCS NQT was wrong. Incorrect options were given

Question 10 - Consider the following tree what will be the preorder traversal.



1. A B C D E F G H I
2. D H E B I F G C A
3. H I D E F G B C A
4. D H E B A F I G C

Answer- ABDEHCFIG

CODING

There is a 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 $M \leq N$. Candies are served to the customers. JAR is never remain empty as when last k candies are left. JAR is refilled with new candies in such a way that JAR get full. Write a code to implement above scenario. Display JAR at counter with available number of candies. Input should be the number of candies one customer can order at point of time. Update the JAR after each 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 candies in JAR, return: "INVALID INPUT"

Given,

$N=10$, where N is NUMBER OF CANDIES AVAILABLE

$K \leq 5$, where k is number of minimum candies that must be inside JAR ever.

Example 1: ($N = 10$, $k \leq 5$)

Input Value

3

Output Value

NUMBER OF CANDIES SOLD : 3
NUMBER OF CANDIES AVAILABLE : 7

Example : (N=10, k<=5)

Input Value

0

Output

Value

INVALID INPUT

NUMBER OF CANDIES LEFT : 10

Solution in C

```
#include <stdio.h>
int main()
{
    int n=10, k=5;
    int num;
    scanf("%d",&num);
    if(num>=1 && num<=5)
    {
        printf("NUMBER OF CANDIES SOLD : %d\n",num);
        printf("NUMBER OF CANDIES LEFT : %d",n-num);
    }
    else
    {
        printf("INVALID INPUT\n");
        printf("NUMBER OF CANDIES LEFT : %d",n);
    }
    return 0;
}
```

Solution in C++

```
#include <iostream>
using namespace std;
int main()
{
    int n=10, k=5;
    int num;
    cin>>num;
    if(num>=1 && num<=5)
    {
        cout<<"NUMBER OF CANDIES SOLD : "<<num<<"\n";
        cout<<"NUMBER OF CANDIES LEFT : "<<n-num;
    }
    else
    {
        cout<<"INVALID INPUT\n";
        cout<<"NUMBER OF CANDIES LEFT : "<<n;
    }
    return 0;
}
```

Solution in Java

```
import java.util.Scanner;
class Main{
    public static void main(String[] args) {
        int n = 10, k = 5;
        int num;
        Scanner sc = new Scanner(System.in);
        num = sc.nextInt();
        if(num >= 1 && num <= 5) {
            System.out.println("NUMBER OF CANDIES SOLD : " + num);
            System.out.print("NUMBER OF CANDIES LEFT : " + (n - num));
        } else {
            System.out.println("INVALID INPUT");
            System.out.print("NUMBER OF CANDIES LEFT : " + n);
        }
    }
}
```

Selection of MPCSC exams include a fitness test which is conducted on ground. There will be a batch of 3 trainees, appearing for running test in track for 3 rounds. You need to record their oxygen level after every round. After trainee are finished with all rounds, calculate for each trainee his average oxygen level over the 3 rounds and select one with highest 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 trainees) 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 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

Output must be in given format as in above example. For any wrong input final output should display “INVALID INPUT”

Solution in C

```
#include <stdio.h>
```

```
int main()
```

```
{
```

```
    int trainee[3][3];
```

```
    int average[3] = {0};
```

```
    int i, j, max=0;
```

```
    for(i=0; i<3; i++)
```

```
    {
```

```
        for(j=0; j<3; j++)
```

```
        {
```

```
            scanf("%d", &trainee[i][j]);
```

```
            if(trainee[i][j]<1 || trainee[i][j]>100)
```

```
            {
```

```
                trainee[i][j] = 0;
```

```
            }
```

```
        }
```

```
    }
```

```
    for(i=0; i<3; i++)
```

```
    {
```

```
        for(j=0; j<3; j++)
```

```
        {
```

```
            average[i] = average[i] + trainee[j][i];
```

```
        }
```

```
        average[i] = average[i] / 3;
```

```
    }
```

```
    for(i=0; i<3; i++)
```

```
    {
```

```
        if(average[i]>max)
```

```
        {
```

```
            max = average[i];
```



```

    }
}
for(i=0; i<3; i++)
{
    if(average[i]==max)
    {
        printf("Trainee Number : %d\n",i+1);
    }
    if(average[i]<=70)
    {
        printf("Trainee is Unfit");
    }
}
return 0;
}

```

Solution in C++:

```

#include <iostream>
using namespace std;
int main()
{
    int trainee[3][3];
    int average[3] = {0};
    int i, j, max=0;
    for(i=0; i<3; i++)
    {
        for(j=0; j<3; j++)
        {
            cin>>trainee[i][j];
            if(trainee[i][j]<1 ||
trainee[i][j]>100)
            {
                trainee[i][j] = 0;
            }
        }
    }
    for(i=0; i<3; i++)
    {
        for(j=0; j<3; j++)
        {
            average[i] = average[i] +
trainee[j][i];
        }
        average[i] = average[i] / 3;
    }
}

```

```

    }
    for(i=0; i<3; i++)
    {
        if(average[i]>max)
        {
            max = average[i];
        }
    }
    for(i=0; i<3; i++)
    {
        if(average[i]==max)
        {
            cout<<"Trainee Number :
" << i+1 << "\n";
        }
        if(average[i]<=70)
        {
            cout<<"Trainee is Unfit";
        }
    }
    return 0;
}

```

Solution in Java:

```

import java.util.Scanner;
class Main {
    public static void main(String[] args) {
        int[][] trainee = new int[3][3];
        int[] average = new int[3];
        int max = 0;
        Scanner sc = new Scanner(System.in);
        for(int i = 0; i < 3; i++) {
            for(int j = 0; j < 3; j++) {
                trainee[i][j] = sc.nextInt();
                if(trainee[i][j] < 1 ||
trainee[i][j] > 100) {
                    trainee[i][j] = 0;
                }
            }
        }
        for(int i = 0; i < 3; i++) {
            for(int j = 0; j < 3; j++) {

```

```

                                average[i] = average[i] +
trainee[j][i];
                                }
                                average[i] = average[i] / 3;
                                }
                                for(int i = 0; i < 3; i++) {
                                    if(average[i] > max) {
                                        max = average[i];
                                    }
                                }
                                for(int i = 0; i < 3; i++) {
                                    if(average[i] == max) {
                                        System.out.println("Trainee
Number : " + (i + 1));
                                    }
                                    if(average[i] <= 70) {
                                        System.out.print("Trainee is
Unfit");
                                    }
                                }
                            }
                        }
                    }
                }
            }
        }
    }
}

```

SLOT 2:

NUMERICAL ABILITY

Q1. What is the fourth proportional of 0.006, 1.2 & 6/25 ?

- A. 36
- B. 48
- C. 4.8

D. 3

Answer: Option B

Q2. The present ages of three brothers are in the proportion 12:14:17. The difference between the ages of the elder and the eldest is 6 years. What will be the proportion of their ages after four years?

A. 14:16:19

B. 40:46:55

C. 16:18:21

D. 13:15:18

Answer: Option A

Q3. Two ants of length 1cm and 1.2 cm crawl in opposite directions with average speeds 2 and 1 mm per second respectively. How many seconds will they take to cross each other?

A. 4.4

B. 2.8

C. 0.4

D. 1.5

Answer: Option A

Q4. The index numbers of five commodities are 121,123,125,126,128 and the weights assigned to these are respectively 5,11,10,8,6. Then what is the weighted average index number?

A. 123.8

B. 124.2

C. 124.6

D. 125.2

Answer: Option C

Q5. Which one among the following has the least value?

A. $\sqrt{75} - \sqrt{74}$

B. $\sqrt{74} - \sqrt{73}$

C. $\sqrt{77} - \sqrt{76}$

D. $\sqrt{76} - \sqrt{75}$

Answer: Option C

Q6. The Range and the Standard Deviation of a data are R & S respectively. With the shift of origin of the data change(s) occur in the value(s) of:

A. Both R & S

B. Neither R nor S

C. R only

D. S only

Answer: Option B

Q7. A sum was lent to X for three years by an organisation who fixed a yearly rate of 10% compound Interest for repayment along with the condition of recovery in equal installments of Rs.31944. What percentage (correct to two decimal places) above the borrowed amount had X to pay the organization?

A. 18.43

B. 21.25

C. 16.52

D. 20.63

Answer: Option D

Q8. A retailer purchased 25 identical toys for a price Rs P and sold some of them for Rs P. If he calculated his profit as 8%, with selling price as base instead of cost price then how many did he sell?

- A. 24
- B. 20
- C. 21
- D. 23

Answer: Option D

Q9. The Table below presents the percentage marks obtained by three students A, Y, Z in the four components of assessment, A, B, C, D of a paper whose respective weightages are 4, 3, 2, 2, 1. Students/Marks A B C D X 78 85 72 76 Y 65 68 64 73 Z 82 76 81 75 What is the ratio of the average percentage of X in A, B to that of Y, Z combined in C, D?

- A. 324:283
- B. 326:293
- C. 28:25
- D. 81:73

Answer: Option D

Q10. A city water supply tank has two inlet pipes X and Y, which can fill it in 20 and 30 hours respectively, and an outlet pipe Z which can empty a full tank in 40 hours. If the tank is empty and the taps are opened in succession for one hour each, and the process continues, in how many hours will the tank get filled?

- A. $49 \frac{1}{4}$
- B. $51 \frac{3}{7}$
- C. $49 \frac{1}{2}$
- D. $49 \frac{1}{7}$

Answer: Option C

Q11. A sum of Rs.12500 is invested on 1st January 2016 at 4% simple interest p.a. How much interest in RS. gets accrued on the end of the day on 1st July 2016?

- A. 240
- B. 400
- C. 250
- D. 500

Answer: Option C

Q12. What is the real value of $(0.000314 + 0.000198)^{(1/3)}$?

- A. 0.04
- B. 0.08
- C. 0.8
- D. 0.4

Answer: Option B

Q13. What is the simplified value of $(10/15 \cdot 6)^{22/2/5} \text{ of } [(64 - 2 \cdot 8) + 2]^{-2/5}$?

- A. 6
- B. 4
- C. 5
- D. 2

Answer: Option B

Q14. A man who has to walk 11Km, finds that in 30 minutes he has travelled two-ninth of the remaining distance. What is his speed in Km/h?

- A. 4.8
- B. 4
- C 4.2
- D.4.5

Answer: Option B

Q15. Six square plots are connected end to end to obtain a rectangular plot area 726 m² . If we take, $\pi=22/7$, by what factor is the perimeter of this plot more than that of the circumference of a circle of radius 10m?

- A. 1.45
- B. 2.45
- C. 2.1
- D. 2.8

Answer: Option B

Q16. The mean and standard deviation of the data which is comprised of a set of ten positive numbers are 8 and 2 respectively. If the sum of squares of time along with ten numbers is 599.What is the tenth number?

- A. 7
- B. 8
- C. 9
- D. 11

Answer: Option C

Q17. With what value should the highest quantity in data 65,52,14,26,18,35,32,38 be replaced so that the mean and median become equal?

- A. 51
- B. 66
- C. 64
- D. 53

Answer: Option D

Q18. A work is assigned to 6 men and 12 women and they could complete it in 3 days. It was also observed that together they can do 7 times as much work a man and a woman can do.In how many days would 14 women have done the work?

- A. 10
- B. . 6
- C. 12
- D. 9

Answer: Option D

Q19. If the HCF of 180 and 432 is expressed as $(180m + 432n)$, where m and n are integers, then what is the difference between m and n?

- A. 3
- B. 7
- C. 9
- D. 8

Answer: Option B

Q20.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. $15\frac{1}{2}$
- D. $191\frac{1}{21}$

Answer: Option A

Q21. A sales representative's commission is 6% on all sales upto 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

Q22. The sales (in multiples of hundred) of three brands A, B, C of car from a showroom during four consecutive years, 2012 - 2015 have been presented through the Bar Graph given below. In which year is the sale of A and B together is 125% of that of C? TCS NQT 2020 | 24th Oct 1 pm to 4 pm Slot Analysis

- A. 2013
- B. 2014
- C. 2015
- D. 2012

Answer: Option D

Q23. The List Price of an item was kept 40% above what the shopkeeper had paid to the manufacturer. On selling the item a profit of 8.64% was earned after allowing two successive discounts, the first one of which was 20%. What was the percentage of the second discount?

- A. 3.25
- B. 3.6
- C. 3.84
- D. 3

Answer: Option D

Question . What is the fourth proportional of 0.006, 1.2 and $\frac{6}{25}$?

- A. 4.8
- B. 3.6
- C. 36
- D. 48

Solution:- Let the fourth proportional be 'x'.

So, $0.006 : 1.2 :: \frac{6}{25} : x$

When $a:b:c:d$ are in proportion then $\frac{a}{b} = \frac{c}{d}$

$$0.006/1.2 = \frac{6}{25} / x$$

$$x = 48$$

Option D

Question . A man who has to walk 11 km, finds that in 30 minutes he has travelled two-ninth of the remaining distance. What is his speed in km/hr?

- 1. 4.2
- 2. 4

3. 4.5

4. 4.8

Solution:- distance = 11km = $11 \times \frac{2}{9} = \frac{22}{9}$

Time = 30 min = $30/60 = \frac{1}{2}$ hr

$x = \text{distance} / \text{time}$

$x = \frac{22}{9} / \frac{1}{2}$

$x = \frac{44}{9}$

$x = 4.8$

Solution :- d

Question : Which one among the following has the least value?

A. $\sqrt{75} - \sqrt{74}$

B. $\sqrt{74} - \sqrt{73}$

C. $\sqrt{77} - \sqrt{76}$

D. $\sqrt{76} - \sqrt{75}$

Solution:

Squaring all we get the equation in the form of $(a^2 - b^2) = (a+b)(a-b)$

Applying formula we get

$(77+76)(77-76) = (153)(1) = 153$

$(75+74)(75-74) = (149)(1) = 149$

$(76+75)(76-75) = (151)(1) = 151$

$(74+73)(74-73) = (147)(1) = 147$

Hence 147 is least among all

Hence the required answer will be .

B. $\sqrt{74} - \sqrt{73}$

Question 4 : The least price of an item was kept 40% above what the shopkeeper had paid to the manufacturer. On selling the item a profit of 8.64% was earned after allowing two successive discounts, the first one of which was 20%. What was the percentage rate of second discount?

1. 3

2. 3.84

3. 3.25

4. 3.6

Question 5 : A hollow cylinder of radius 5cm takes six turns about its axis on a horizontal plane, and thereby covers a distance which is 6π times its length. What is the area of the curved surface (in cm^2) of the cylinder?

A. 100π

B. 120π

C. 80π

D. 50π

Question 6 : The Range and the standard deviation of a data are R & S respectively. With the shift of the origin of the data, change(s) occur in the value(s) of:

1. Both R & S

2. R only

3. Neither R nor S

4. S only

Solution: C. Neither R nor S

As a general rule, the median, mean, and quartiles will be changed by adding a constant to each value. However, the range, interquartile range, standard deviation and variance will remain the same

Question 7 :With what value should be highest quantity in the data

65,52,14,26,18,35,32,38 be replaced so that the mean and median become equal?

1. 66
2. 53
3. 64
4. 51

Questions:The index numbers of five commodities are 121,123,125,126,128 and the weight assigned to these are respectively 5,11,10,8,6.Then what is the weighted average index number?

1. 123.8
2. 125.2
3. 124.6
4. 124.2

Question: The present ages of three brothers are in the proportion 12:14 :17. The difference between the ages of elder and the eldest is 6 years. What will be the proportion of their ages after 4 years?

1. 40:46:55
2. 14:16:19
3. 42:41:15
4. 14:16:18

Answer : Option b

Explanation

14 - 17 = 3 parts = 6 years

= 1 part is 2 year

24, 28, 34 = present

28,32,38 = After 4 years

14:16:19

Question: A sum was lent to X for three years by an organization, who fixed a yearly rate of 10% compound interest for repayment along with the condition of recovery in equal annual installments of Rs. 31944. What percentage (correct to 2 decimal places) above the borrowed amount had X to pay to the organization?

1. 16.52
2. 18.43
3. 20.63
4. 21.25

Answer : Option d

Explanation

$$= 3 \left[\frac{\left(1 + \frac{10}{100}\right)^3}{1} + \frac{\left(1 + \frac{10}{100}\right)^2}{1} + \frac{\left(1 + \frac{10}{100}\right)}{1} \right]$$
$$b = 31944 \left[\frac{\left(1 + \frac{10}{100}\right)^3}{1} + \frac{\left(1 + \frac{10}{100}\right)^2}{1} + \frac{\left(1 + \frac{10}{100}\right)}{1} \right]$$

$$= 31944 \left[\frac{1000}{1331} + \frac{100}{121} + \frac{10}{11} \right]$$

$$= 31944[0.75 + 0.82 + 0.90]$$

$$= 31944[2.47]$$

$$P = 78901.68$$

$$\text{Interest} = 78901.68 - (3 \times 31944)$$

$$= 16930$$

$$\frac{16930}{78901} \times 100 = 21.4$$

Question: With what value should the highest quantity in the data : 65, 52, 14, 26, 18, 35, 32, 38 be replaced so that the mean and medium become equal?

1. 51
2. 53
3. 66
4. 64

Answer - Option b

Explanation

Let's sort the given data - 14, 18, 26, 32, 35, 38, 52, 65

mean = 35

$$\text{media} = \frac{32 + 35}{2} = 33.5$$

$$\text{Difference} = 35 - 33.5 = 1.5$$

$$\text{Value} = 1.5 \times 8 = 12$$

$$65 - 12 = 53$$

Question: The mean and the standard deviation of a data which is comprised of a set of ten positive numbers are 1 and 2 respectively. If the sum of squares of 9 among the 10 members is 599, what is the 10th number

1. 9
2. 8
3. 7
4. 11

Question: A work is assigned to 6 men and 12 women, they could complete it in 3 days. It was also observed that together they can do 7 times as much work a man and a woman can do. In how many days would 14 women have done the work?

1. 6
2. 12
3. 9
4. 10

Answer : Option C

Explanation

$$6m + 12w = 3 \text{ days}$$

$$\dots\dots(1)$$

$$6m + 12w = 7(m + w)$$

$$6m + 12w = 7m + 7w$$

$$6m + 12w = 6m + 1m + 7w$$

$$6m + 5w + 7w = 6m + 1m + 7w$$

$$1 \text{ man} = 5 \text{ woman}$$

$$30w + 12w = 3 \text{ days}$$

$$42w = 3 \text{ day}$$

42×3
4

$$14 \text{ women} =$$

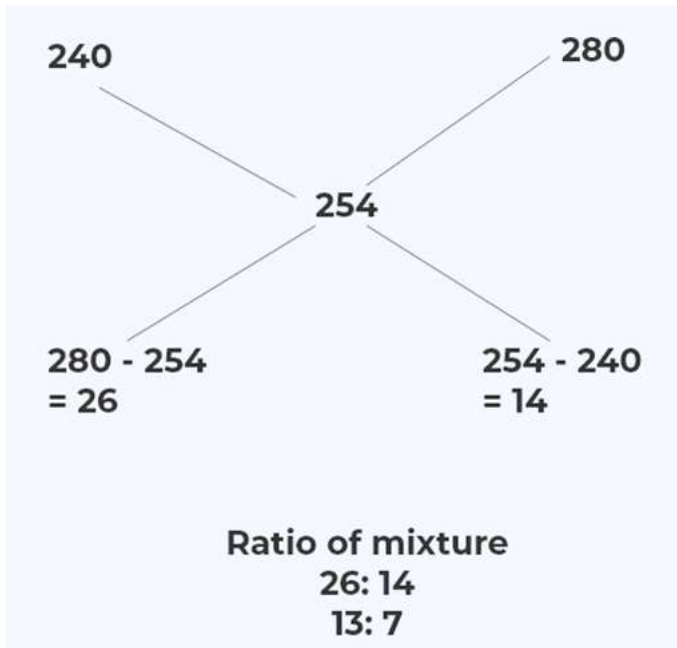
$$= 9 \text{ days}$$

In this question the options provided by TCS are wrong

Question: In what ratio should two varieties of tea priced at Rs. 240 and Rs 280 respectively. Be mixed so that the cost of the combination is Rs 254per kg?

1. 3: 2
2. 7: 6
3. 13: 12
4. 4: 3

Solution:



Hence the mixture will be in ratio 13: 7

Question: What is the real value of $(0.000314 + 0.000198)(1/3)$

1. 0.8
2. 0.08
3. 0.4
4. 0.04

Solution:

$$0.000314 + 0.000198 = 0.000512$$

$$(0.000512)1/3$$

$$(0.08)(3 * 1/3)$$

$$0.08$$

Question: The table below presents the percentage marks obtained by the three students X, Y, and Z in the four components of assessment A, B, C, D, of a paper whose respective weightages are 4, 3, 2, 1.

Students/Marks	A	B	C	D
X	78	85	72	76
Y	65	68	64	73
Z	82	76	81	75

What is the ratio of the average percentage of X in A, B to that of Y,Z combined in CD

1. 28: 25
2. 326: 293
3. 342: 283
4. 81:73

Solution:

Average Marks obtained by X in A and B = $(78 + 85)/2$

$$\frac{163}{2}$$

Average marks obtained by Y in C and D =

$$\frac{137}{2}$$

Average marks obtained by Z in C and D =

$$\frac{156}{2}$$

Average of X and Y combined

$$\frac{\frac{137}{2} + \frac{156}{2}}{2}$$

$$\frac{293}{4}$$

Ratio of X and Y, Z combined

X : (Y and Z)

$$\frac{163}{2} : \frac{293}{4}$$

326: 293

New Question:

Question: A city water supply tank has two inlet pipes X, and Y which can fill it in 20 hrs and 30 hrs respectively, and an outlet pipe Z which can empty a full tank in 40 hrs. If the tank is empty and the taps are opened in succession for one hour each, and the process contains, in how many hours will the tank get filled?

Solution:

1. $49\frac{1}{4}$
2. $51\frac{3}{7}$
3. $49\frac{1}{2}$
4. $49\frac{1}{7}$

Solution:

Question: Six square plots are connected end to end to obtain a rectangular plot of area 726 m². If we take $\pi = \frac{22}{7}$ by what factor is the perimeter of this plot more than that of circumference of a circle of radius 10 m?

1. 1.45
2. 2.8
3. 2.1
4. 2.45

Solution:

Area of Rectangle = 726m²

Rectangle is comprised of 6 square plots

$$A * A = 726/6 = 121$$

$$A = 11$$

Now length of the rectangle will be $6 * 11 = 66$ m

$$\text{Perimeter of rectangle} = 2(11 + 66) = 154$$

$$\text{Perimeter of circle of radius 10 m} = 2 \pi r = 2 * \frac{22}{7} * 10 = 440/7 = 62.85$$

$$\text{By factor the perimeter of Rectangular plot is more than circular plot} = 154/62.85 = 2.45$$

Question: A sum of Rs 12500 is invested on 1st January 2016 at 4% simple interest per annum. How much interest (in Rs) gets accrued on the end of the day on 1st July, 2016?

1. 250
2. 400
3. 500
4. 240

Solution:

$$SI = \frac{Prt}{100}$$

$$P = 12500$$

$$R = 4\%$$

$$t = 6 \text{ months} = 0.5 \text{ year}$$

$$SI = \frac{(12500 * 4 * 0.5)}{100}$$

$$SI = 125 * 2 = 250$$

Question: Two ants of length 1 cm and 1.2 cm. Crawl in opposite directions with an average speed of 2 and 3 mm per second respectively. How many seconds will they take to cross each other?

1. 2.8
2. 4.4
3. 0.4
4. 1.5

Solution:

Relative speed of ants = $2 + 3 \text{ mm/s} = 5 \text{ mm/s}$

Effective distance = $1 + 1.2 = 2.2 \text{ cm} = 22 \text{ mm}$

Time = distance/speed = $22/5 = 4.4$

Question

A retailer purchased 25 identical toys for a price Rs P and sold some of these for price Rs P. If he calculated his profit as 8% , with selling price as base instead of cost price then how many toys did he sell.

1. 20
2. 23
3. 21
4. 24

Question

In a competitive exam, 5 marks are awarded for every correct answer and for every wrong answer, 2 marks are deducted. Sathwik scores 32 marks in the examination. If 4 marks had 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 ?

1. 14
2. 12
3. 20
4. 26

Answer 12: 26 Answer

In given Question:-

Correct answer = $5x$ and wrong answer = $2y$

Correct answer = $4x$ and wrong answer = $1y$

So,

$$5x - 2y = 32$$

$$4x - 2y = 34 \text{-----} \times 2$$

Now

$$5x - 2y = 32$$

$$8x - 4y = 68$$

By solving

$$3x = 36$$

$$x = 12$$

Now to find 'y'

$$5 \times 12 - 2y = 32$$

$$60 - 2y = 32$$

$$y = 14$$

By adding $x + y$

$$12+24 = 26$$

Questions in the test = 26

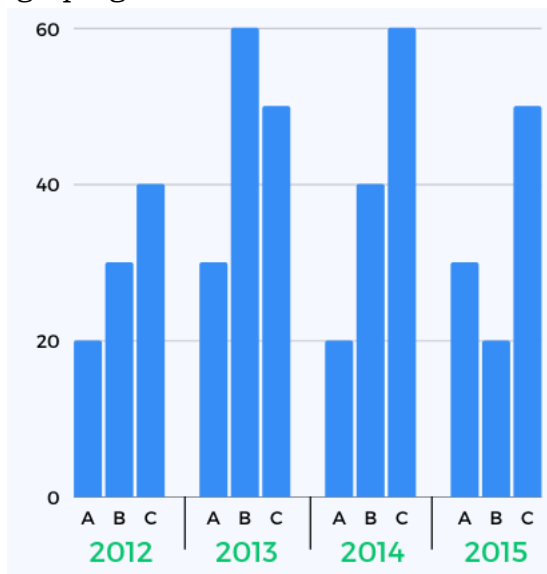
Question. The List price of an item was kept 40% above what the shopkeeper had paid to the manufacturer. On selling the item a profit of 8.64% was earned allowing two successive discounts, the first one which was 20% . What was the percentage rate of the second discount.

1. 3.84
2. 3.6
3. 3.25
4. 3

Question:- The index number of five commodities are 121, 123 ,125 , 126, 128 and the weights assigned to these are respectively 5, 11 ,10,8,6 . Then , what is the assigned weighted average index number?

- A.125.2
- B.124.2
- C.123.8
- D.124.6

Question - The sales(in multiples of hundred) of three brands A, B, C of car from a showroom during four consecutive years, 2012-2015 have been presented through the bar graph given below :



In which year is the sale of A and B together is 125% of that of C ?

1. 2015
2. 2014
3. 2013
4. 2012

Question:- A sales representative commission is 6% on all sales upto 15000 and 5% on all sales exceeding this. He remits Rs. 47350 to his company after deducting his commission. What were the total sales.

1. Rs 50000
2. Rs 49000
3. Rs 47500
4. Rs 50500

Solution: $47350 = x - 6\% \text{ of } 15000 - 5\% \text{ of } (x - 15000)$

$47350 = x - 900 - 5\% \text{ of } x - 5\% \text{ of } 15000$

$47350 + 900 - 750 = x - 5\% \text{ of } x$

$47500 = 95\% \text{ of } x$

$\Rightarrow x = 47500 \times 100/95$

$x = 50000$

Rs. 50000

Question:- What is the simplified value of

$(10 - 15 \times 6) [22 \div \frac{2}{5} \text{ of } [(64 - 2 \times 8)] + 2 - \frac{2}{5} ?$

1. 6
2. 4
3. 2
4. 5

Question:- If the HCF of 180 and 432 is expressed as $(180m + 432n)$, where m and n are integers, then what is the difference between m and n ?

- A. 7
- B. 3
- C. 8
- D. 9

Solution:-

Question:- 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 ?

1. $19\frac{1}{21}$
2. 15
3. $15\frac{1}{2}$
4. 16

VERBAL ABILITY

Q1. 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: Some of the earliest currencies were objects from nature

S-2:

S-3:

S-4: They were similar in size, small and durable

P. Although they may seem a pretty random choice the shells had a number of advantages

Q. A notable example is cowrie shells first used as money about 1200 BCE R. Counterfeiting dates to the invention of money.

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

D.PR

Answer: Option A

Q2. As it was his first job, Abhishek threw himself _____ it _____ a lot of enthusiasm. A. Into, with

B. At, with

C. Across, in

D. Over, from

Answer: Option A

Q3. Since sunrise to sunset my grandmother would sit by her wheel spinning and reciting prayers.

A. No error

B. My grandmother would sit by her wheel

C. Spinning and reciting prayers

D. Since sunrise to sunset

Answer: Option D

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: Eight months ago, it was business as usual at the cafe.

S-2:

S-3:

S-4: I checked the miniature circuit breaker and realized it had tripped:

P: Around six in the evening there was fluctuation and the lights went off.

Q: I pulled the miniature circuit breaker switch back and it was fine again.

R: The days were warm and so the air conditioners were in full force.

A. RP

B. QR

C. PQ

D. RQ

Answer: Option A

Q5. The Candidate _____ certificates the office could not verify were not permitted to appear before the interview board.

A. Whom

B. Whose

C. Who

D. Which

Answer: Option B

Q6 - Q8 Read the passage given below and answer questions. It's apparently humankind's fate never to stop writing the history of pandemics. No matter how often they occur—and they do occur with great frequency—we collectively refuse to think about them until circumstances demand it. Then, when the immediate crisis passes, we put it out of our minds as quickly as possible. And so we again are

unprepared when the next contagion—in this case, COVID-19—bursts upon us. Richard Conniff traces this alarming cycle in “How devastating pandemics change us,” this month’s cover story. It examines our long relationship with infectious diseases, from the hard lessons we’ve been forced to learn to the brave, and often difficult, characters who’ve risked their lives to save us. Smallpox taught us that we could prevent disease through inoculation and, as the 1700s ended, vaccination. By the mid-1800s, cholera’s lesson was about sanitation and the need for centralized water and sewer systems. About the same time, one man we’ve all heard of, Louis Pasteur, and one many of us haven’t, Robert Koch, became the co-fathers of germ theory. Tools they created are still used to identify and fight what Conniff calls “an astonishing rogues’ gallery of deadly pathogens.” And yet here we are, again, fighting on two fronts: the first, against a new coronavirus sweeping the planet to devastating effect; the second, with each other, over domestic and international politics and whether we’re willing to pay the price of prevention. It’s an important question for our planet. While we debate, the next pandemic draws nearer. Q6. Which statement is CORRECT according to the passage?

- A. Research about vaccines is not reliable
- B. All pandemics are not to be feared
- C. Pandemics keep occurring periodically
- D. There is no solution for a pandemic

Answer: Option C

Q7. In the fourth paragraph which pandemic is the author referring? A. An unknown one B. Small pox C. COVID-19 D. Cholera Answer: Option A Q8. What does the writer imply that we should do? A. Be vigilant about hygiene and health issues. B. Wear masks when we step out of our homes. C. Wash our hands and everything we touch carefully. D. Maintain social distancing and avoid public gatherings. Answer: Option A Q9. The part of the sentence below may contain a grammatical error. Identify the part. A high-end machine was inaugurate at the city’s Institute of Medical Sciences which will facilitate 3000 RT PCR tests for Coronavirus in a day.

- A. A high-end machine was inaugurate
- B. at the city’s Institute of Medical Sciences
- C. for Coronavirus in a day
- D. which will facilitate 3000 RT-PCR tests.

Answer: Option A

Q10. Select the most appropriate option to complete the sentence. It was _____ a new experience for me to attend a Zoom meeting so I planned for it _____.

- A. reasonably, basically
- B. quite, carefully
- C. really, terribly
- D. surely, gently

Answer: Option B

Q11. The following sentence pair can be combined into a single sentence. Choose the sentence that best combines the two sentences without changing the meaning.

Nikhil researched the topic well. He was able to do his Viva Voce well.

A. Nikhil researched the topic well unless he was able to do his Viva Voce well.

B. Nikhil was able to do his Viva Voce well despite he researched the topic well.

C. Nikhil researched the topic well therefore he was able to do his Viva Voce well.

D. Nikhil was able to do his Viva Voce well although he researched the topic well.

Answer: Option C

Q12. Which one of the following sentences uses formal language?

A. This presentation takes the cake!

B. Shall we put this on our agenda for the next client week?

C. I apologize for the technical glitch that occurred during our webinar yesterday.

D. I'm disappointed with the sales figures, they need to look up!

Answer: Option C

Question 1- One part of the sentence below may contain a grammatical error.

Identify the part that contains the error, if there is no error in the sentence choose

No Error

The college has circulated the examination schedule for its regular and supplementary examinations

A. the college has circulated the examination schedule

B. to be held next month

C.No error

D. for its regular and supplementary examinations

Answer: C

Question 2- Read the passage given below and answer questions

It's apparently the fate of humankind never to be free of writing the history of pandemics. No matter how often they occur----- and they do occur with great frequency----- we collectively refuse to think about them until circumstances demand it. Then, when the infection passes, we put it out of our minds as quickly as possible. And so we again are Unprepared when the next contagion----- and this causes COVID-19 bursts upon us. Richard conniff examines our long relationship with infectious disease----- from the hard lessons to us been forced to learn from the brave, and often difficult characters, who have asked their lives to save us. Forgive us for copying this whole content from prepinsta Smallpox taught us that we could prevent disease through inoculation and, as the 1700's ended, vaccination. By the new 1800's cholera's lesson was about sanitation and the need for centralized water and sewer systems. About the same time, one man was all heard of, Louis Pasteur, and one many of us haven't. Robert Koch, became the co- fathers of germ theory. Tools they created are still used to identify and fight with what Conniff calls " an astonishing rogues' ' gallery of deadly pathogens.

And yet here we are, again fighting on two fronts: the first against a new coronavirus sweeping the planet to devastating effects, the second, with each other, over domestic and international politics and whether we are willing to pay the price for prevention.

It's an important question for our planet. while we debate, the next pandemic draws nearer.

Which statement is correct according to the passage

1. pandemics keep coming periodically
2. all pandemic are not to be feared
3. there is no solution for pandemic
4. research about vaccines is not reliable.

Answer: Option A

Pandemics keep coming periodically

Question 3- Read the passage given below and answer questions

It's apparently the fate of humankind never to be free of writing the history of pandemics. No matter how often they occur----- and they do occur with great frequency----- we collectively refuse to think about them until circumstances demand it. Then, when the infection passes, we put it out of our minds as quickly as possible. And so we again are Unprepared when the next contagion----- and this causes COVID-19 bursts upon us. Richard conniff examines our long relationship with infectious disease----- from the hard lessons to us been forced to learn from the brave, and often difficult characters, who have asked their lives to save us.

Smallpox taught us that we could prevent disease through inoculation and, as the 1700's ended, vaccination. By the new 1800's cholera's lesson was about sanitation and the need for centralized water and sewer systems. About the same time, one man was all heard of, Louis Pasteur, and one many of us haven't. Robert Koch, became the co- fathers of germ theory. Tools they created are still used to identify and fight with what Conniff calls " an astonishing rogues' ' gallery of deadly pathogens.

And yet here we are, again fighting on two fronts: the first against a new coronavirus sweeping the planet to devastating effects, the second, with each other, over domestic and international politics and whether we are willing to pay the price for prevention.

it's an important question for our planet. while we debate, the next pandemic draws nearer. If you are reading this text, than please forgive us for copying this content from prep insta

In the third paragraph which pandemic is the author referring to-

1. an astonishing rogues
2. smallpox
3. covid-19
4. Cholera

Answer: Option C

COVID- 19

Question 4- For the four sentences 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.

S1: In today's marketplace the practice of innovation isn't just about creating new products.

S2 :

S3 :

S4 : There for the drive towards selecting and executing the right ideas and bringing them to market before your competitors take on an urgency that has been previously unknown

P: and in the age of internet comments the act of innovation becomes as an greater challenge “awash in a sea of new ideas”

Q: a perfect example can be seen in the process of mobile payment via smartphone

R. It is about discovering completely new markets that meets, previously unknown and therefore untapped customer needs

1. PR
2. RP
3. PQ
4. QR

Answer - RP

Question 5 : Select the most appropriate option to complete the sentence.

It was _____ a new experience for me to attend a zoom meeting so I planned for it_____.

1. surely gently
2. quite carefully
3. occasionally basically
4. None of the above

Answer: Option B

Question 6: For the four- sentence (S1 to S4) paragraph below, sentences S1 and S4 are given.

S1- Eight months ago, it was business as usual at the cafe.

S2-

S3-

S4- I checked the Miniature Circuit breaker and realized it has tripped.

P. Around six in the evening there was fluctuation and the lights went off.

Q. I pulled the Miniature Circuit breaker switch back and it was fine again.

R. The days were warm and so the air conditioners were in full force.

Answer: RP

Question 7: One part of the sentence below may contain a grammatical error. Identify the part.

A high-end machine was inaugurated at the city’s Institute of Medical Sciences which will facilitate 3000 RT-PCR tests for Coronavirus in a day.

1. At the city’s Institute of Medical Sciences.
2. For Coronavirus in a day
3. A high-end machine was inaugurated.
4. Which will facilitate 3000 RT-PCR tests.

Answer: D

Question 8: You are going to read a text about a scheme of the Government. 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.

Composed by Narayan Pandit, the Hitopadesha had its origin around a thousand years ago. In Indian Literature, the Hitopadesha is regarded as more or less similar to the Panchatantra. (1)_____ Hitopadesha tales are written in a reader-friendly

style, which perhaps contributed to the success of this best seller. Sorry to disturb you in between your question, but please forgive us to copy this content from prepinsta. (2)_____ Since, its origin Hitopadesha has been translated into numerous languages to benefit the readers all over the world.

1. It was next only after the 'Bhagwad Geeta' in popularity in India.
2. In the vein of Panchatantra, the Hitopadesha was also written in Sanskrit and followed the pattern of prose and verse.
3. The term 'Hitopadesha' is a combination of two terms, 'Hita' (welfare/benefit) and 'Upadesha' (advice/counsel).

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

Answer: C

Question 9- The following sentence pair can be combined into a single sentence. Choose the sentence that best combines the two:

Nikhil researched the topic as well. He was able to do his viva voce well.

1. Nikhil was able to do his Viva Voce well although he researched the topic well
2. Nikhil researched the topic well therefore he was able to do his Viva Voce well.
3. Nikhil researched the topic well unless he was able to do his Viva Voce well.
4. Nikhil was able to do his Viva Voce well despite he researched the topic well.

Answer - B

Question 10- One part of the sentence may contain an error. Identify the part. If there's no error, choose 'No Error.'

Since sunrise to sunset / my grandmother would sit by her wheel / spinning and reciting prayers.

1. spinning and reciting prayers.
2. No error
3. Since sunrise to sunset
4. my grandmother would sit by her whee

Answer - C. (from instead of Since)

Question 11: As it was his first job, Abhishek threw himself _____ it _____ a lot of enthusiasm

1. Across, in
2. Over, from
3. Into, with
4. At, with

Answer - At , With

Question 12: Since the early 1900s, many glaciers around the world have been rapidly melting _____. Specifically, since the industrial revolution, carbon dioxide and other greenhouse gas emissions have raised the temperatures, even higher in the poles _____. 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.

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

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

Answer - Option A (C , B)

Question 13: From hairdressers to waiters, many professionals have taken to wear face shields amid the coronavirus pandemic. But a new study has _____ that these plastic shields don't work, and can actually allow airborne coronavirus droplets to escape. Researchers from the Riken Centre in Japan, have performed a simulation using Fugaku - the world's fastest supercomputer. The simulation found that almost 100% of airborne droplets of less than 5 micrometers in size _____ through plastic visor, while 50% of larger droplets found their way into the air.

Blank 1 - A. told B. informed C. warned D. sneaked

Blank 2 - A. escaped B. discharged C. vanished D. seeped

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

Answer - C , A.

Question 14: Seham Amer is a kickboxing pioneer in Yemen. Often considered the first of her kind, Amer trains girls in martial arts. While Amer and her students are often discouraged from participating in the "masculine" sport, she continues to challenge _____ of what Yemeni women can do.

Amer told the Associated Press that her critics tell her "that the sport is masculine and that I have departed from feminine _____"

Blank 1 - A. designs B. contours C. shapes D. notions

Blank 2 - A. background B. territory C. situation D. experiment

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

Answer - D , B.

Question 15 : The Rajasthan Royals had spirit, and took the challenge of the highest-ever IPL run chase head on to soar above Kings XI Punjab. Sanju Samson scored a 42-ball 85 studded with seven sixes and four boundaries. Rajasthan Royals recorded the highest run chase in IPL history to beat Kings XI Punjab by four wickets in a high-scoring encounter in Sharjah on Sunday. Put into bat, Mayank Agarwal smashed a 50-ball 106, while skipper KL Rahul cracked a 54-ball 69 as the duo stitched a 183-run opening stand off 99 balls to power Punjab to an imposing 223 for 2. Sanju Samson then put on a lion-hearted effort with a 42-ball 85 studded with seven sixes and four boundaries, while Steve Smith scored a 27-

ball 50 to keep RR in the hunt. However, it was Rahul Tewatia, who turned hero when he smashed five sixes in the 18th over off Sheldon Cottrell to turn the match on its head. He scored a 31-ball 53 after struggling initially to take them to the brink of win.

In the passage, which expression means the same as create something through collective effort?

1. Smashed
2. Studded
3. Stitched
4. Cracked

Answer - Smashed

Question 16 : The Rajasthan Royals had spirit, and took the challenge of the highest-ever IPL run chase head on to soar above Kings XI Punjab. Sanju Samson scored a 42-ball 85 studded with seven sixes and four boundaries. Rajasthan Royals recorded the highest run chase in IPL history to beat Kings XI Punjab by four wickets in a high-scoring encounter in Sharjah on Sunday. Put into bat, Mayank Agarwal smashed a 50-ball 106, while skipper KL Rahul cracked a 54-ball 69 as the duo stitched a 183-run opening stand off 99 balls to power Punjab to an imposing 223 for 2. Sanju Samson then put on a lion-hearted effort with a 42-ball 85 studded with seven sixes and four boundaries, while Steve Smith scored a 27-ball 50 to keep RR in the hunt. However, it was Rahul Tewatia, who turned hero when he smashed five sixes in the 18th over off Sheldon Cottrell to turn the match on its head. He scored a 31-ball 53 after struggling initially to take them to the brink of win.

About whom does the writer use the expression that he made a 'lion-hearted' effort?

1. Sheldon Cottrell
2. Mayank Agarwal
3. Sanju Samson
4. Steve Smith

Answer - Sanju Samson (option C)

Question 17: The Rajasthan Royals had spirit, and took the challenge of the highest-ever IPL run chase head on to soar above Kings XI Punjab. Sanju Samson scored a 42-ball 85 studded with seven sixes and four boundaries. Rajasthan Royals recorded the highest run chase in IPL history to beat Kings XI Punjab by four wickets in a high-scoring encounter in Sharjah on Sunday. Put into bat, Mayank Agarwal smashed a 50-ball 106, while skipper KL Rahul cracked a 54-ball 69 as the duo stitched a 183-run opening stand off 99 balls to power Punjab to an imposing 223 for 2. Sanju Samson then put on a lion-hearted effort with a 42-ball 85 studded with seven sixes and four boundaries, while Steve Smith scored a 27-ball 50 to keep RR in the hunt. However, it was Rahul Tewatia, who turned hero when he smashed five sixes in the 18th over off Sheldon Cottrell to turn the match on its head. He scored a 31-ball 53 after struggling initially to take them to the brink of win.

How many runs did Mayank make?

1. 69
2. 85

3. 106

4. 53

Answer - 106 (option C)

REASONING ABILITY

Q1. Among 5 objects P,Q,R,S and T

- i. R is twice as heavy as T
- ii. S is one and half times as heavy as Q
- iii. Q and R together weigh as much as S and T together
- iv. P and S together are one and half time as heavy as Q and T together

Which among the five is the heaviest of all?

A. Q

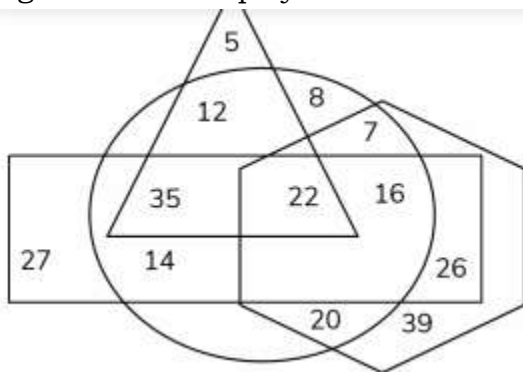
B. S

C. P

D. R

Answer: Option B

Q2.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 either corona warriors or males or both?



A. 22

B. 73

C. 35

D. 38

Answer: Option B

Q3. A statement followed by two assumptions numbered I and II. Consider the statement and decide which of the given assumptions is implicit in the statement.
Statement: Even though enough support is provided for potato production and its storage in cold stores,the state will continue to import from other countries

Assumptions:

- i. In Spite of the support the potato production and storage will not be able to meet the potatoes by the people in the store.

- ii. ii. The state is aware that the demand for potatoes by the consumers would rise substantially in the near future.

- B. Only ii is implicit
C. B. Both i and ii are implicit
D. C. Neither i nor ii is implicit
E. D. Only i is implicit

Answer: Option B

Q4. In a certain code, $M + N$ means M is the son of N, $M \times N$ means M is the brother of N; $M \div N$ means M is the husband of N and $M - N$ means M is the sister of N. If $T - P + Q \times R \div S$, then which of the following is true?

- A. P is the son of S
B. Q is the uncle of T
C. S is the sister of Q
D. S is the aunt of T

Answer: Option D

Q5. A team of four players are to be selected from among four girls A,B,C,D and four boys P,Q,R,S such that there would be at least two girls in the team and the team selection should meet the following conditions

- i. B cannot go with R
ii. D and P must go together
iii. S cannot be put up with A
iv. R and C must be together

- A. QBSC
B. DAPQ
C. RCQS
D. BPRA

Answer: Option B

Q6. Each of the five students, P,Q,R,S and T studies two subjects from the given subjects named History, Mathematics, English, Sanskrit, and Science. Each subject is studied by two students i. P studies Mathematics and Sanskrit

- ii. R studies History and Mathematics
iii. S and T both study English
iv. Q does not study science Who from the given option studies science?

- A. P
B. Q
C. R

D. S Answer: Option D

Q7. A statement is followed by three assumptions numbered I, II and III. Consider the statement and decide which of the given assumption(s) is/are implicit in the statement. Statement: Punishment of students in any form by teachers is banned in all schools to preserve the selfconfidences of students.

Assumptions: I. Punishment in a mild form is not a cognizable offence in out-of-school as it is a method for disciplining children.

II. Teachers taking recourse to punishing children will be held accountable for their actions.

III. Punishment might induce fear, negatively affecting students' level of confidence and learning

- A. Only III is implicit
- B. Only I and II are implicit
- C. Only II is implicit
- D. Only II and II are implicit

Answer: Option A

Q8. 1600 employees are working in a company in four departments: Accounts, HR, Production and Sales, 20% of the employees are in Accounts with a male-female ratio of 5:3. 640 are working in Production where the number of males is twice the number of males of the Accounts Department. The number of HR employees is half the number of employees in the Accounts department and 60 of them are females. The number of male employee in the Sales department is same as that of the Production department. How many female employees are working in the company?

- A. 600 B. 540 C. 400 D. 500

Answer: Option D

Q9. 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. How is Sheela exactly related to Ramesh? Statements

II. Mary's brother Vikash is married to Sheela and Ramesh's mother is the sister of Mary.

III. II. Sheela is the sister of Vikash and Vikash's only child is the cousin brother of Ramesh.

- A. Both the statements I and II are necessary
- B. Both the statements I and II together are not sufficient
- C. Statement II alone is sufficient
- D. Statement I alone is sufficient

Answer: Option D

PROGRAMMING LOGIC:

Q1. Which argument is passed to fflush()?

- A.no parameters
- B.stdin
- C.stdout
- D.stderr

Answer: Option B

Q2. What will be the output for the below? Enter your answer only as Numeral
`public Class Main { public static void main(String[]) { int x=1/2; if(x==0.5) System.out.println(x+1); else System.out.println(x*2); } }` Answer: 0

Q3. What is the name of the method that examines a particular data entity and determines what data elements need to be associated?

- A. Entity relationship diagram
- B. Logic Data modeling
- C. Customer Entities
- D. Functional Primitive

Answer: Option A

Q4. What will be the output of the below code?

```
public class Main { static int num=30;
static class inner
{
    void msg()
    {
        System.out.Println('Num: num++);
    }
}
public static void main(string args[])
{
    Main.Inner tw=new Main.Inner();
    tw.msg()
}
}
```

Answer: 30

Q5. Select the correct code for opening a file for writing in binary mode

- A. File*f =fwriteb("abc.bin")
- B. File*f = fopen("abc.bin","bw")
- C. File*f = fopen("abc.bin","wb")
- D. File*f =fwrite("abc.bin","b")

Answer: Option C

Q6. What will be the output of the below code?

```
import java.util.ArrayList;
import java.util.Collections;
import java.util.Iterator;
class MainClass
{
    public void sort()
    {
        ArrayList arrayList= new ArrayList();
        arrayList.add("mango");
        arrayList.add("grapes");
        Iterator iterator = arrayList.iterator();
        while(iterator.hasNext())
        { System.out.print(iterator.next() +" ");
        }
        Collections.sort(arrayList);
    }
}
```

```

}
public class Main { public static void main(String[] args)
{
MainClass mainclass = new MainClass();
mainclass.sort();
}
}

```

- A. mango grapes
- B. Compilation error
- C. Collection.sort() throws Concurrent Modification Exception
- D. Grapes mango

Answer: Option A

Q7. What is the name of the method that examines a particular data entity and determines what data elements need to be associated with it?

- A. Customer Entities
- B. Entity Relationship Diagram
- C. Logic Data Modelling
- D. Functional Primitive

Answer: Option B

Q8. We cannot overload _____ operator

- A. ::
- B. []
- C. ()
- D. +

Answer: Option A

Q9. Which of the following functions is used to accept strings with white spaces?

- A. getWhiteSpaceString();
- B. scanf();
- C. gets();
- D. getstrings();

Answer: Option C

Q10. Which data structure is used to convert expression from one form to another form? A. Graph

- B. Stack
- C. LinkedList
- D. Queue

Answer: Option B

Q11. What is the mathematical function used to round off 6.23 to 7?

- A. floor(6.23)
- B. ceil(6.23,7)
- C. floor(6.23,7)
- D. ceil(6.23)

Answer: Option D

Q12. Which combination of the integer variables a, b and c makes the variable m get the value 4 in the following expression? $m = (a > b) ? ((a > c) ? a : c) : ((b > c) ? b : c)$

A. a=6, b=3, c=5

B. a=6, b=5, c=3

C. a=5, b=4, c=5

D. a=3, b=4, c=2

Answer: Option D

Q13. Which of the following options best suits for 'Memory Leak Occurred'

A. Resource allocation pending while debugging the code

B. Program releases resources allocated in the memory

C. Program does not free the memory which is allocated dynamically

D. Occurs due to address assignment failure.

Answer- Option C

CODING:

Q1. WASHING MACHINE A Washing Machine works on the principle of a Fuzzy system, the weight of clothes put inside it for wash is uncertain. But based on weight measured by sensors, it decides time and water levels which can be changed by menus given on the machine control area. For low Water level, time estimate is 25 minutes, where approximate weight is 2000 grams or any non-zero positive number below that.

For Medium Water level, time estimated is 35minutes, where approximate weight is between 2001 grams and 4000 grams. For High Water level, time estimated is 45 Minutes, where approximate weight is above 4000 grams. Assume the Capacity of the Machine is maximum 7000 grams. Where the approximate weight is zero, the time estimate is 0 minutes. Write a function which takes numeric weight in the range [0,7000] as input and produces estimated time as output; if input is more than 7000, then output is: "OVERLOADED!", and for all other inputs, the output statement is "INVALID INPUT".

Input should be in the form of integer value –

<integer>

Output must have the following format - TimeEstimated: Minutes TCS

Example 1

Input Value

2000

Output Value

Time Estimated: 25 Minutes

```

1 #include<iostream>
2 using namespace std;
3 int main()
4 {
5     int weight;
6     cin >> weight;
7     if(weight < 0)
8         cout << "INVALID INPUT";
9     else if(weight == 0)
10        cout<<"Time Estimated : 0 Minutes";
11     else if(weight > 0 && weight <= 2000)
12        cout << "Time Estimated : 25 Minutes";
13     else if(weight >= 2001 && weight <= 4000)
14        cout << "Time Estimated : 35 Minutes";
15     else if(weight >= 4001 && weight <= 7000)
16        cout << "Time Estimated : 45 Minutes";
17     else
18        cout << "OVERLOADED!";
19     return 0;
20 }

```

Q2. Caesar Cipher The Caesar cipher is a type of substitution cipher in which each alphabet in the plaintext or message is shifted by a number of places down the alphabet.

For example, with a shift of 1, P would be replaced by Q, Q would become R, and so on.

To pass an encrypted message from one person to another, it is first necessary that both parties have the 'key' for the cipher, so that the sender may encrypt it and the receiver may decrypt it.

the key is the number of OFFSETs to shift the cipher alphabet. Key can have basic shifts from 1 to 25 positions as there are 26 total alphabets.

As we are designing custom Caesar Cipher, in addition to alphabets, we are considering numeric digits from 0 to 9. Digits can also be shifted by key places.

For example, if given plain text contains any digit with value 5 and key = 2, then 5 will be replaced by 7. "-" (Minus sign) will remain as it is. Key value less than 0 should result into "INVALID INPUT"

Example 1:

Input:

Enter your PlainText: All the Best

Enter the Key: 1

Output:

The encrypted Text is: Bmm uif Cftu

Write a function customCaesarCipher(int key, String message) which will accept plaintext and key as input parameters and returns its cipher text as output.

```

1 #include<stdio.h>
2 void customCaesarCipher(int key,char str[]);
3 int main()
4 {
5     int key;
6     char str[100];
7     scanf("%[^\n]s",str);
8     scanf("%d",&key);
9     customCaesarCipher(key,str);
10    return 0;
11 }

```

```

12 void customCaesarCipher(int key,char str[])
13 {
14     int n=0,i=0;
15     for(n=0;str[n]!='\0';n++);
16     if(key<0){
17         printf("INVALID INPUT");
18         return;
19     }
20     else{
21         for(i=0;i<n;i++){
22             if(str[i]!=' '){
23                 if(str[i]>=65 && str[i]<=90){
24                     if((int)(str[i]+key)<=90)
25                         str[i] = (int) (str[i]+key);
26                     else
27                         str[i] = (int)(str[i]+key-90+65-1);
28                 }
29                 else if(str[i]>=97 && str[i]<=122){
30                     if((int)(str[i]+key)<=122)
31                         str[i] = (int) (str[i]+key);
32                     else
33                         str[i] = (int)(str[i]+key-122+97-1);
34                 }
35                 else if((str[i]>=48 && str[i]<=57)){
36                     if((int)(str[i]+key)<=57)
37                         str[i] = (int)(str[i]+key);
38                     else
39                         str[i] = (int)(str[i]+key-57+48-1);
40                 }
41             }
42         }
43         printf("%s",str);
44     }
45 }

```

SLOT 3:

NUMERICAL ABILITY

Note: Options provided for this question are wrong

Question 1: In case of frequency distribution of ten continuous classes, the class width is 4 and the lower class limit of the lowest class is 8. What is the upper class limit for the highest class?

1. S only
2. R only
3. Both R and S
4. Neither R nor S

Solution :

Let x and y be the upper and lower class limit of frequency distribution.

Given, width of the class =4

$$\Rightarrow x - y = 4$$

.....(i)

Also, given lower class (y)=8

On putting y =8 in Eq. (i), we get

$$X - 8 = 4 \Rightarrow x = 12$$

So, the upper class limit of the lowest class is 12.

Hence, the upper limit of the highest class

= (Number of continuous classes x Class width + Lower class limit of the lowest class)

$$= 10 \times 4 + 8 = 40 + 8 = 48$$

Hence, the upper class limit of the highest class is 48.

Note: Options provided for this question are wrong

Question 2: What is the simplified value of

$$\frac{1.728 + 1}{1.24} + \frac{1 - 0.343}{2.19}$$

1. 0.04
2. 0.08
3. 0.4
4. 0.8

Solution:

$$\frac{1.728 + 1}{1.24} + \frac{1 - 0.343}{2.19}$$
$$\frac{2.728}{1.24} + \frac{0.657}{2.19}$$

$$2.2 + 0.3 = 2.5$$

Question 3: A leak in the body of a ship which can admit 5 units of water in 16 minutes got detected when it was 40 km away from the shore. Entry of 60 units of water will cause the ship to sink which has a pump that can throw out 12 units of water in an hour. Aided by the pump, what should be the average speed (in Km/h) of the ship in order to reach the shore just before it starts sinking?

1. 4
2. 4.2
3. 4.5
4. 4.8

Note: Options provided for this question are wrong

Question 4: What is the fourth proportional of the mean proportionals between (4, 6.25): (0.0027, 300) :: (1.2 x 10⁻³, 3) : ?

1. 3.6
2. 48
3. 4.8
4. 36

Solution:

$$(4, 6.25) = a$$

$$(0.0027, 300) = b$$

$$(1.2 \times 10^{-3}, 3) = c$$

$$? = d$$

$$a : b :: c : d$$

Mean Proportional of a = $\sqrt{4 \times 6.25} = 5$

Mean Proportional of b = $\sqrt{0.0027 \times 300} = 0.9$

Mean Proportional of c = $\sqrt{1.2 \times 10^{-3} \times 3} = 0.06$

$a/b = c/d$

$$\frac{5}{0.9} = \frac{0.06}{d}$$
$$d = \frac{0.06 \times 0.9}{5}$$

D = 0.0108

Question 5: Instead of calculating the sum of a proper fraction, less than $1/2$, with its reciprocal, the difference was worked out, as a result of which there was an error of $121(39/41)\%$. What was the fraction?

1. 17.5
2. 14.5
3. 16
4. 19

Answer:

Question 6: A retailer purchases several pens of the same cost for Rs 384 and then sells some of them for Rs 114 at no loss or gain. What is the least possible number of pens that he will be left with?

1. 7
2. 3
3. 9
4. 8

Solution:-

Question 7: A sales representative commission is 6% on all sales up to Rs 15,000 and 5% on all the sales exceeding this. He remits Rs 47,350 to his company after deducting his commission. What was the total sale?

1. 49000
2. 50500
3. 50000
4. 47500

Solution:

$$47350 = x - 6\% \text{ of } 15000 - 5\% \text{ of } (x - 15000)$$

$$47350 = x - 900 - 5\% \text{ of } x - 5\% \text{ of } 15000$$

$$47350 + 900 - 750 = x - 5\% \text{ of } x$$

$$47500 = 95\% \text{ of } x$$

$$\Rightarrow x = 47500 \times 100/95$$

$$x = 50000$$

Rs. 50000

Note: Options provided for this question are wrong

Question 8: The area of the sector with central angle 150° , of a circle is 231 sq cm . If $\pi = 22/7$, what is the circumference (in cm) of the circle?

1. 2.8
2. 2.45
3. 2.1
4. 1.45

Solution:

Area of Sector = πr^2 (Sector Angle/360) = 231

$$22/7 * r^2 * (15/360) = 231$$

$$22/7 * r^2 * (1/26) = 231$$

$$r^2 = ((231 * 24 * 7)/22)$$

$$r^2 = 21 * 12 * 7$$

$$r^2 = 1764$$

$$r = 42$$

Circumference of circle = $2\pi r$

$$2 * 22/7 * 42$$

$$= 22 * 12$$

$$= 264 \text{ cm}$$

Question 9: In a competitive exam, 5 marks are awarded for every correct answer and for every wrong answer, 2 marks are deducted. Sathwik scores 32 marks in the examination. If 4 marks had 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 ?

1. 14
2. 12
3. 20
4. 26

Answer: 26 Answer

In given Question:-

Correct answer = $5x$ and wrong answer = $2y$

Correct answer = $4x$ and wrong answer = $1y$

So,

$$5x - 2y = 32$$

$$4x - 2y = 34 \text{-----} * 2$$

Now

$$5x - 2y = 32$$

$$8x - 4y = 68$$

By solving

$$3x = 36$$

$$x = 12$$

Now to find 'y'

$$5 * 12 - 2y = 32$$

$$60 - 2y = 32$$

$$y = 14$$

By adding $x + y$

$$12 + 14 = 26$$

Questions in the test = 26

Note: Options provided for this question are wrong

Question 10: A takes 10 days less than B to complete a work, and together they do it in 12 days. In how many days can B alone do the work?

1. 12
2. 10
3. 9

4. 6

Solution:- Let B do the work independently in x no.s of days then

A.T.Q.

A will take (x - 10) no.s of day

Then in a unit day

A works $1/x$ part of work and B works $1/(x-10)$ part of work, as they both complete it in 12 days then

$$1/x + 1/(x-10) = 1/12 \text{ (portion of work in a day)}$$

$$x(x-10)/2x-10 = 12$$

$$x^2 - 10x = 24x + 120$$

$$(x-30)(x-4)$$

Possible value is $x=30$

Hence B will do the work in 30 days

Question 11: A sum invested in compound interest (CI) at a certain rate for 3 years earns the same interest as it would earn by the way of an investment in Simple Interest (SI) at the rate of 18.2% for four years. How much more or less in the percentage rate in case of the CI than that in case of the SI?

1. 16.52
2. 20.63
3. 18.43
4. 21.25

Question 12: What is the simplified value of

$$\left(2\frac{3}{4} + 2\frac{1}{2} \text{ of } \frac{5}{2\frac{5}{7}} - \frac{1\frac{2}{3}}{2\frac{1}{2}}\right) \div \left(5\frac{1}{12} \times \frac{5}{19}\right)?$$

1. 6
2. 4
3. 2
4. 5

Solution:

$$\left(2\frac{3}{4} + 2\frac{1}{2} \text{ of } \frac{5}{2\frac{5}{7}} - \frac{1\frac{2}{3}}{2\frac{1}{2}}\right) \div \left(5\frac{1}{12} \times \frac{5}{19}\right)$$

$$\left(\frac{11}{4} + \frac{5}{2} \times \frac{35}{19} - \frac{2}{3}\right) \div \left(\frac{61}{12} \times \frac{5}{19}\right)$$

$$\left(\frac{11}{4} + \frac{175}{38} - \frac{2}{3}\right) \div \left(\frac{61 \times 5}{12 \times 19}\right)$$

$$\left(\frac{627 + 1050 - 152}{19 \times 4 \times 3}\right) \div \left(\frac{61 \times 5}{12 \times 19}\right)$$

$$\left(\frac{1525}{19 \times 4 \times 3}\right) \times \left(\frac{12 \times 19}{61 \times 5}\right)$$

$$=5$$

Note: Options provided for this question are wrong

Question 13: The total surface area of a solid hemisphere is 75 times the area of a circle whose diameter is 6 cm. What is the radius (in cm) of the hemisphere?

1. 120π
2. 100π
3. 80π
4. 50π

$$\text{Solution :- area of circle} = \pi r^2 = \pi \times 32$$

$$=9\pi$$

Total surface area of hemisphere = $75 \times 9\pi$

Now, $3\pi r^2 = 75 \times 9\pi$

$= r^2 = 75 \times 3 = 225$

$r = 15 \text{ cm}$

Note: Options provided for this question are wrong

Question 14: $(0.0163 + 0.001)$ lies between?

1. $\sqrt{77} - \sqrt{76}$

2. $\sqrt{75} - \sqrt{74}$

3. $\sqrt{76} - \sqrt{75}$

4. $\sqrt{74} - \sqrt{73}$

Answer 14: $0.0163 + 0.001$

$= 0.00163163163 + 0.00111111111 = 0.0174274274$

$= 0.01742$

Which is not lying in between any of the options.

Question 15:- 10 men can complete a work in 8 days and 10 women take 12 days to complete the same work. How many days will 3 men and 6 women take to complete the same work?

a. $9\frac{3}{7}$

b. $10\frac{3}{7}$

c. $11\frac{3}{7}$

d. $12\frac{3}{7}$

Solution:- 1 men 1 day's work = $1/80$

1 men 1 day's work = $1/120$

(3 men + 6 women)'s day's work = $(1/80 + 1/120) = 7/80$

5 men and 10 women will complete the work in $80/7$ days. = $11\frac{3}{7}$ days

Option C answer

Question 16:- The ratio of the average speeds of two sprinters is 8:7. In a racing track if B starts at a distance of 2m ahead of A. At what distance (in metre) from the starting point of B would A catch up with B?

1. 4.4

2. 0.4

3. 2.8

4. 1.5

Question 17:- Raju lends Rs 3000 to Bharath and a certain sum to Charan at the same time of 6% per annum simple interest. If after 5 years, Raju altogether

receives Rs 1650 as interest from Bharath and Charan, What is the sum lent to charan ?

1. Rs 2500
2. Rs 3300
3. Rs 2750
4. Rs 3250

Answer 17: For Bharath and Charan 6% for 5 year = 30% for each

30% for 3000 = 900

=> total interest - 900 = Charan

1650 - 900 = 30% of x (given to Charan)

30% of x = 750

X = Rs 2500 (option a is correct)

Question 18:- With Symbols having their usual meaning the mean of the data given is 39.2

x 36 40 35 44

f 10 13 12

What is the missing frequency?

- A.124.6
- B.125.2
- C.123.8
- D.124.2

Question 19:- What is the difference between the Range and the Standard Deviation of all natural numbers between 81 and 90 , both inclusive?

1. 7
2. 11
3. 8
4. 9

Question 20:- The table below presents the data of atmospheric pressure (in mm of mercury) at a place at four different times of the day during four days P, Q,R,S,A steady rise in atmospheric pressure indicates a fair weather. On which of the given days was the weather fair ?

Time/Day	A	B	C	D
0600	742	765	754	761
1000	778	767	755	770
1400	762	745	757	775
1800	760	756	758	774
2200	768	752	760	762

1. 324.283
2. 81.73
3. 326.293
4. 28.25

Question 21: The value of 1 gm gold is 90 times that of 1 gm silver. If the weights of equal volumes of silver and gold are in the ratio 10:19, what is the value of a bar of silver that is equal in bulk to a bar of gold of value Rs 99180.

1. 14: 16: 19

2. 13: 15: 18
3. 16: 18: 21
4. 40: 46: 55

Question 22: When the list price (L.P) of an article is fixed at 30% above the cost price (C.P), and while selling the same it is subject to a discount of $x\%$, the profit percentage is 80% of that when the L.P is fixed at 25% above the C.P and the discount is 16%. What is the value of x ?

1. 3.25
2. 3.6
3. 3
4. 3.84

Question 23: A shopkeeper calculated his profit as 12% with the selling price of an article as the base. What would have been his actual profit percentage if the selling price was 20% more?

1. 21
2. 20
3. 23
4. 24

Solution:- Assume the cost price was 100

Then after 12% profit the selling price would have been $=100+12 = 112$

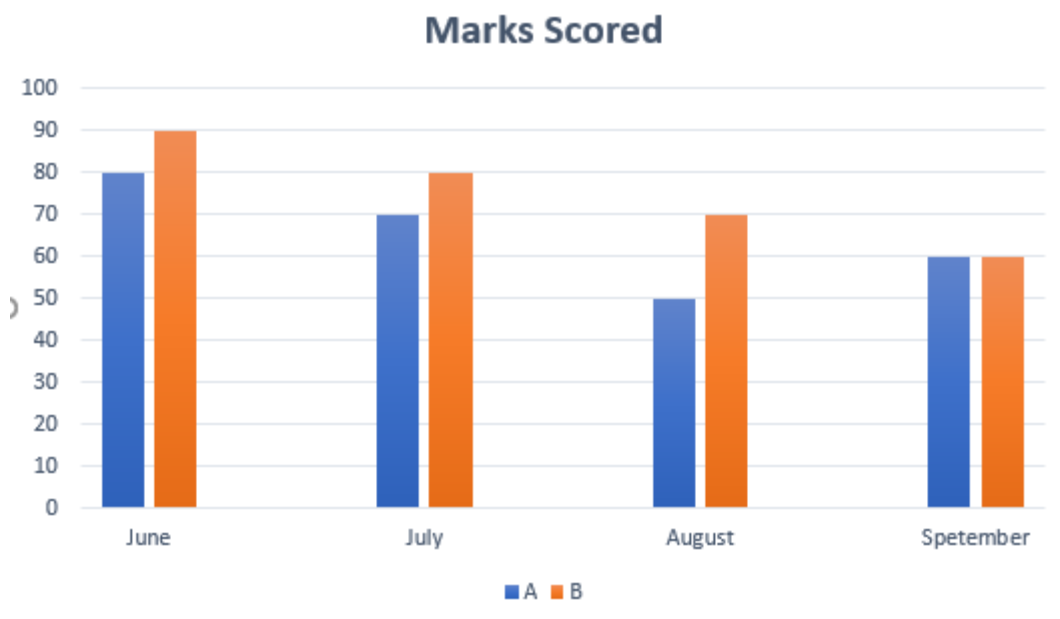
Now,

Profit at 20% would be $= 112 \times 20 / 100 = 22.5$

So answer is option C

Note: Graph and Options provided for this question are wrong

Question 24: The percentage marks scored by two students A and B at four consecutive monthly tests are depicted in the Bar Graph below. In which month is the percentage marks scored by B 40% more than that by A.



1. 2015
2. 2013
3. 2014
4. 2012

Note: Options provided for this question are wrong

Question 25: The sum of the ages of two friends is 74. After one year the ratio of their ages will be 9:10. What was the ratio of their ages nine years ago?

1. 7:6
2. 3:2
3. 4:3
4. 13:12

Answer 25:- $x + y = 74$

$$X + 1 / Y + 1 = 9 / 10$$

$$10x + 10 = 9y + 9$$

$$10x = 9y + 9 - 10$$

$$10x = 9y - 1$$

$$X = 9y - 1 / 10$$

Now putting value of x in equation 1

$$(9y - 1 / 10) + y = 74$$

$$9y - 1 + 10y = 740$$

$$19y = 741$$

$$y = 741 / 19 = 39$$

$$\text{And } x = 74 - y$$

$$= 74 - 39 = 35$$

$$\text{Ratio of ages nine years ago} = 35 - 9 / 39 - 9$$

$$= 26 / 30$$

$$= 13 : 15$$

Question 26: A city water supply tank has two inlet pipes X and Y, which can fill it in 20 and 30 hours respectively and an outlet pipe Z which can empty a full in 40 hours. If the tank is empty and the taps are opened in succession for one hour each, and the process continues in how many hours the tank gets filled?

1. $49\frac{1}{7}$
2. $49\frac{1}{2}$
3. $51\frac{3}{7}$
4. $49\frac{1}{4}$

VERBAL ABILITY

Question 1: Select the most appropriate option to fill in the blank.

The exotic remedies for some illness have been _____ from generation to generation.

- A- handed in
- B- handed down
- C- handed over
- D- handed out

Answer - Handed down

Handing down means passing on the legacy.

Question 2: Select the most appropriate option to complete the sentence.

While MSME's are waiting ____ the release ____ around Rs. five lakh crore pending payments, no major relief has come their way so far.

A- to, with

B- of, at

C- for, of

D- from, on

Answer- C

For the release, of around.

Question 3: You are going to read a text about fighting pollution. 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.

A team of scientists at the University of Portsmouth of England has developed a new enzyme that has the ability to break down plastics up to six times faster than standard enzymes, according to CNN (1) _____. In reducing the amount of non-biodegradable plastic on Earth, enzymes have been used to help combat pollution by breaking down polyethylene terephthalate (PET) chain molecules, the most common thermoplastic that makes up everyday items like single-use bottles, clothing, and carpet. (2)_____ The first altered enzyme was called PETase, which will now be connected with MHETase to create the University's new enzyme protein. Between these two enzymes connecting, PET chains in plastic were found to break down twice as fast as PETase alone.

A- The researchers, who had earlier engineered an enzyme found within bacteria of a plastic bottle combined it with a second enzyme to accelerate the breakdown of plastics.

B- A tool called the Diamond Light Source was used to map the molecular structure of MHETase.

C- Enzymes, proteins that are key components in chemical reactions within the human body, act as catalysts that speed up the breakdown of substances.

A- 1-B, 2-A

B- 1-B, 2-C

C- 1-A, 2-B

D- 1 C, 2- A

Answer - Option D (C, A)

Question 4: One part of the sentence below may contain an error. Identify the part. If there is no error, choose 'No error'

Whatever she said in her defence was not taken seriously by the investigating authorities.

A- No error

B- Whatever she said in her defence.

C- by the investigating authorities

D- was not taken seriously.

Answer - Option A. No error.

Question 5: Select the most appropriate option to fill in the blank.

The security guard _____ leave ended two days ago has not yet reported back to work.

A- whom

B- who

C- which

D- whose

Answer: D

Question 6: You are going to read a text. 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.

Disney is an international maze of parent companies and subsidiaries that leave few corners of the globe untouched, its vast holidays are maze of media networks, film studios, production companies, merchandising ventures, parks, resorts, distribution operations, Finance firms, gaming corporations, publishing companies, construction firms, vacation and cruise lines, music studios, and digital content providers. (1)_____ However, the company's reach spreads farther than many people might think- in movies, and television alone. (2)_____ Forbes ranks Disney- which employs more than 20,000 people ----- among top 10 most powerful brands in the world and values the company at more than \$238 billion.

A- it is common knowledge that Disney is behind classics like 'Beauty and the Beast' and 'The Lion King'.

B- There is only a seemingly endless web of companies, properties, holdings, and franchises that don't bear the Disney name yet serve as revenue streams for the corporate empire just the same.

C- Walt Disney World in Orlando, Florida re-opened the park in July with new safety precautions in place following months of being shut down amid the Coronavirus pandemic.

A- 1-C, 2-B

B- 1-C, 2-A

C- 1-A, 2-B

D- 1-A, 2-C

Answer - A , C

Question 7: 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 in bell

B- in Lauren's mind

C- way he spoke

D- Something about

Answer - Option A. (struck a bell)

Question 8: Complete the following sentence by, filling in the blanks (1 and 2) with the right word from the list given below.

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

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

A- 1-D, 2-A

B- 1-D, 2-B

C- 1-B, 2-D

D- 1-C, 2-C

Ans: D (C, C)

Question 9: Complete the following sentence by, filling in the blanks (1 and 2) with the right word from the list given below.

As we scrutinize our own faces for wrinkles and flaws, we can fail to notice what a marvelous organ the face is. Our faces are the most (1)_____ part of our visible body, a mysterious mosaic of the physical and psychical. Faces are the body's workaholics. They confer and confirm identity, express emotion, communicate meaning, perform, (2)_____ functions necessary for life, and enable us to experience the world through our senses.

Blank 1) A-distinctive B-typical C-average D-classic

Blank 2) A-plan B-Basic C-needed D-compulsory

A- 1-C, 2-B

B- 1-D, 2-C

C- 1-A, 2-B

D- 1-B, 2-A

Answer - Option C (A , B)

Question 10: One part of the sentence below may contain an error. Identify the part.

Either Rahul or Rohit accompany their grandmother and grandfather whenever they go to the hospital.

A- Either Rahul or Rohit accompany

B- No error

C- their grandmother and grandfather

D- whenever they go to the hospital.

Ans: A

Rohit accompanies

Question 11: Read the passage below and answer the question.

Archeology is based on the scientific method. Archeologists ask questions and develop hypotheses. They use evidence to choose a dig site, then use scientific sampling techniques to select where on the site to dig. They observe, record, categorize, and interpret what

they find. Then they share their results with other scientists and the public.

Underwater archaeologists study materials at the bottom of lakes, rivers, and oceans. Underwater archaeology encompasses any prehistoric and historic periods, and almost all sub-disciplines as Archaeology. Artifacts and features are simply submerged.

Artifacts studied by underwater archaeologists could be the remains of a shipwreck. In 1985, National Geographic Explorer-in-Residence Dr. Robert Ballard helped locate the wreck of RMS Titanic, which sank in the North Atlantic Ocean in 1912, killing about 1,500 people. Ballard and other scientists used sonar to locate the wreck, which had been lost since the ocean liner sank. By exploring Titanic

using remote-controlled cameras, Ballard and his crew discovered facts about the shipwreck (such as the fact the ship broke in two large pieces as it sank) as well as hundreds of artifacts, such as furniture, lighting fixtures, and children's toys. Underwater archaeology includes more than just shipwrecks, however. Sites include hunt camps on the continental shelf of the Gulf of Mexico, and portions of the ancient city of Alexandria, Egypt, submerged due to earthquakes and sea level rise.

What significant information did Dr. Ballard discover about the RMS Titanic?

- A- That 1500 people were on board the liner.
- B- That the ship had sunk in the North Atlantic ocean.
- C- That the liner had broken into two while sinking.
- D- That children's toys, furniture, and artifacts had also sunk with the ship.

Answer - B (3rd line of 3rd para)

Question 12: According to the passage, which was the research technology used by Underwater Archeologists to get the most effective visual feedback of the artifacts?

- A- Sonar technology
- B- Remote controlled cameras
- C- Scuba Diving team with cameras
- D- Miniature submarines.

Answer - Option B. (5th line of third paragraph)

Question 13: Which option gives the correct order of the process followed by archeologists?

- A- Categorize, develop hypotheses, apply evidence, ask questions, record, dig a site, interpret, observe, share.
- B- Observe, apply evidence, record, dig a site, ask questions, interpret, share, categorize, develop hypotheses.
- C- Dig a site, interpret, ask questions, observe, apply evidence, categorize, share, develop hypotheses, record.
- D- Ask questions, develop hypotheses, apply evidence, dig a site, observe, record, categorize, interpret, share.

Answer - Option D. (First line of the passage)

Question 14: Which of the following are underwater archeologists most unlikely to find?

- A- Artifacts and prehistoric features.
- B- Portions of an ancient history.
- C- Remains of a shipwreck
- D- Evidence of previous excavations.

Answer - Option D (Mentioned in fragments)

Question: Read the passage below and answer the questions.

When behavioural ecologists, Liz Derryberry saw a news report of coyotes crossing the Golden Gate Bridge in March, she immediately thought of her birds. For over a decade, Derryberry has studied the white crowned sparrow and how urban noise has disrupted and degraded the species ability to communicate.

With most San Franciscans staying at home due to the coronavirus pandemic, she decided to seize an unprecedented opportunity to study how this small, scrappy songbird responded when human noises disappeared.

"I realized we gotta do this, and we gotta do this now," she says.

By recording the species' calls among the abandoned streets of the Bay Area in the following months, Derryberry and colleagues have revealed that the shutdown dramatically improved the birds' calls, both in quality and efficiency. Male birds in particular rely on their songs to defend territory and find mates.

"The songs didn't change as much as we predicted—they changed even more," says Derryberry, of the University of Tennessee, Knoxville. "It highlights just how big of an effect noise pollution has."

The research, published today in *Science*, is among the first to scientifically evaluate the effects of the pandemic on urban wildlife. It also adds to a burgeoning field of research into how the barrage of human-made noise has disrupted nature, from ships drowning out whale songs to automobile traffic jamming bat sonar.

Question 15: Which word does the writer use to describe the extent of research on noise pollution.

- A- Improved
- B- Disrupted
- C- Burgeoning
- D- Drawing

Answer: C

Question 16: What purpose do the calls of the birds serve?

- A- They help the male secure their territory.
- B- They help them locate other birds.
- C- They show them the direction during flight.
- D- They assist them in finding food.

Answer - Option A

Question 17: The passage is primarily about the impact of the pandemic on_____

- A- bats
- B- whales
- C- sparrows
- D- coyotes

Answer: C

Question 18: The results of Derryberry and her companion's research were unexpected because_____

- A- it revealed that birds did not change their songs or their other habits.
- B- It showed that birds migrated from their original homes due to the pandemic.
- C- The birds' songs became fewer and less audible when fewer humans watched them.
- D- The bird songs became louder and better when human noises reduced.

Answer - D

Question 19 - For the four sentences (S1 to S4) paragraph below, sentences S1 and S4 are given. From the options P, Q and R choose the appropriate sentences for S2 and S3 respectively.

S1: Finland's Helsinki Airport is using a unique method for screening arriving passengers for COVID 19 - specially trained dogs that can detect the virus in humans - even before they show any symptoms

S2:

S3:

S4: According to the press release “The dog will perform its work in a separate booth so that the fear of spreading the infection is reduced”

P- Those taking the test will swipe with a test wipe and drop it into a cup, which is given to the dog.

Q - Upon arrival at the airport, passengers may be asked to volunteer for the program, and if they agree. Are given a wipe to collect a sweat sample

R- More dogs are currently being trained and should be available for the screening procedure in a few months

1. RQ
2. RP
3. QP
4. PQ

Ans: C

Question 20 - For the four sentences (S1 to S4) paragraph below, sentences S1 and S4 are given. From the options P, Q and R choose the appropriate sentences for S2 and S3 respectively.

S1: COVID-19 spreads mainly among people who are in close contact (within about 6 feet) for a prolonged period.

S2:

S3:

S4: Since people can spread the virus before they know they are sick it is important to stay at least 6 feet away from others, when possible even if you - or they - do not have any symptoms

P: Social distancing is especially important for people who are at higher risk for severe illness from COVID - 19.

Q: Spread happens when an infected person coughs, sneezes, or talks, and droplets from their mouth or nose are launched into the air and land in the mouths or noses of people nearby

R: The droplets can also be inhaled into the lungs.

1. QR
2. PQ
3. RQ
4. RP

Ans: A

Question 21 - You are going to read a text about an interesting initiative. 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 need to choose.

This year COVID-19 pandemic has introduced a wide swath of Americans to the joys of gardens and gardening. (1) _____ American’s rose garden at the American Rose Centre is seeking volunteers to participate during its upcoming

Volunteer days from 8:00 a.m. to 3:00 p.m. on October 23rd and 24th (2) _____. Mask wearing and social distancing will be observed and a brown, bag lunch will be provided to all who register.

A- Volunteers are welcome to come and work in the garden any time during the two days.

B- The fresh air and other healthful benefits of outdoor exercises, together with the good feeling of accomplishing something useful have drawn many to being gardening or increase activities in the garden

C- After the tour, volunteers will be guided through tasks by garden team leaders.

1. (1) - C, (2) - B
2. (1) - A, (2) - C
3. (1) - C, (2) - A
4. (1) - B, (2) - A

Ans D

Question 22 - Which of the following sentences does NOT use informal language?

1. Can we sort this out together?
2. I sincerely apologise for the oversight
3. Thanks a lot for sharing this information
4. This is a high priority account, take care!

Answer - B (apologise is formal)

Question 23 - For the four sentences (S1 - S4) paragraph below, sentences S1 and S4 are given. From the options P, Q, R, choose the appropriate sentences for S2, S3 respectively.

S-1: Gianni Crea, the head key-keeper of the Vatican, is intimately familiar with the contours of history.

S-2:

S-3:

S-4: They traverse a 4.6 - mile route through the museums which see upto 28,000 visitors per day.

P: Almost every morning for the past six years, he's opened the doors to the Vatican Museums.

Q: Crea and his team of 10 - Five each on the morning and evening shifts - open and close 300 doors every day, mobilizing about 700 employees along with them.

R: Crea has worked in the Vatican for 20 years and as head key-keeper for six.

1. RP
2. PQ
3. QR
4. QP

Answer - Option B (PQ)

REASONING ABILITY

Question 1: Which is the wrong term in the following series ?

axc,cve,fsh,jpm,oyq,udw

1. Udw
2. Ojq
3. Jpm
4. fsh

Solution 1:

AXC = 1 letter gap between 1st and 3rd letter

CVE = 1 letter gap between 1st and 3rd letter

FSH = 1 letter gap between 1st and 3rd letter

OYQ = 1 letter gap between 1st and 3rd letter

UDW = 1 letter gap between 1st and 3rd letter

JPM= no pattern like above words.

Hence JPM is the wrong term in the series.

Question 2: Given below is a question by two statement, I and II each containing some information. Decide which of the statement (s) is/are sufficient to answer the question.

Among Six people P,Q,R,S,T and U, how many are teachers?

Statement:

I. "Q and T are teachers" is True.

II. "At least one of P and R is a teacher" is false and S and U's status is same like P and R.

1. Statement II alone is sufficient.
2. Both the statement I and II together are needed.
3. Both the statement I and II together are not sufficient.
4. Statement I alone is sufficient.

Solution 2: Both the statement I and II together are not sufficient.

Question 3: In each of the five pairs of the letter-clusters, the letter in the second term is a rearranged/ transformed form of the letter in the first term in a particular pattern. In which two pairs, has the transformation been done the same way?

[A] WMSHD- DSHWM

[B] NPKRQ - PRKQN

[C] HQRWK - HKWQR

[D] ZIGPM- PIZGM

[E] BWIKG - GIKBW

1. A and E
2. A and C
3. D and B

Solution 3:

A = WMSHD- DSHWM

Here,

WMSHD divide it into two parts i.e., WM and SHD

Now, in second part move the last letter in front and so on, i.e, DSH

Now put second part before the first part i.e., DSHWM

Similarly in E = BWIKG - GIKBW

Here, divide it into two parts i.e., BW and IKG

Now, in second part move the last letter in front and so on i.e., GIK

Further, shift the second part before first part i.e., GIKBW

Hence Option A is correct i.e, A and E

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Question 4: There are five person in a family A, B,C,D and E. In which, one is working as a doctor; one is an engineer. Both A and C are unmarried ladies, who are not working. None of the ladies is working as a doctor and a lawyer in the family. E is the husband of the only one married couple in the family. B is the brother of C and neither a lawyer and nor an engineer.

Who is the doctor in the family?

1. A
2. E

3. B

4. D

Solution 4: Option C

A, B are unmarried ladies who are not working. E is the husband of only one married couple..so D is the lady and none of the ladies are working as doctor and lawyer.SO now E profession is not given but B is neither lawyer nor an engineer so.. B can be a doctor

Question 5: The following are the criteria for selecting a candidate for the post Assistant Manager.

The candidate must.

(i) Be a graduate in engineering in specification of Human Resource Management with minimum 55% marks.

(ii) Have three years full time experience.

(iii) Have secured more than 60 % in the interview and at least 70% in the written test.

However, if the candidate fulfills the above criteria except.

In case of the applicant who satisfies all other criteria except-

- at(i) above , but has more than five year experience in relevant field. his/her case is to be referred to the management.
- at(ii) above, but has secured more than 65% in the written test as well as in the interview. his/her case to be referred to the HR department.
- at(iii) above, but has graduated in engineering with specialization Human Resource Management with a minimum 65% marks in his/her case to be referred to the General Manager.

Sidharth has recently completed his graduate in engineering with specialization of Human Resource Management with minimum 65 % marks. He has now secured 65% in the interview and 65% in the written test. Thanks PrepInsta for doing the hard work, we just copied it from them.

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

A- Refer to HR department

B- He would be selected.

C- Refer to the General Manager.

D- Refer to Management.

Solution 5:- Refer to the HR Department

Because he has already fulfilled the above criteria and scored 65% in the written test as well as in the interview so his case will be referred to the HR department.

;

Question 6: Two Statements are given followed by three conclusion 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 conclusion logically follow (s) from the statements.

Statements-

All animals are plants.

All plants are shrubs.

Conclusion-

I. Some shrubs are plants.

II. Some animal are not shrubs.

III. All animal are shrubs.

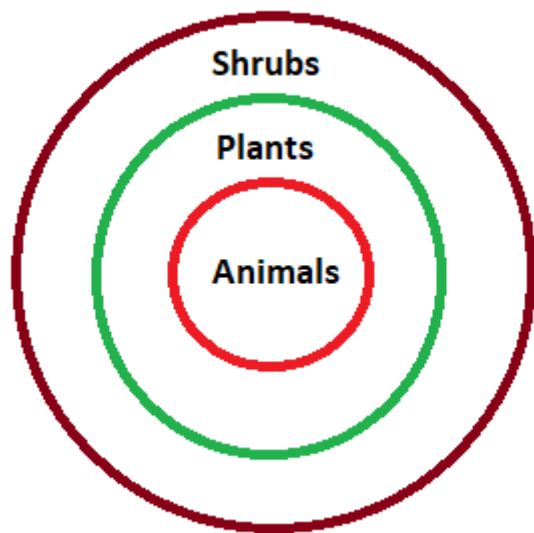
A- Only Conclusion I and II follow.

B- None of the Conclusion Follow.

C. Only Conclusion I and III follow

D. None of the above

Solution 6: Option C



Question 7:- Three Statements are followed by four conclusions numbered I, II, III and IV. Assuming the statement to be true. Even if they do not confirm to real world knowledge, decide which of the conclusion(s), logically follows from the statements.

Statement:

1. All clothes are Shirts
2. All shirts are pants.
3. All cots are pants.

Conclusion:

1. No clothe is cot
2. Some cots are shirts.
3. Some pants are clothes.
4. Some cots are clothes.

A- Only II follow

B- Either II or I follow

C- Only Either I or IV and III follow.

D- Only III follow.

Solution 7:

Only Either I or IV and III follow



Question 8: In a certain code, $a+b$ means a is the wife of b ; $a*b$ means a is the brother of b and a/b means a is the son of b .

If $T/z * U+W$, then which of the following is true ?

- A- U is the aunt of T
- B- W is the wife of Z
- C- T is the daughter of Z
- D- U is the uncle of T

Solution 8:-A

T is the son of z , z is the brother of u and u is the wife of W

So U is the aunt of T

Question 9: There are five person in a family A, B, C, D and E . In which, one is working as a doctor; one is an engineer. Both A and C are unmarried ladies, who are not working. None of the ladies is working as a doctor and a lawyer in the family. E is the husband of the only one married couple in the family. B is the brother of C and neither a lawyer and nor an engineer.

Who is the lawyer ?

- A- E
- B- D
- C- A
- D- B

Solution 9: option A

A, B are unmarried ladies who are not working. E is the husband of only one married couple..so D is the lady and none of the ladies are working as doctor and lawyer. B is neither lawyer nor an engineer so.. B is a doctor and the person that is left is E so E is a lawyer.

Question 10:- Given Below is a question followed by two statements, I and II, each containing some information. Decide which of the statement is /are sufficient to answer the question.

The ratio of fees of two different schools is 2: 2.5 What would be the fees of the school if discount of 25% and 35% are given on the both the schools respectively ?

Statements-

1. Discount on the second school fees in Rs. 8750 ?

11. difference between the discount on the two school fees is Rs. 3750 ?

1. Statement II alone is sufficient
2. Statement I alone is sufficient
3. Both Statement I and II together are not sufficient.
4. Both Statement I and II together are sufficient

Solution 10:-

Here both the statements I and II together are sufficient to answer the question.

Question 11: There are five people in the family O,P,Q,R,and S They are working as a farmer ,a teacher,a lawyer,an engineer and a doctor. P is an unmarried daughter of O working as a teacher.S is the brother of Q ,working as a lawyer Q is the husband of the only married couple in the family. O is the father of an unmarried daughter and two sons. Working as farmer O's daughter in law is a doctor.

Who is an engineer in the family ?

- A- O
- B- P
- C- R
- D- Q

Solution 11: Option D

- O - farmer
- P- teacher
- Q- Engineer
- R- doctor
- S- lawyer

O is the father of P who is teacher (unmarried daughter) and Q(married) and S (lawyer) (Brother) . So Q is married so R is the wife of Q who is a doctor. The only one who is left is Q so Q is an engineer.

Question 12:- A statement is followed by two assumptions number I and II . Consider the statement and decide which of the given assumptions(S) is/are Implicit in the statement .

Statement:

If he is a hard worker ,he will succeed in Life.

Assumptions:

- I To succeed,he must be a hard worker
- II He will succeed in life.

- A- None of I and II are implicit.
- B- Only I is implicit.
- C- Only II is implicit.
- D- Both I and II are implicit.

Solution 12:

Only I is implicit

Question 13:- A Statement is followed by three courses of action numbered I,II and III . Assuming everything in the statement to be true, decide which of the suggested courses of action (a decision to be taken for follow up / improvement in regard to the problem) logically follows for pursuing .

Statement:-

There is a considerable increase in the number persons infected by corona virus during the last few months through person to person contact and direct contact with respiratory droplets, exhausted by the infected person.

Courses of action

- I. Wear amast when social distancing is not possible.
 - II. The government should give adequate information through mass media regarding corona virus
 - III. Health Centres and facilities should be increase and fully equipped properly for the treatment patients
1. Only I is implicit.
 2. All are implicit.
 3. Both I and II are implicit.
 4. Only II is implicit.

Solution 13:-

Both I and II are implicit

Question 14:- Given below is a question followed by two statements, I and II, each containing some information. Decide which of the statements(s) is/are sufficient to answer the question.

What is the age of Sumit ? Statements.

- I. Sumit is five year younger than amit, who is double the age of Prateek.
 - II. Prateek is 10 years elder than Ravi whose age is 22 years.
- A- The Combination of both the statement I and II are necessary.
B- The Combination of both the statement I and II are not necessary.
C- Statement II alone is sufficient.
D- Statement I alone is sufficient.

Solution 14: The Combination of both the statement I and II are necessary.

Option A

Question 15:- A statement is followed by two assumptions numbered I and II.

Consider the statement and decide which of the gives assumption is/are implicit in the statement

Statement-

If you have any queries, ask there to me

Assumption:

- I. You have no questions.
 - II. I can answer any questions
1. Neither I nor II is implicit.
 2. Only II is implicit.
 3. Both I and II are implicit.
 4. Only I is implicit.

Solution 15: Both I and II are implicit

Question 16:- The following are the criteria for selecting a candidate for the post Assistant Manager.

The candidate must.

- (i) Be a graduate in engineering in specification of Human Resource Management with minimum 55% marks.
- (ii) Have three years full time experience.

(iii) Have secured more than 60 % in the interview and at least 70% in the written test.

However, if the candidate fulfills the above criteria except.

In case of the applicant who satisfies all other criteria except-

- at(i) above , but has more than five year experience in relevant field. his/her case is to be referred to the management.
- at(ii) above, but has secured more than 65% in the written test as well as in the interview. his/her case to be referred to the HR Operatement.
- at(iii) above, but has graduated in engineering with specialization Human Resource Management with a minimum 65% marks in his/her case to be referred to the General Manager.

Amit has completed his B.E with 60% marks without HRM specialization but he has been working as an assistant manager in a required company for the last six year. He has now secured 65% in the interview and 66% in the written test. If you are reading this, please appreciate the hard work done by PrepInsta team

A- Refer to HR department

B- He would be selected.

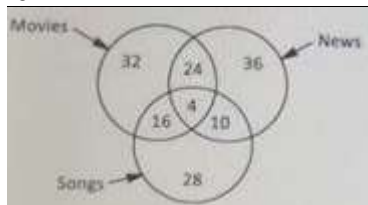
C- Refer to the General Manager.

D- Refer to Management.

Solution 16:

Refer to the General Manager.

Question 17:- Consider the venn diagram given below:-



The number in the venn diagram indicates the number of the person /people watching the TV programmes. The diagram is drawn after surveying 150 persons in a population of 12000. How many person/people can be expected to watch at least two TV Programs?

A-3200

B- 2880

C-4320

D-2280

Solution 17:

$$24 + 4 + 16 + 10 = 54$$

Fraction of people who have taken part in survey = $12000/150 = 80$

Fraction of people expected to watch at least 2 TV programs = $54 * 80 = 4320$

(Options are incorrect for this question)

Question 18:- In a certain code,P+Q means P is the father of Q; P-Q means P is the sister of Q and P/Q means P is the brother of Q.

Which is the following equation,shows that A is the uncle of D ?

1. $(A+B+C-D)$
2. $(A-D+C/B)$
3. $(A+B/C-D)$

4. (A-B+C/D)

Solution 18:-

The correct answer for this question will be (A/B+C/D)

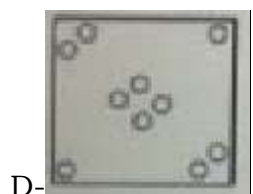
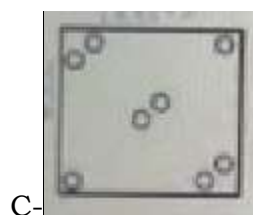
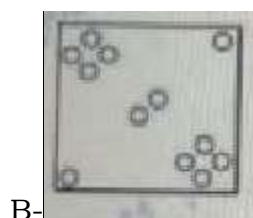
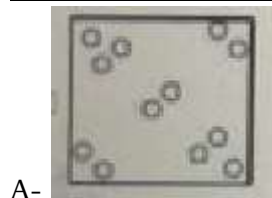
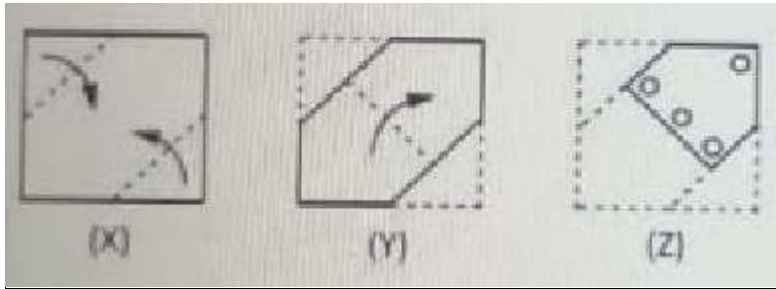
A/B means that A is the brother of B

B+C means that B is the father of C, which means that A is the uncle of C

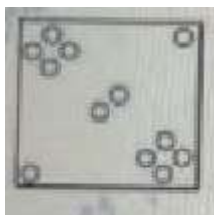
Now, C/D means that C is the brother of D, which means that A will be the uncle of D

Question 19:- The Sequence of folding a piece of square paper and the manner in which the folded paper has been cut is shown in the figures marked X,Y,and Z.

How would the paper look when unfolded ?



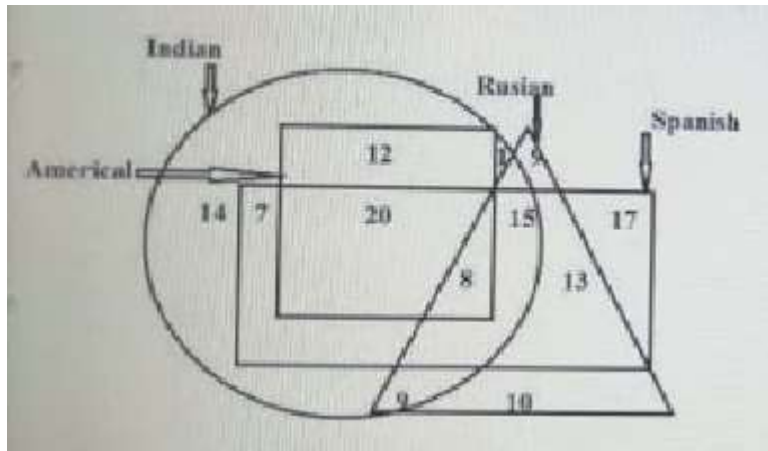
Solution 19: Option B



Question 20:- The following diagram shows the people who can speak various languages, the rectangle stand for "Spanish; the circle stands for "indian; the

triangle stands for “Russian”, and the square stands for “American”.The numbers in different segment show the number of persons.

Answer the question on the basis of the information given in the diagram.

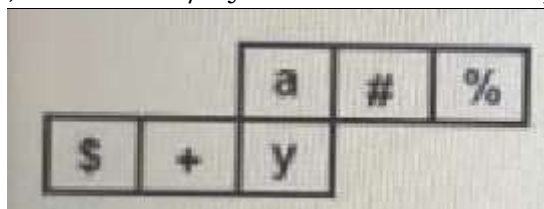


How many people can only speak both language Spanish and Russian ?

- A- 17
- B- 10
- C- 18
- D- 13

Solution 20: Option D (13)

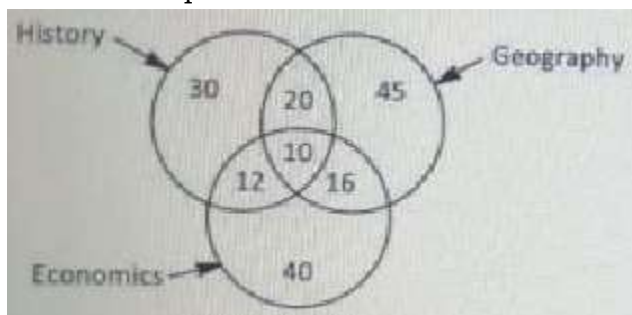
Question 21:- A Cube is made by folding the giving sheet, In the cube so formed ,which letter/ symbol will be on the opposite face to the face having symbol “%”?



- A- (+)
- B-(Y)
- C-(a)
- D-(\$)

Solution 21:- Option C (a)

Question 22:- The diagram given below shows the number of students who got distinction in three subjects out of 320 students. Study the diagram carefully and answer the questions



What is the percentage of students who got distinction only in two subject ?

- A- 48
- B- 10

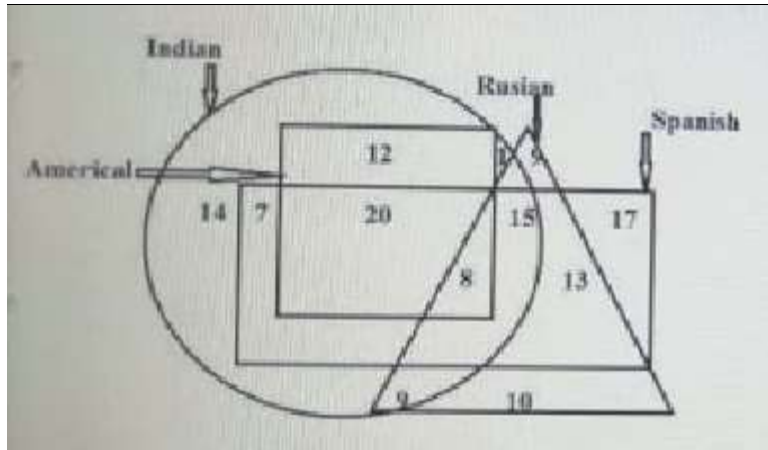
C- 25

D-15

Solution 22:
$$\frac{20 + 12 + 16}{320} \times 100 = 15\%$$

Question 23:- The following diagram shows the people who can speak various languages, the rectangle stand for "Spanish"; the circle stands for "Indian"; the triangle stands for "Russian", and the square stands for "American". The numbers in different segments show the number of persons.

Answer the question on the basis of the information given in the diagram.



How many people can speak American and Russian languages ?

A- 15

B- 8

C- 13

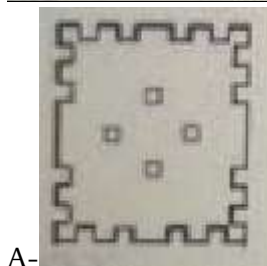
D- 9

Solution 23:

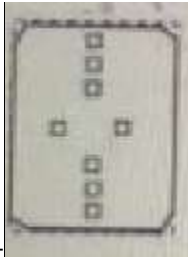
There are 8 people who can speak American and Russian

Question 24: The sequence of folding a piece of square paper and the manner in which the folded paper has been cut is shown in the figures marked X, Y and Z.

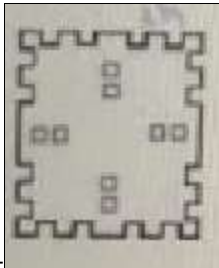
How would the paper look when unfolded ?



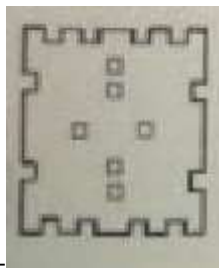
A-



B-

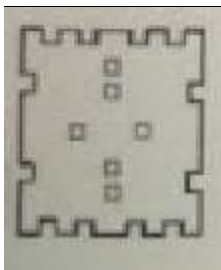


C-

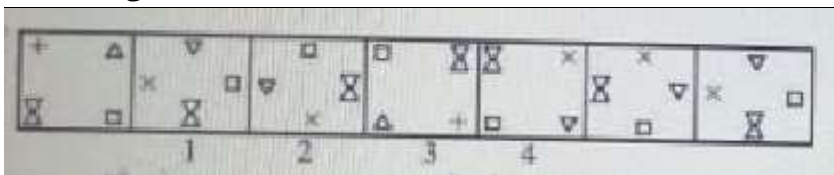


D-

Solution 24:



Question 25:- These are seven figures, the first and last two of which are unnumbered. One of the numbered figures does not fit into the series. The number of that figure is the answer. Find it out .



A- 2

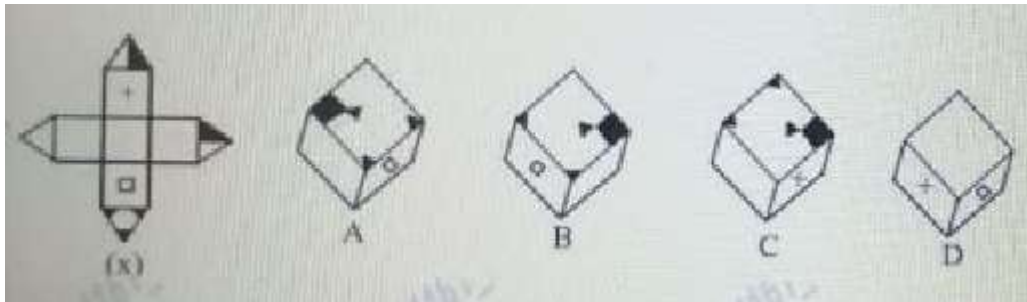
B-3

C-4

D-1

Solution 25: Option B

Question 26:- 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 .



A- B and D only

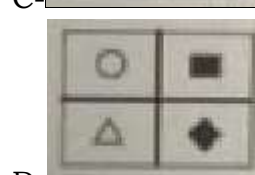
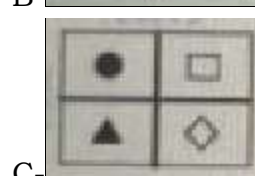
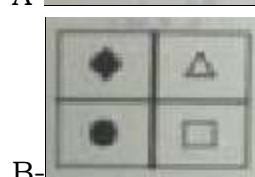
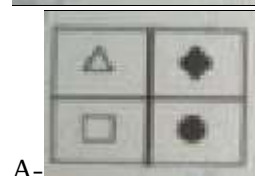
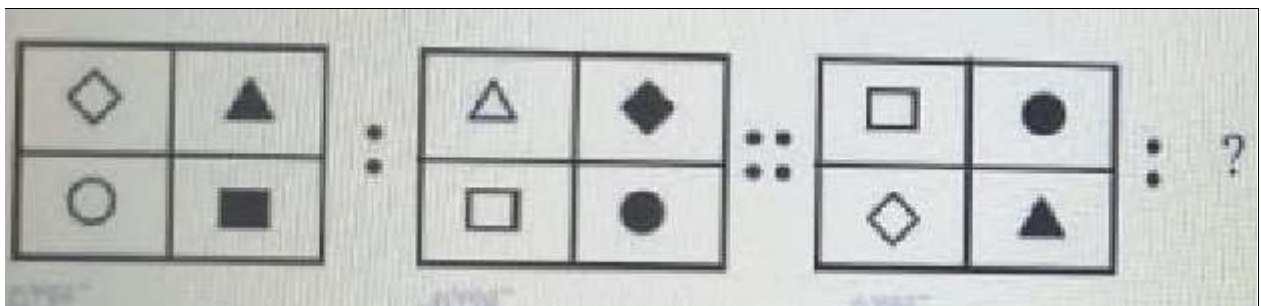
B- B and C only

C- All of A,B,C and D

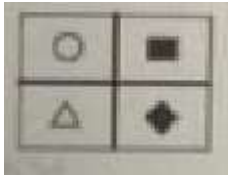
D-A and B only

Solution 26:- Option B (B and C only)

Question 27:- The Two figures on the left of the sign "::" are related in a certain way. The same relationship holds goods for the second pair of figures on the right of the sign "::" of which ,one figure is missing .Find the missing figure from the alternatives.



Solution 27:-



Option D is correct as from the starting two image we can see that the position of the diagram in the adjacent column is interchanged but keeping the shading to that part of the image.

PROGRAMMING LOGIC

Question - In a Singly Circular Linked List, how many address fields are there

1

1+1

2

2+1

Answer : Option A

Question - Select best suitable answer for below functions

sizeof()

strlen

sizeof() - returns size of string including null characters

strlen() - Return size of string including null characters

sizeof() - returns size of string excluding null characters

strlen() - Return size of string excluding null characters

sizeof() - returns size of string including null characters

strlen() - Return size of string excluding null characters

sizeof() - returns size of string excluding null characters

strlen() - Return size of string including null characters

Answer : Option C

Question- When we compose a binary tree through the given preorder sequence, what will be left child of 6? (Note: Consider 4 as root node)

4, 2, 1, 3, 6, 5, 7

5

1

7

3

Answer : Option A

Questions - Based on below infix and postfix expressions, identify prefix expression

Infix Expression - $P-Q*(R+S)/(W-X)*Y+Z$

Postfix Expression - $PORS+*-WX-Y*/Z+$

$P-/*Q+R+S*WXYZ-$

$-P/*Q+RS+*W-XYZ$

$-P/*Q+RS+*-WXYZ$

$P-/*+RS+Q*-WXYZ-$

Question - Which of the following is not a logical operator

|
&&
||
&

Answer : Option D

Question- The data modeling phase consists of which of the following?

Creation of logical data model
Creation of infographics
Creation of bigdata analysis model
Creation of evaluation tool

Answer : Option A

Question- What will be the output of the given program?

```
void main()
{
    char a[10][10]={"kellos","hellos","fellors"}
    printf("%s",a[1])
}
hellos
ellos
Compile time error
ellos hellos fellors
```

Question- What will be the output?

```
class car
{
    public void Show()
    {
        System.out.println("Brand is not defined yet");
    }
}
class mercedes extends car
{
    public void Show()
    {
        System.out.println("It's mercedes");
    }
}
Class Benz extends mercedes
{
}
public class main()
{
    Public static void main(String[] args)
    {
        car obj = new Benz();
    }
}
```

```
        obj.Show();
    }
}
Compile Time Error
Run Time Error
It's mercedes
Brand is not defined yet
```

Question - What will be the output of the following program?

```
public class Main
{
    public static void main(String[] args)
    {
        try
        {
            int[] arr = {10, 25, 2, 6, 8, 9, 7, 32}
            for(int i=0; i<arr.length; i++)
            {
                System.out.print(arr[i+1]);
            }
        }
        catch(Exception e)
        {
            System.out.println("Inside Exception");
        }
    }
}
```

Type your answer here _____.

Question - What will be the output of the below code?

```
public class Main
{
    int x = 10;
    public static void main(String[] args)
    {
        try
        {
            Main t1 = new Main();
            System.out.println(t1.x);
        }
        catch(Exception e)
        {
            System.out.println("Exception caught");
            return;
        }
    }
}
static
```

```

{
    int x =20;
    System.out.print(x+" ");
}
}

```

Enter your answer ONLY as a NUMERAL in the box

CODING

Question 1

We want to estimate the cost of painting a property.

Interior wall painting cost is Rs.18 per sq.ft. and exterior wall painting cost is Rs.12 per sq.ft.

Take input as

1. Number of Interior walls
2. Number of Exterior walls
3. Surface Area of each Interior Wall in units of square feet
4. Surface Area of each Exterior Wall in units of square feet

If a user enters zero as the number of walls then skip Surface area values as User may don't want to paint that wall.

Calculate and display the total cost of painting the property

Example 1:

```

6
3
12.3
15.2
12.3
15.2
12.3
15.2
10.10
10.10
10.00

```

Total estimated Cost : 1847.4 INR

Note: Follow in input and output format as given in above example

Solution in C:

```

#include<stdio.h>
int main()
{
    int ni,ne,i=0;
    float int_p=18,ext_p=12,cost=0,temp;
    scanf("%d %d",&ni,&ne);
    if(ni<0 || ne<0 )
    {
        printf("INVALID INPUT");
    }
}

```

```

    }
    else if(ni==0 && ne==0)
    {
        printf("Total estimated Cost : 0.0");
    }
    else
    {
        for(i=0;i<ni;i++)
        {
            scanf("%f",&temp);
            cost+= int_p*temp;
        }
        for(i=0;i<ne;i++)
        {
            scanf("%f",&temp);
            cost+= ext_p*temp;
        }
        printf("Total estimated Cost : %.1f",cost);
    }
    return 0;
}

```

Solution in C++:

```

#include<iostream>
using namespace std;
int main()
{
    int ni,ne,i=0;
    float int_p=18,ext_p=12,cost=0,temp;
    scanf("%d %d",&ni,&ne);
    if(ni<0 || ne<0 )
    {
        cout<<"INVALID INPUT";
    }
    else if(ni==0 && ne==0)
    {
        cout<<"Total estimated Cost : 0.0";
    }
    else
    {
        for(i=0;i<ni;i++)
        {
            cin>>temp;
            cost+= int_p*temp;
        }
        for(i=0;i<ne;i++)
        {
            cin>>temp;

```



```

        cost+= ext_p*temp;
    }
    cout<<"Total estimated Cost : "<<cost;

}
return 0;
}

```

Solution in Java:

```

import java.util.Scanner;
class Main {
    public static void main(String[] args) {
        int ni, ne, i = 0;
        float intP = 18, extP = 12, cost = 0, temp;
        Scanner sc = new Scanner(System.in);
        ni = sc.nextInt();
        ne = sc.nextInt();
        if(ni < 0 || ne < 0) {
            System.out.print("INVALID INPUT");
        } else if(ni == 0 && ne == 0) {
            System.out.print("Total estimated Cost : 0.0");
        } else {
            for(i = 0; i < ni; i++) {
                temp = sc.nextFloat();
                cost += intP * temp;
            }
            for(i = 0; i < ne; i++) {
                temp = sc.nextFloat();
                cost += extP * temp;
            }
            System.out.printf("Total estimated Cost : %.1f", cost);
        }
    }
}

```

Solution in Python:

```

interior_walls = int(input())
exterior_walls = int(input())
if interior_walls:
    int_walls = []
    for i in range(interior_walls):
        int_walls.append(float(input()))
if exterior_walls:
    ext_walls = []
    for i in range(exterior_walls):
        ext_walls.append(float(input()))
if exterior_walls < 0 or interior_walls < 0:
    print("Invalid Input")
    exit()

```

```

if exterior_walls and interior_walls:
    print("Total estimated Cost : ",(sum(int_walls)*18+sum(ext_walls)*12),"INR")
else:
    if exterior_walls:
        print("Total estimated Cost : ",sum(ext_walls)*12,"INR")
    elif interior_walls:
        print("Total estimated Cost : ",sum(int_walls)*18,"INR")
    else:
        print("Total estimated Cost : 0.0 INR")

```

Question 2

A City Bus is a Ring Route Bus which runs in circular fashion. That is, Bus once starts at the Source Bus Stop, halts at each Bus Stop in its Route and at the end it reaches the Source Bus Stop again.

If there are n number of Stops and if the bus starts at Bus Stop 1, then after nth Bus Stop, the next stop in the Route will be Bus Stop number 1 always.

If there are n stops, there will be n paths. One path connects two stops. Distances (in meters) for all paths in Ring Route is given in array Path[] as given below:

Path = [800, 600, 750, 900, 1400, 1200, 1100, 1500]

Fare is determined based on the distance covered from source to destination stop as Distance between Input Source and Destination Stops can be measured by looking at values in array Path[] and fare can be calculated as per following criteria:

If d = 1000 metres, then fare = 5 INR

(When calculating fare for others, the calculated fare containing any fraction value should be ceiled. For example, for distance 900m when fare initially calculated is 4.5 which must be ceiled to 5)

Path is circular in function. Value at each index indicates distance till current stop from the previous one. And each index position can be mapped with values at same index in BusStops [] array, which is a string array holding abbreviation of names for all stops as-

"THANERAILWAYSTN" = "TH", "GAONDEVI" = "GA", "ICEFACTROY" = "IC",
 "HARINIWASCIRCLE" = "HA", "TEENHATHNAKA" = "TE", "LUISWADI" = "LU",
 "NITINCOMPANYJUNCTION" = "NI", "CADBURRYJUNCTION" = "CA"

Given, n=8, where n is number of total BusStops.

BusStops = ["TH", "GA", "IC", "HA", "TE", "LU", "NI", "CA"]

Write a code with function getFare(String Source, String Destination) which take Input as source and destination stops (in the format containing first two characters of the Name of the Bus Stop) and calculate and return travel fare.

Example 1:

Input Values

ca

Ca

Output Values

INVALID OUTPUT

Example 2:

Input Values

NI

HA

Output Values

23.0 INR

Note: Input and Output should be in format given in example.

Input should not be case sensitive and output should be in the format <FLOAT>

INR

Solution in Python:

```
import math
```

```
def getFare(source,destination):
```

```
    route=[ [ "TH", "GA", "IC", "HA", "TE", "LU", "NI", "CA"],  
            [800,600,750,900,1400,1200,1100,1500]  
            ]
```

```
    fare = 0.0
```

```
    if not (source in route[0] and destination in route[0]):
```

```
        print("Invalid Input")
```

```
        exit()
```

```
    if route[0].index(source) < route[0].index(destination):
```

```
        for i in range(route[0].index(source),route[0].index(destination)+1):
```

```
            fare+=route[1][i]
```

```
    elif route[0].index(destination) < route[0].index(source):
```

```
        for i in range(route[0].index(source)+1,len(route[0])):
```

```
            fare+=route[1][i]
```

```
        for i in range(0,route[0].index(destination)+1):
```

```
            fare+=route[1][i]
```

```
    return float(math.ceil(fare*0.005))
```

```
source = input()
```

```
destination = input()
```

```
fare = getFare(source,destination)
```

```
if fare == 0:
```

```
    print("Invalid Input")
```

```
else:
```

```
    print(fare)
```

Solution in C++:

```
#include <bits/stdc++.h>
```

```
using namespace std;
```

```
int main() {
```

```
    string s , d;
```

```
    cin>>s>>d;
```

```
    transform(s.begin(),s.end() , s.begin(),::toupper);
```

```
    transform(d.begin(),d.end() , d.begin(),::toupper);
```

```
    string arrs[8] = {"TH" , "GA", "IC" , "HA" , "TE", "LU" ,"NI","CA"};
```

```
    float arr[8]={800,600,750,900,1400,1200,1100,1500};
```

```
    float res=0;
```

```
    int st ,ed;
```

```
    for(int i=0;i<8;i++)
```

```
    {
```

```
        if(s==arrs[i])
            st=i;

        if(d==arrs[i])
            ed=i;

    }
    if(st==ed)
    {
        cout<<" INVALID INPUT";
        return 0;
    }
    else
    {
        int i=st+1;
        cout<<i;
        while(i!=ed+1)
        {
            res+=(arr[i]);
            i=(i+1)%8;
        }
        cout<<(ceil)(res*0.005);
        return 0;
    }
}
```

This document details the Slot Analysis as well as Answers to Questions that students recollected post their TCS NQT(Slot 3) on 25th 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
- Data sufficiency
- Syllogisms
- Statements and Assumptions
- Odd one out
- Rule based decision making
- Decision tables
- Linear equations

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.

Questions with Answers:

Numerical Ability

Q1. Rani purchased 5 cows and 2 horses for Rs.66000. When she sells the cows at 15% profit and the horses at 10% profit, she earns a total profit of Rs.9100. What is the difference between the cost price of one cow and that of one horse?

- A. Rs. 2500
- B. Rs. 3000
- C. Rs. 2000
- D. Rs. 4600

Answer: Option C

Q2. If $x = -3 + 3^{-\frac{2}{3}} + 3^{\frac{2}{3}}$ what will be the value of $x^3 + 9x^2 + 24x$?

- A. $-9 \frac{1}{9}$
- B. $8 \frac{1}{9}$
- C. $9 \frac{1}{9}$
- D. $-8 \frac{8}{9}$

Answer: Option D

Q3. If the area of a rectangle is 1260 cm^2 and its perimeter 146cm, what is the length of a diagonal?

- A. 45 cm
- B. 28 cm
- C. 53 cm
- D. 44 cm

Answer: Option C

Q4. A certain sum of money invested at S.I amounts to Rs.990 in 3 years and to Rs.1125 in $4 \frac{1}{2}$ years. What is the rate of interest per annum?

- A. 13%
- B. 12%
- C. 13.5%
- D. 12.5%

Answer: Option D

Q5. The salaries of A,B and C are in the ratio 4:10:25.If the increments of 30%, 15% and 25% are provided to A, B and C respectively in their salaries, what will be the ratio of their new salaries?

- A. 104 : 230 : 625
- B. 250 : 201 : 525
- C. 260 : 231 : 450
- D. 265 : 231 : 575

Answer: Option A

Q6. A man can row 32Km upstream and 48Km downstream in 14hours. Also he can row 24Km upstream and 40Km downstream in 11 hours. Then, what is the speed of the man in still water?

- A. 2Km/hr
- B. 4Km/hr
- C. 6Km/hr
- D. 8Km/hr

Answer: Option C

Q7. If $x = \sqrt{28 + 5\sqrt{12}}$ and $y = \sqrt{37 + 10\sqrt{12}}$, what is the value of $\frac{x-y}{x+y}$?

- A. $\frac{10 - 9\sqrt{3}}{73}$
- B. $\frac{9 - 10\sqrt{3}}{73}$
- C. $\frac{9 + 10\sqrt{3}}{73}$
- D. $\frac{10 + 9\sqrt{3}}{73}$

Answer: Option B

Q8. A student travelled from his village to the school at the rate of 20 Km/hr and walked back at the rate of 15Km/hr. If the whole journey took 1 hr 24 minutes, the distance of school from his village is-

- A. 24 Km
- B. 17.5 Km
- C. 15 Km
- D. 12 Km

Answer: Option D

Q9. The marked price of an article is Rs. 300. After allowing a discount 15% on the marked price, the shopkeeper makes a gain of Rs. 15. What is the gain percentage?

- A. $4 \frac{1}{5}$
- B. $5 \frac{1}{4}$
- C. $6 \frac{1}{4}$
- D. $4 \frac{1}{6}$

Answer: Option C

Q10. A sum of 5250 is divided among A, B, C and D such that $A : B = B : C = C : D = 3 : 4$. What is the sum of A and B shares?

- A. 2000
- B. 270
- C. 1850
- D. 1890

Answer: Option D

Q11. If a student scores 15% and fails by 70marks, while another student who scores 45% marks gets 50 marks more than the minimum required marks to pass the examination, what are the minimum marks to pass the examination?

- A. 100
- B. 180
- C. 150
- D. 130

Answer: Option D

Q12. Simplify $6\frac{1}{3} + (5\frac{5}{6} / 2\frac{1}{3} - 2\frac{1}{3} \text{ of } 7\frac{1}{2}) + 13\frac{1}{2}$

- A. $6\frac{1}{3}$
- B. $5\frac{1}{2}$
- C. $4\frac{5}{6}$
- D. $5\frac{1}{3}$

Answer: Option C

Q13. If mean of 29 observations is 33 and on adding one more observation the new mean becomes 34. What is the value of the 30th observation?

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

Answer: Option D

Q14. Compounded at the same rate of interest, a certain sum of money amounts to Rs.58080 after 2 years and Rs.63,888 after 3 years. What is the sum?

- A. Rs.46000
- B. Rs.52800
- C. Rs.48000
- D. Rs.45000

Answer: Option C

Q15. A train running at a speed of 36Km/hr takes 30 seconds to cross a platform and 15 seconds to pass a man walking at 6Km/hr in the opposite direction in which the train is going. Then what will be the length of the platform?

- A. 140m
- B. 150m
- C. 175m
- D. 125m

Answer: Option D

Q16. If the HCF of two numbers is 17 and LCM is 1309, which of the given options could be one of the two numbers?

- A. 170
- B. 119
- C. 167
- D. 153

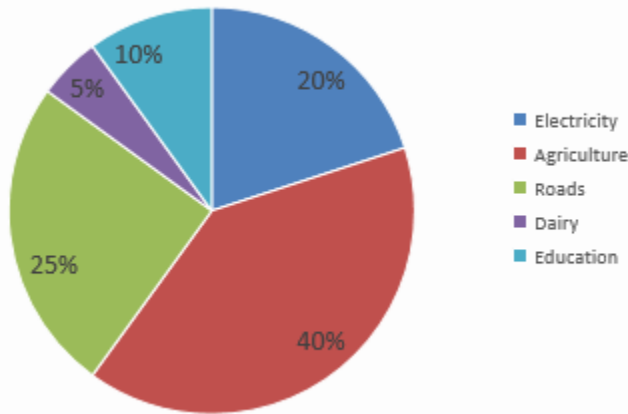
Answer: Option B

Q17. In an election between two candidates, 70% of the total votes enrolled were polled. Out of which 4% votes were declared invalid. A winning candidate got 12600 votes, which were 60% of the valid votes. The number of voters cast their vote will be

- A. 31250
- B. 32050
- C. 21875
- D. 22125

Answer: Option C

Q18. Consider the following pie chart of 2019-2020 Punjab State Budget. If a total expenditure of Rs. 180 millions was increased, what is the difference between the budget allocated for agriculture and Roads in millions?



- A. 36
- B. 72
- C. 45
- D. 27

Answer: Option D

Verbal Ability

Q1. Fill in the blanks with most appropriate set of words from the option 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. For saving/began to slip
- C. To save/began slipping
- D. To save/begin to slip

Answer: Option B

Q2. One part of the sentence below may contain an error. Identify the part. If there is no error, choose 'No error'

My grandmother/ always goes to school with me/ because the school was attached to the temple.

- A. Always go to school with me
- B. Because the school was attached to the temple

- C. My grandmother
- D. No error

Answer: Option A

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

As before, he kept off the beat track,/ making his way through open meadows,/ and patches of trees.

- A. As before, he kept off the beat track
- B. making his way through open meadows
- C. No error
- D. and patches of trees.

Answer: Option A

Q4. Fill in the blanks with most appropriate set of words from the option given below:

Everyday we are _____ with hundreds of advertisements. They range from commercials on T.V, billboards on roadsides, posters on walls as also brochures and pamphlets _____ on streets.

- A. confounded/distributing
- B. faced/distributive
- C. bombarded/distribution
- D. bombarded/distributed

Answer: Option D

Q5. 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: After refreshing himself with sleep and food, they set off briskly carrying his little ailing sister on the back

S-2:

S-3:

S-4: These thoughts pursued and tormented him throughout

Options

P: Holland, to him now did not seem very far off

Q: He was worried, though, about the safety of his mother who he had left behind

R: He did not know when he would finally return to her

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

Answer: Option D

Q6 to Q8: Read the following passage carefully:

“If we don’t laugh, we’ll cry” is a phrase that often rings true. That said, if I so much as hear “coronavirus” at bedtime, a good night’s sleep gets replaced with a lengthy late-night nap, as I’ll lay awake processing the scope of this massive tragedy into the wee hours. That’s why, in order to get some sleep and preserve what’s left of my mental health, I’ve decided to ban any form of entertainment but comedy past eight o’clock at night. And apparently, “I’m not alone”, says Vivian.

Scott Weems, cognitive neuroscientist and author of *Ha! The Science of When We Laugh and Why*, says the need to seek out humor during tragic times like these is a common coping mechanism. “It’s easy to go into a pretty negative rabbit hole with news and everything else,” he says. “There’s so much in the world that can make you laugh or cry, and it’s your choice which of those two to do.” There are moments when a craving for comedy can feel inappropriate and awkward, but Weems says there are both emotional and physical health benefits to laughing.

Q6. Based on your understanding of the passage answer the following questions by choosing the best option.

“Apparently, I’m not alone.” What does Vivian mean by this?

- A. She finds the comedy show so engaging that she forgets her fears.
- B. There are others too, who seek out humour like her.
- C. Her friends are with her and she watches the show.
- D. She is able to connect emotionally with the comedians.

Answer: Option B

Q7. The passage tries to analyse the

- A. Benefits of humour
- B. Fear caused by coronavirus
- C. Learning to laugh
- D. Craving for comedy

Answer: Option A

Q8. It's easy to go into a pretty negative rabbit hole with news and everything else.

In this statement, the expression 'negative rabbit hole implies

- A. A confused and bizarre state of mind
- B. A situation which opens up new avenues
- C. Dwell upon information and news
- D. A rabbit's burrow

Answer: Option A

Q9. The following sentence can be revised so that it reads better. Choose the sentence that is the best revision.

A team of Health inspectors are in the process of currently investigating the restaurant. It is likely that they may completely close it down in about 3 to 5 days

- A. A team of Health inspectors are in the process of currently investigating the restaurant. It is likely that they may completely close it down in about 3 to 5 days.
- B. A team of Health inspectors are currently investigating the restaurant and they may completely close it down in about 3 to 5 days.
- C. A team of Health inspectors investigating the restaurant. It is likely that they may completely close it down in about 3 to 5 days.
- D. A team of Health inspectors are currently investigating the restaurant and may close it down in about 3 to 5 days.

Answer: Option B

Reasoning Ability

Q1. Statement:

Pollution is damaging our earth securely and we need to realize its effects and prevent this damage.

Courses of Action:

- I. Government should control unnecessary human actions which damage the environment in many ways.
 - II. The Pollution Control Board should close down all industries in the residential areas.
 - III. Spread awareness among the masses to reduce and prevent pollution.
- A. Only I and II follow.
 - B. All I, II and III follow.
 - C. Only III follows
 - D. Only I follows

Answer: Option B

Q2. In a family of ten persons with three couples, each having two children, R and T are brothers and each has two children. P is the father of T and Q is mother of R. B is the brother of A, who is the cousin sister of C.

- A. Sister
- B. Brother
- C. Grandson
- D. Cousin

Answer: Option C

Q3. In a row, seven people are standing for march past.

- I. B is standing right to A and left to C.
- II. D is standing left to E but right to C.
- III. F is standing right to E and left to G.

Who is standing in the middle of the row?

- A. D
- B. Either B or G
- C. A
- D. Either C or E

Answer: Option A

Q4. The following are the criteria for selecting a school psychologist for a reputed school.

The candidates must:

- (i) be a Postgraduate in Psychology with more than 60% in the Postgraduate examination
- (ii) have Postgraduate diploma in Guidance and Counseling.
- (iii) have secured more than 65% in the interview and at least 60% in the written test.
- (iv) have at least 3 years of experience in the relevant area.

In case of the candidates who satisfies all other criteria except -

- (a) at (i), above, but has secured more than 65% in the written test as well as in the interview, his/her case is to be referred to the Management.
- (b) at (ii) and (iii) above, but has more than ten-year experience in relevant field, his/her case is to be referred to the Principal,

Dinesh has done his Master's degree in Psychology with 65% of marks. For the last 10 years, he has been working as a School psychologist/counselor written test.

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

- A. Could not be selected
- B. Refer to the management
- C. Could be selected
- D. Refer to the principal

Answer: Option D

Q5. Which is the wrong term in the following series?

dgf, fhx, iku, mor, rtl, xzf

- A. xzf
- B. iku
- C. dgf
- D. Mor

Answer: Option C

Q6. In a school, 30% of the boys are illiterate while 80% of the girls are literate. If the ratio of the boys to that of the girls is 2:3, then what %age of the students is literate?!

- A. 35 percent
- B. 27 percent
- C. 65 percent
- D. 76 percent

Answer: Option D

Q7. Deepika appeared in five subjects, P, Q, R, S and T in an examination. She has scored an average of 36 marks in all subjects. Her mark in subject S is 5 marks more than that in subject T while in subject T she scored 8 marks fewer than in P and in subject Q she scored as many as in subject S and T. She scored a total 107 in both subject Q and R. How many marks Deepika obtained in subject T?

- A. 30
- B. 52
- C. 65
- D. 20

Answer: Option D

Q8. Given below is a question followed by three statements, I, II and III, each containing some information. Decide which of the statement(s) is/are sufficient to answer the question.

How is A related to B?

Statements:

- I. A is husband of C.
- II. C has two children B and D.
- III. C is married to D's father A.

How is A related to B?

- A. Statement III alone is sufficient
- B. Either I and II or II and III together are sufficient
- C. Statement II alone is sufficient
- D. Statement I alone is sufficient

Answer: Option B

Q9. In a sports academy, T-shirts were to be equally distributed among 125 athletes. At this occasion, 35 athletes were absent and therefore each athlete got 4 t-shirts extra. How many t-shirts in total, were available for distribution?

- A. 3200
- B. 2800
- C. 2400
- D. 2900

Answer: Option B

Q10. 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, the transformation has been done the same way?

[A] RDXPQ - XDPRQ

[B] MUKHI - KUMIH

[C] GTRSK - RTGKS

[D] PKRHU - UPHRK

[E] MPQTJ - MTJQP

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

Answer: Option A

Programming Logic

Q1. The primary mission of an analyst or systems designer is to _____

- A. Extract the physical requirements of the user and convert them to the software
- B. Calculate the return on investment
- C. Create a data flow diagram
- D. Development of software evaluation tool

Answer: Option A

Q2. The statement `printf ("%d, 25 ? 5 ? 0 : 5 : 25);` will print

- A. 5
- B. Compile time error
- C. 0
- D. 25

Answer: Option C

Q3. When we execute the given code what will be the value of x and y?

```
1 #include<stdio.h>
2 #include<conio.h>
3 void swap (int &x, int &y)
4 {
5     int temp;
6     temp = x;
7     x = y;
8     x = temp;
9 }
10 int main()
11 {
12     int x = 10,y = 20;
13     swap(x,y);
14     cout<<x<<y;
15     return 0;
16 }
```

Enter your answer only as numeral

Answer: 1020

Q4. What will be the return value of fseek() function if error occurs?

- A. Any non zero value
- B. 0
- C. NULL
- D. 1

Answer: Option A

Q5. What will be the output of the following program?

```
1 public class Main
2 {
3     public static void main (String args[])
4     {
5         int i=1,j=1;
6         for( ;j<=i;System.out.println(i+"-"+j++));
7     }
8 }
```

Answer: 1-1

Q6. Integer m=10, n= 35, p=5, d=6

Comment about the output of the given two statements

Print $m*n + p/d$

Print $p/d + m*n$

- A. Differ by 10
- B. Same
- C. Differ by 20
- D. Differ due to left and right precedence

Answer: Option B

Q7. Which of the following is incorrect syntax for function declaration with default argument?

- A. `int foo(int x= 10, int y=20, int z=30);`
- B. `int foo(int x, int y=20, int z =30);`
- C. `int foo(int x, int y, int z =30);`
- D. `int foo(int x, int y=20, int z);`

Answer: Option B

Q8. When we implement stack by using linked list then:

- A. Insertion of node is done from end and deletion from end
- B. Insertion of node is done from beginning and deletion from end

- C. Insertion of node is done from beginning and deletion from beginning
- D. Insertion of node is done from end and deletion from beginning

Answer: Option C

Q9. What will be the output of the below code?

```
1 class Test1
2 {
3     private static int add(int a, int b)
4     {
5         System.out.println("Inside private method");
6         return a + b;
7     }
8     protected static int add(int a, int b, int c)
9     {
10        System.out.println("Inside protected method");
11        return a + b + c;
12    }
13 }
14 public class Main extends Test1
15 {
16     static int add(int a, int b, int c)
17     {
18         System.out.println("Inside static method");
19         return a + b + c;
20     }
21     public static void main(String[] args)
22     {
23         Main t = new Main();
24         System.out.println(t.add(10,20,20));
25     }
26 }
```

- A. Inside protected method
- B. Compilation error
- C. Run time error
- D. Inside static method

Answer: Option B

Q10. Match the followings:

Match functions usage C language		Output in float data type format	
A	ceil(3.6)	1	32.000000
B	floor(3.6)	2	3.000000
C	pow(2, 5)	3	12.000000
D	abs(-12)	4	25.000000
		5	4.000000
		6	0.000000

- A. A-5, B-2, C-4, D-3
- B. A-2, B-5, C-4, D-3
- C. A-5, B-2, C-1, D-6
- D. A-2, B-6, C-1, D-3

Answer: None of the mentioned options is correct. The correct answer is
A - 5, B - 2, C - 1, D - 3

Coding

Q1. One private Car Parking service CPS Offers service for cars to be parked in their area for specific duration. CPS don't allow car drivers to enter and choose location rather they hand over the keys and cars at the gate from where the staff takes cars into the parking zone where each car is parked at the next available position of last car parked and returns the key with CPS Tag to the Car Driver. If Parking slots are full, extra cars cannot be parked.

CPS maintains the record for each car placed at a particular slot with car plate number, so that when Owner comes to take his/her Car it will be easy to find the exact position of where the car has parked. For example, list of Car Plate Numbers can be as per Car's position in the CPS Parking area.

Write code for 2 functionalities as

1. The Park(String plateNumber) function which takes a plateNumber of newly entered Car and allocates a position in the list. That is adding Car to the parking area to the next position of the last Car parked.

2. The Search(String plateNumber) function should return

The Car Position as output for the given input is Car Plate Number.

Name Plate String can have minimum 6 and maximum 12 numbers of characters. Ignore decorating or separator characters.(Data Structure used to hold CPS car parking data must be initialized with following Car numbers for better output.) CPS = [MH04CC2,MH04C2820, MHO4BB3232, MH04CC2113, MHO4CC2878, MHO4BB8, MH04CC2888, MH04CC1313, MH04CC2222, MH04C1201, MH04CC555, MH04C6565, MHO4A7]

Input should be as follows:

1

MHCC2222

Note: 1 should be entered for car parking and 2 should be entered for car searching along with car plate number.

Output must be in format as follows:

- **"CAR PARKED AT POSITION:<number>"**, if option 1 is selected with valid car plate number as input
- **CAR POSITION:<number>"**, if option 2 is selected and valid car number is entered which is already present in CPS
- **"CAR DOES NOT EXISTS"**, if option 2 is selected and valid car number is entered which is not present in CPS **"INVALID INPUT"**, if option entered is other than the value 1 or 2 or if invalid car number is entered

Test case 1:

Case 1:

Example

INPUT VALUE:

2

MH04CC278

OUTPUT VALUE:

CAR POSITION: 5

Solution in Python:

```
1 CPS=["MH04CC2","MH04C2820","MH04BB3232","MH04CC2113",
2      "MH04CC2878","MH04BB8","MH04CC2888","MH04CC1313",
3      "MH04CC2222","MH04C1201","MH04CC555","MH04C6565",
4      "MH04A7"]
5 def Search(PlateNumber):
6     for pos,num in enumerate(CPS,1):
7         if(PlateNumber==num):
8             return pos
9     return -1
10 def Park(PlateNumber):
11     for pos,num in enumerate(CPS,1):
12         if(PlateNumber==num):
13             return (pos*2)
14     return -1
15
16 a=int(input())
17 if(a==1 or a==2):
18     number=input()
19     numlen=len(number)
20     if(numlen<6 or numlen>12):
21         print("INVALID INPUT")
22     elif(a==2):
23         pos=Search(number)
24         if pos>0:
25             print("CAR POSITION:",pos,sep="")
26         else:
27             print("CAR DOES NOT EXISTS")
28     elif(a==1):
29         pos=Park(number)
30         if(pos>0):
31             print("CAR POSITION:",pos,sep="")
32         else:
33             print("INVALID INPUT")
34 else:
35     print("INVALID INPUT")
```

Q2 . In one pass, Train A can start from source station at time Troj ,halt at each station for h unit of time until it reaches the last station at time T(n-1], where n is the positive Integer representing total number of stations.

Given, Train A's timings

T [0] = 10.00 T [1] = 10.04 T[2] = 10.09 T [3] = 10.15 T[4] = 10.19 T[5] = 10.22.

Now, suppose Railway Admin want to add more trains to increase the frequency. So, to launch other Train B, for the same stations as of Train A's. Provided the train B starts at time t, they would like to know the timings for train B.

The program should return a String array S (timestamps(in float) for train B at each station from first to last station like train A).

Note that time is represented in 24 Hour Fashion.

startHour should be in range 0... 23.

startMinute should be in range 0.... 59.

Enter start time(24 Hrs)

Example 1:

11.00

11.00 11.04 11.09 11.15 11.19 11.22

Example 2:

-26.15

INVALID INPUT

Note: Input and Output should be formatted as given in example.

For any wrong value input display "INVALID INPUT"

Solution in Python:

```
1 N = float(input())
2 M = str(N)
3 M = list(map(int,M.split(".")))
4 if(M[0]==10 and M[1]<=22):
5     print("INVALID INPUT")
6 elif(((M[0]>=0 and M[0]<=23) and (M[1]>=0 and M[1]<=59))):
7     print("{:.2f} {:.2f} {:.2f} {:.2f} {:.2f} {:.2f}".format
8           |(N,N+0.04,N+0.09,N+0.15,N+0.19,N+0.22))
9 else:
10    print("INVALID INPUT")
```

This document details the Slot Analysis as well as Answers to Questions that students recollected post their TCS NQT(Slot 1) on 25th 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

Verbal Ability:

- Reading Comprehension
- Passage Completion - Missing words (Cloze passage)
- Passage Completion - Missing sentences
- Error spotting
 - Phrasal verbs
 - Subject-Verb agreement
 - Pronoun-Antecedent agreement
- Sentence Completion
 - Phrasal verbs
 - Prepositions
 - Pronouns
- Knowledge of Formal/Informal language
- Sentence improvement
- Parajumbles

Reasoning Ability:

- Attention to detail
- Unboxing a cube
- Data Arrangements
- Coding and Decoding
- Cuts and unfolds

- Venn diagrams
- Blood relations
- Data Interpretation
- Visual reasoning
- Data sufficiency
- Syllogisms
- Statements and Assumptions
- Alphabet series

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
- Exception handling in JAVA

Coding:

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

Slot Analysis

- The assessment platform used was TCS iON.
- **Most of the questions in Numerical Ability did not have the correct answer in the options. In this case, please take the liberty to mark any option.**
- 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.
- A few questions from yesterday's test got repeated today
- 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.

Questions with Answers:

Numerical Ability

Q1. 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.50000
- B. Rs.49000
- C. Rs.47500
- D. Rs.50500

Answer: Option A

Q2. When the List Price (LP) of an article is fixed at 30% above the Cost Price (CP), and while selling the same, it is subject to a discount of x%, the profit percentage is 80% of that when the LP is fixed at 25% above the CP and the discount is 16%. What is the value of x?

- A. 3.6
- B. 3.25
- C. 3
- D. 3.84

All the answer options are wrong.

Correct Answer: 20

Q3. The ratio of the average speeds of two sprinters A and B is 8:7. In a racing track if B starts at a distance 2m ahead of A, at what distance (in metre) from the starting point of B would A catch up with B?

- A. 2.8
- B. 1.5
- C. 0.4
- D. 4.4

All the answer options are wrong.

Correct answer: 14

Q4. A sum invested in compound interest (CI) at a certain rate for three years earns the same interest as it would earn by way of an investment in simple interest (SI) at the rate of 18.2% for four years. How much more or less is the percentage rate in case of the CI than that in the case of the SI?

- A. 21.25
- B. 18.43
- C. 16.52
- D. 20.63

All the answer options are wrong.

Correct answer: +1.8%

Q5. With symbols having their usual meanings the mean of the data given below is 39.2.

x	36	40	35	44
f	10	13	12	

What is the missing frequency?

- A. 125.2
- B. 124.6
- C. 124.2
- D. 123.8

All the answer options are wrong.

Correct answer: 15

Q6. What is the fourth proportional of the mean proportionals between (4, 6.25); (0.0027, 300); (1.2×10^{-3} , 3)?

- A. 4.8
- B. 48
- C. 36
- D. 3.6

All the answer options are wrong.

Correct answer: 43.92

Q7. What is the mean Deviation from the median for the data given below?

Data: 34, 46, 28, 48

- A. 64
- B. 53
- C. 66
- D. 51

All the answer options are wrong.

Correct answer: 8

Q8. 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

Q9. 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

Q10. What is the difference between the Range and the Standard Deviation of all the natural numbers between 81 and 90, both inclusive?

- A. 7
- B. 11
- C. 9
- D. 8

All the answer options are wrong.

Correct answer: 7.13

Q11. What is the simplified value of:

$$\frac{1.782+1}{1.24} + \frac{1-0.343}{2.19}?$$

- A. 0.4
- B. 0.08
- C. 0.8
- D. 0.04

All the answer options are wrong.

Correct Answer: 2.54

Q12. The area of a sector, with central angle 15° , of a circle is 231 sq cm. If $\pi = 22/7$, what is the circumference (in cm) of the circle?

- A. 2.8
- B. 1.45
- C. 2.1
- D. 2.45

All the answer options are wrong.

Correct answer: 264

Q13. The total surface area of a solid hemisphere is 75 times the area of a circle whose diameter is 6 cm. What is the radius (in cm) of the hemisphere?

- A. 80π
- B. 120π
- C. 100π
- D. 50π

All the answer options are wrong.

Correct Answer: 15

Q14. A takes 10 days less than B to complete a work, and together they do it in 12 days. In how many days can B alone do the work?

- A. 9
- B. 12
- C. 10
- D. 6

All the answer options are wrong.

Correct Answer: 30 days

Q15. A shopkeeper calculated his profit as 12% with the selling price of an article as the base. What would have been his actual profit percentage if the selling price was 20% more?

- A. 20
- B. 24
- C. 23
- D. 21

All the answer options are wrong.

Correct Answer: 36.66%

Q16. The sum of ages of two friends is 74. After one year the ratio of their ages will be 9:10. What was the ratio of their ages nine years ago?

- A. 4:3
- B. 3:2
- C. 13:12
- D. 7:6

All the answer options are wrong.

Correct Answer: 13:15

Q17. The table below presents the data of atmospheric pressure (in area of mercury) at a place at four different times of the day during four days P, Q, R, S. A steady rise in atmospheric pressure indicates a fair weather. On which of the given days was the weather fair?

Time/Day	A	B	C	D
0600	742	765	754	761
1000	778	767	755	770
1400	762	745	757	775
1800	760	756	758	774
2200	768	752	760	762

- A. 324:283

- B. 81:73
- C. 326:293
- D. 28:25

All the answer options are wrong.

Correct answer: C

(Also please note that Days are marked as P, Q, R, S in the question but in the options it is given as A, B, C, D)

Q18. In case of frequency distribution for ten continuous classes, the class width is 4 and the lower class limit of the lowest class is 8. What is the upper class limit for the highest class?

- A. Both R&S
- B. R Only
- C. Neither R nor S
- D. S only

All the answer options are wrong.

Correct Answer: 48

Q19. What is the simplified value of:

$$\left(2\frac{3}{4} + 2\frac{1}{2} \text{ of } \frac{5}{2\frac{5}{7}} \frac{1\frac{2}{3}}{2\frac{1}{2}}\right) / \left(5\frac{1}{12} \times \frac{5}{19}\right)?$$

- A. 4
- B. 5
- C. 6
- D. 2

Answer: Option B

Q20. 10 men can complete a work in 8 days and 10 women take 12 days to complete the same work. How many days will 3 men and 6 women take to complete the same work?

- A. $11\frac{3}{7}$
- B. $9\frac{3}{7}$
- C. $10\frac{3}{7}$

D. $12\frac{3}{7}$

Answer: Option A

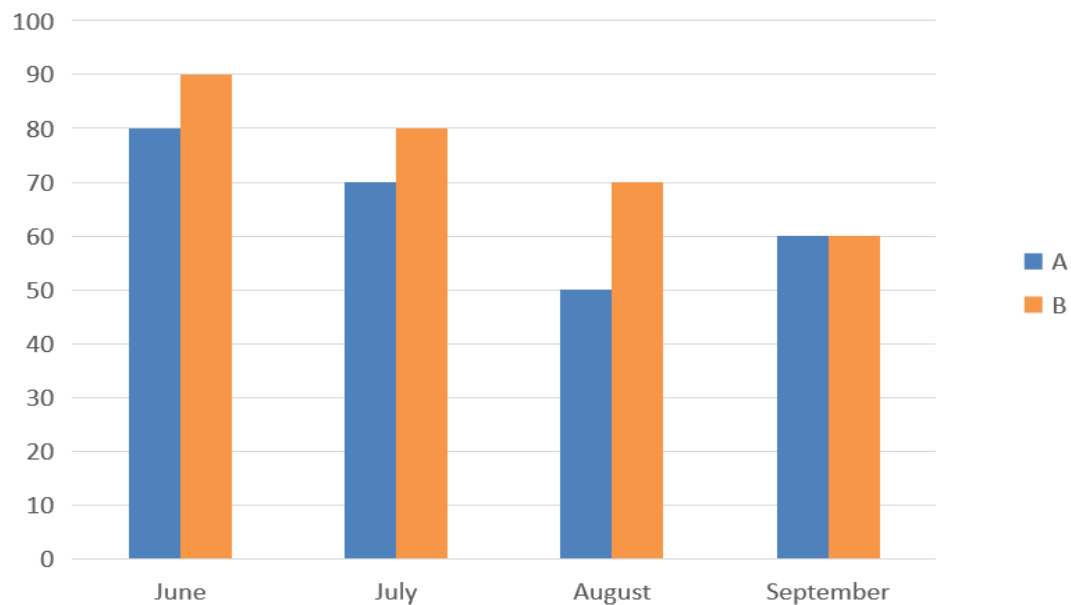
Q21. A retailer purchases several pens of same cost for Rs.384 and then sells some of them for Rs.114 at no loss or gain. What is the least possible number of pens that he will be left with?

- A. 9
- B. 7
- C. 8
- D. 3

All the answer options are wrong.

Correct answer: 45

Q22. The percentage marks scored by two students A and B at four consecutive monthly tests are depicted in the Bar Graph given below. In which month is the percentage marks scored by B 40% more than that by A?



A. 2014

- B. 2013
- C. 2012
- D. 2015

All the options are wrong

Correct Answer: August

Verbal Ability

Q1. 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: Gianni Crea, the head key-keeper of the vatican, is intimately familiar with the contours of history

S-2:

S-3:

S-4: They traverse a 4.6 mile route through the museums which see up to 28,000 visitors per day.

P. Almost every morning for the past 6 years he's opened the doors to the vatican museums.

Q. Crea and the team of 10-five each on the morning and evening shifts-open and close 300 doors everyday, mobilizing about 700 employees along with them.

R. Crea has worked in the Vatican for 20-years and as head key-keeper for six.

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

Answer: Option D

Q2 to Q3. Direction: Read the passage given below and answer questions:

When behavioral ecologist Liz Derryberry saw a news report of coyotes crossing the Golden Gate Bridge in March, she immediately thought of her birds. For over a decade, Derryberry has studied the white-crowned sparrow and how urban noise has disrupted and degraded the species' ability to communicate.

With most San Franciscans staying at home due to the coronavirus pandemic, she decided to seize an unprecedented opportunity to study how this small, scrappy songbird responded when human noises disappeared.

“I realized we gotta do this, and we gotta do this now,” she says.

By recording the species’ calls among the abandoned streets of the Bay Area in the following months, Derryberry and colleagues have revealed that the shutdown dramatically improved the birds’ calls, both in quality and efficiency. Male birds in particular rely on their songs to defend territory and find mates.

“The songs didn’t change as much as we predicted—they changed even more,” says Derryberry, of the University of Tennessee, Knoxville. “It highlights just how big of an effect noise pollution has.”

The research, published today in Science, is among the first to scientifically evaluate the effects of the pandemic on urban wildlife. It also adds to a burgeoning field of research into how the barrage of human-made noise has disrupted nature, from ships drowning out whale songs to automobile traffic jamming bat sonar.

Q2. What purpose do the calls of the birds serve?

- A. They help them locate other birds.
- B. They show them the direction during flight.
- C. They help the male secure their territory.
- D. They assist them in finding food.

Answer: Option C

Q3. The passage is primarily about the impact of the pandemic on _____.

- A. whales
- B. sparrows
- C. coyotes
- D. bats

Answer: Option B

Q4. The results of Derryberry and her companion’s research were unexpected because _____.

- A. The bird songs became louder and better when human noises reduced.

- B. The bird songs became fewer and less audible when fewer humans watched them.
- C. It revealed that birds did not change their songs or their other habits.
- D. It showed that birds migrated from their original homes due to the pandemic.

Answer: Option A

Q5. Which word does the writer use to describe the extent of research on normal pollution?

- A. Disrupted
- B. Improved
- C. Burgeoning
- D. Drowning

Answer: Option C

Q6 to Q9. Direction: Read the passage given below and answer questions:

Archaeology is based on the scientific method. Archaeologists ask questions and develop hypotheses. They use evidence to choose a dig site, then use scientific sampling techniques to select where on the site to dig. They observe, record, categorize, and interpret what they find. Then they share their results with other scientists and the public.

Underwater archaeologists study materials at the bottom of lakes, rivers, and oceans. Underwater archaeology encompasses any prehistoric and historic periods, and almost all sub-disciplines as archaeology. Artifacts and features are simply submerged.

Artifacts studied by underwater archaeologists could be the remains of a shipwreck. In 1985, National Geographic Explorer-in-Residence Dr. Robert Ballard helped locate the wreck of RMS Titanic, which sank in the North Atlantic Ocean in 1912, killing about 1,500 people. Ballard and other scientists used sonar to locate the wreck, which had been lost since the ocean liner sank. By exploring Titanic using remote-controlled cameras, Ballard and his crew discovered facts about the shipwreck (such as the fact the ship broke in two large pieces as it sank) as well as hundreds of artifacts, such as furniture, lighting fixtures, and children's toys.

Underwater archaeology includes more than just shipwrecks, however. Sites include hunt camps on the continental shelf of the Gulf of Mexico, and portions of the ancient city of Alexandria, Egypt, submerged due to earthquakes and sea level rise.

Q6. Which option gives the correct order of the process followed by archaeologists?

- A. Observe, apply evidence, record, dig a site, ask questions, interpret, share, categorize, develop hypotheses.
- B. Ask questions, develop hypotheses, apply evidence, dig a site, observe, record, categorize, interpret, share.
- C. Dig a site, interpret, ask questions, observe, apply evidence, categorize, share, develop hypotheses, record.
- D. Categorize, develop hypotheses, apply evidence, ask questions, record, dig a site, interpret, observe, share.

Answer: Option B

Q7. What significant information did Dr. Robert Ballard discover about the RMS Titanic?

- A. That the liner had broken into two while sinking.
- B. That 1500 people were on board the liner.
- C. That the ship had sunk in the North Atlantic ocean.
- D. That children's toys, furniture, and artifacts had also sunk with the ship.

Answer: Option A

Q8. Which of the following are underwater archaeologists most unlikely to find?

- A. Evidence of previous excavations
- B. Artifacts and prehistoric features.
- C. Portions of an ancient city.
- D. Remains of a shipwreck.

Answer: Option C

Q9. According to the passage, which was the research technology used by Underwater Archaeologists to get the most effective visual feedback of the artifacts?

- A. Remote controlled cameras
- B. Miniature submarines
- C. Sonar Technology
- D. Scuba diving teams with cameras

Answer: Option C

Q10. The following sentence 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 got lost at the fair and was scared.
- B. I went to fair and got scared as I was lost
- C. I am scared after I am lost at the fair
- D. I am lost at the fair so I am too scared

Answer: Option A

Q11. Which of the following sentences does NOT use informal language?

- A. I sincerely apologise for the oversight.
- B. Can we sort this out together?
- C. Thanks a lot for sharing this information.
- D. This is a high-priority account, take care!

Answer: Option A

Q12. For the four-sentence (S1 to S4) paragraph below, sentences S1 and S4 are given. From the options P, Q and R, choose the appropriate sentences for S2 and S3 respectively.

S-1: Finland's Helsinki Airport is using a unique method for screening arriving passengers for COVID-19 - specially-trained dogs that can detect the virus in humans - even before they show any symptoms

S-2:

S-3:

S-4: According to the press release: "The dog will perform its work in a separate booth so that the fear of spreading the infection is reduced."

P. Those taking the test will swipe their skin with a test wipe and drop it into a cup, which is then given to the dog.

Q. Upon arrival at the airport, passengers may be asked to volunteer for the program, and if they agree, are given a wipe to collect a sweat sample.

R. More dogs are currently being trained and should be available for the screening procedure in a few months.

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

D. QP

Answer: Option D

Q13. Select the most appropriate options to complete the sentence.

While MSMEs are waiting _____ the release _____ around Rs. five lakh crore pending payments, no major relief has come their way so far.

- A. to, with
- B. of, at
- C. for, of
- D. from, on

Answer: Option C

Q14. Select the most appropriate option to fill in the blank.

The security guard _____ leave ended two days ago has not yet reported to work.

- A. Whose
- B. Who
- C. Whom
- D. Which

Answer: Option A

Q15. One part of the sentence below may contain error. Identify the part. If there is no error, choose 'No error'.

Either Rahul or Rohit accompany their grandmother and grandfather whenever they go to the hospital

- A. Either Rahul or Rohit accompany
- B. their grandmother and grandfather
- C. No error
- D. whenever they go to the hospital

Answer options were wrong

Correct Answer: Option A and Option B

Q16. For the four-sentence (S1 to S4) paragraph below, sentences S1 and S4 are given. From the options P, Q and R, choose the appropriate sentences for S2 and S3 respectively.

S-1: COVID-19 spreads mainly among people who are in close contact (within about 6 feet) for a prolonged period.

S-2:

S-3:

S-4: Since people can spread the virus before they know they are sick, it is important to stay at least 6 feet away from others, when possible, even if you--or they--do not have any symptoms.

P. Social distancing is especially important for people who are at higher risk for severe illness from COVID-19.

Q. Spread happens when an infected person coughs, sneezes, or talks, and droplets from their mouth or nose are launched into the air and land in the mouths or noses of people nearby.

R. The droplets can also be inhaled into the lungs.

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

Answer: Option D

Q17. You are going to read a text about an interesting initiative. 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.

This year's Covid-19 pandemic has introduced a wide swath of Americans to the joys of gardens and gardening.(1)_____ American's Rose Center is seeking Volunteers to participate during its upcoming Volunteer Days from 8 a.m. to 3 p.m. on oct 23 and 24. (2)_____ Mask wearing and social distancing will be observed and a brown bag lunch will be provided to all who register.

- A. Volunteers are welcome to come and work in the garden any time during the two days

- B. The fresh air and other healthful benefits of outdoor exercise, together with the good feeling of accomplishing some useful have drawn many to begin gardening or increase activities in the garden.
 - C. After the tour, Volunteers will be guided through tasks by garden team leaders.
-
- A. 1-A,2-C
 - B. 1-C,2-A
 - C. 1-B,2-A
 - D. 1-C,2-B

Answer: Option C

Q18. 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. in Lauren's mind
- B. way he spoke
- C. stuck a bell
- D. Something about

Answer: Option D

Q19. The exotic remedies for some illnesses have been _____ from generation to generation in the tribe.

- A. Handed down
- B. Handed over
- C. Handed in
- D. Handed out

Answer: Option A

Q20. Complete the following sentence by filling in the blanks (1) and (2) with the right word from the list given below:

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

- 1.A. recycling B. recycle C. recycles D. recycled

2. A. Increased B. balanced C. counterbalanced D. encountered

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

Answer: Option C

Q21. You are going to read a text about fighting pollution. 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.

A team of scientists at the university of Portsmouth in England has developed a new enzyme that has the ability to break down plastics six times faster than standard enzymes; according to CNN (1) _____ in reducing the amount of non-biodegradable plastic on the earth. Enzymes have been used to help combat pollution by breaking polyethylene terephthalate(PET) chain molecules, the most common thermoplastic that makes up everyday items like single-use bottles, clothing and carpets.(2)_____. The first altered enzyme was called PETase, which will now be connected with MHETase to create the university's new enzyme protein. Between these two enzymes connecting, PET chains in plastic were found to breakdown twice as fast as PETase alone.

- A. The researchers who had earlier engineered an enzyme found within bacteria of plastic bottles, combined it with a second enzyme to accelerate the breakdown of plastics.
- B. A tool called the diamond light source was used to map the molecular structure of MHETase.
- C. Enzymes, proteins that are key components in chemical reactions within the human body, act as catalysts that speed up the breakdown of substances.

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

Answer: Option A

Q22. One part of the sentence below may contain an error. Identify the part. If there is no error, choose 'No error'.

Whatever she said in her defence was not taken seriously by the investigating authorities.

- A. was not taken seriously
- B. No error
- C. by the investigating authorities
- D. Whatever she said in her defence

Answer: Option D

Q23. As we scrutinize our own faces for wrinkles and flaws, we can fail to notice what a marvelous organ the face is. Our faces are the most (1) _____ part of our visible body, a mysterious mosaic of the physical and psychical. Faces are the body's workaholics. They confer and confirm identity, express emotion, communicate meaning, perform (2) _____ functions necessary for life and enable us to experience the world through our senses.

Blank 1: A. distinctive B. typical C. average D. classic

Blank 2: A. Plain B. basic C. needed D. compulsory

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

Answer: Option A

Q24. You are going to read a text about fighting pollution. 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.

Disney is an international maze of parent companies and subsidiaries that leave few corners of the globe untouched. It's vast holdings are a maze of media networks, film studios, production companies, merchandising ventures, parks, resorts, distribution operations, finance firms, gaming cooperation, publishing companies, construction firms, vacation and cruise lines, music studios, and digital content providers. (1) _____ However, the company's reach spreads further than many people might think--in movies and television alone. (2) _____ Forbes ranks Disney--which employs more than 2,00,000 people--among the top 10 most powerful brands in the world and values the company at more than \$238 billion.

- A. It is common knowledge that Disney is behind classics like “Beauty and the Beast” and “The Lion King”
- B. There’s also a seemingly endless web of companies, properties, holdings, and franchises that don’t bear the Disney name yet serve as revenue streams for the corporate empire just the same.
- C. Walt Disney World in Orlando, Florida re-opened the park in July with new safety precautions in place following months of being shut down amid the Coronavirus pandemic.
- A. (1)-A, (2)-B
- B. (1)-A, (2)-C
- C. (1)-C, (2)-A
- D. (1)-C, (2)-B

Answer: Option A

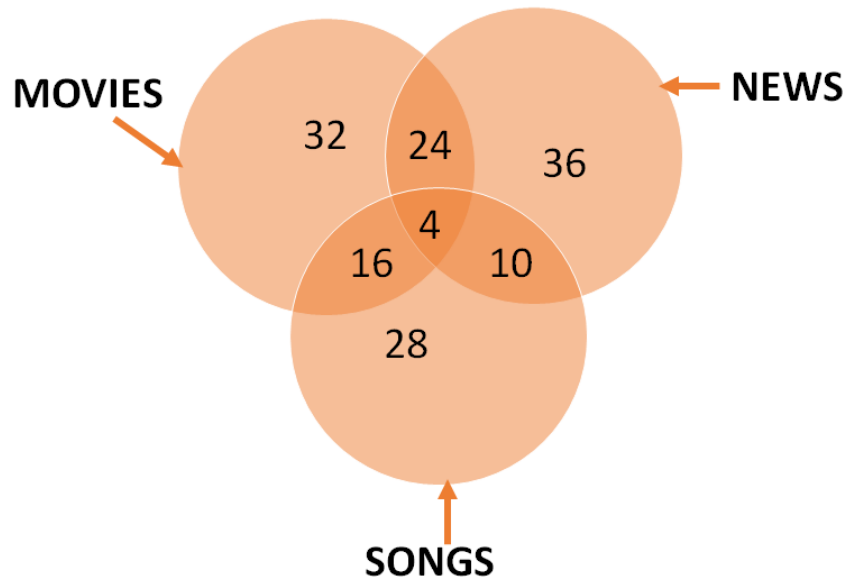
Reasoning Ability

Q1. 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?

1. WMHSD - DSHWM
 2. NPKRQ - PRKQN
 3. HQRWK - HKWQR
 4. ZIGPM - PTZGM
 5. BWTKG - GTKBW
- A. 4 and 2
- B. 1 and 5
- C. 2 and 3
- D. 1 and 3

Answer: Option B

Q2. Consider the Venn diagram given below.



The number in the Venn diagram indicates the number of persons/ people watching the TV programmes. The diagram is drawn after surveying 150 persons in a population of 12,000. How many persons/ people can be expected to watch at least two TV programmes?

- A. 4320
- B. 3200
- C. 5232
- D. 5400

Answer: Option A

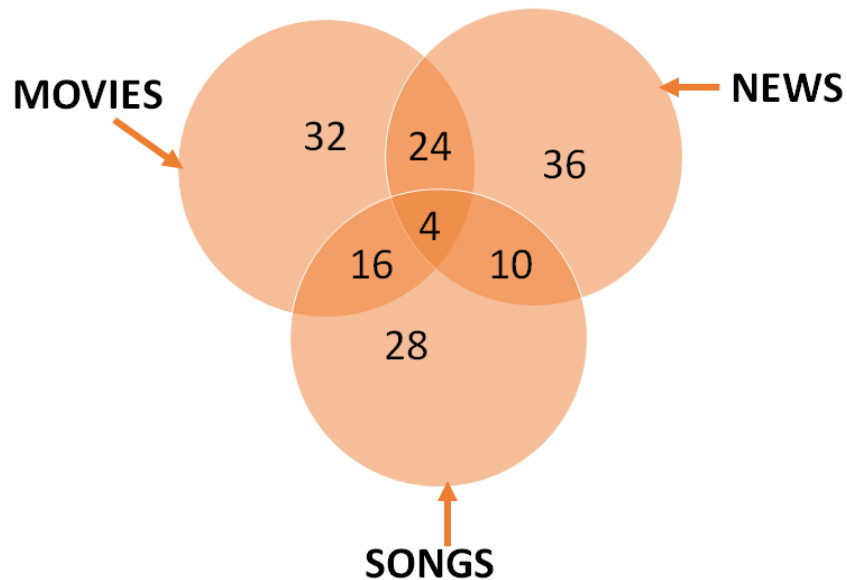
Q3. There are five persons in a family O,P,Q,R and S. They are working as a farmer, a teacher, a lawyer, an engineer and a doctor. P is an unmarried daughter of O and working as a teacher. S is the brother of Q, working as a lawyer. Q is the husband of the only married couple in the family. O is the father of an unmarried daughter and two sons working as a farmer. O's daughter-in-law is a doctor.

Which of the following are male members in the family?

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

Answer: Option C

Q4. Consider the Venn diagram given below.



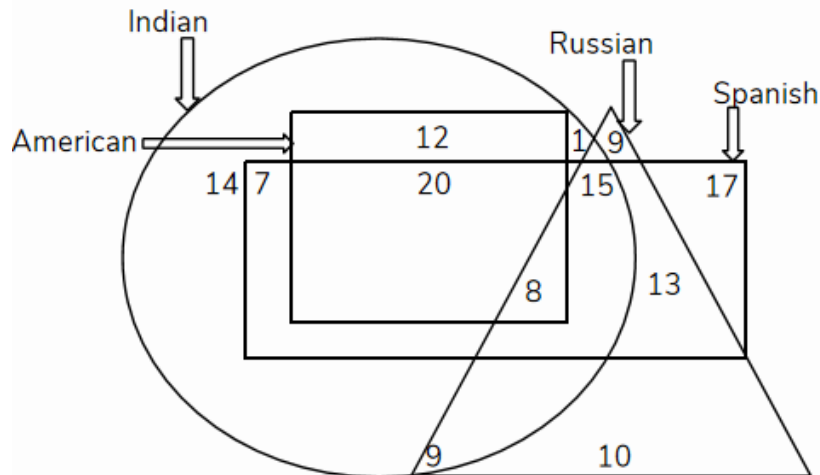
The number in the Venn diagram indicates the number of persons/ people watching the TV programmes. The diagram is drawn after surveying 150 persons in a population of 12,000. How many persons/ people can be expected to watch News only?

- A. 2280
- B. 3200
- C. 4320
- D. 2880

Answer: Option D

Q5. The following diagram shows the people who can speak various languages, the rectangle stand for 'Spanish'; the circle stand for 'Indian'; the triangle stands for 'Russian', and the square stands for 'American'. The numbers in different segments show the number of persons.

Answer the question on the basis of the information given in the diagram.



How many persons can speak American and Russian languages?

- A. 15
- B. 8
- C. 13
- D. 9

Answer: Option B

Q6. A statement is followed by three courses of action numbered I, II and III. Assuming everything in the statement to be true, decide which of the suggested courses of action (a decision to be taken for follow up/ improvement in regard to the problem) logically follow.

Statement

There is a considerable increase in the number of persons infected by Corona Virus during the last few months through person to person contact and direct contact with respiratory droplets exhaled by the infected person.

Courses of Action

- I. Wear a mask when social distancing is not possible.
- II. The Government should give adequate information through mass media regarding corona virus.
- III. Health Centres and Facilities should be increased and fully equipped properly for the treatment of patients.

- A. All are implicit
- B. Only I is implicit

- C. Both I and II are implicit
- D. Only II is implicit

Answer: Option A

Q7. Given below is a question followed by two statements I and II, each containing some information. Decide which of the statements is/are sufficient to answer the question.

The ratio of fees of two different schools is 2:2.5. What would be the fees of the second school if discounts of 25% and 35% are given on both the schools respectively?

Statements

- I. Discount on the second school fees is Rs.8750/-
- II. Difference between the discount on the two school fees is Rs.3750/-

- A. Both statements I and II together are not sufficient
- B. Statement I alone is sufficient
- C. Either Statement I alone or Statement II alone is sufficient
- D. Statement II alone is sufficient

Answer: Option C

Q8. The following are the criteria for selecting a candidate for the post of Assistant Manager. The candidates must:

- I. Be a graduate in engineering in specialization of Human Resource Management with minimum 55% marks.
- II. Have three years full time experience.
- III. Have secured more than 60% in the interview and at least 70% in the written test.

However, if the candidate fulfills the above criteria expect

In case of the applicant who satisfied all other criteria except -

- (i) At I, above, but has more than five-year experience in relevant field, his/ her case is to be referred to the Management.
- (ii) At II above, but has secured more than 65% in the written test as well as in the interview, his/ her case is to be referred to the General Manager.
- (iii) At II above, but has graduated in Engineering with specialization of Human Resource Management with minimum 65% marks, his/ her case is to be referred to the General Manager.

Amit has completed his BE with 60% marks without HRM specialization but he has been working as an assistant manager in a reputed company for the last six years. He has now secured 65% in the interview and 66% in the written test.

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

- A. He would be selected
- B. Refer to the HR department
- C. Refer to the General Manager
- D. Refer to the Management

Answer: Option B

Q9. 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.

Among six persons P,Q,R,S,T and U how many are teachers?

Statements:

- I. "Q and T are teachers" is true.
 - II. "At Least one of P and R is a teacher" is false and S and U's status is same as P and R
- A. Both the statements I and II together are needed
 - B. Statement II alone is sufficient
 - C. Statement I alone is sufficient
 - D. Both the statements I and II together are not sufficient

Answer: Option A

Q10. In a certain code, P + Q means P is the father of Q; P - Q means P is the sister of Q and P / Q means P is the brother of Q.

Which of the following equations shows that A is the uncle of D?

- A. $A - D + C / B$
- B. $A + B / C - D$
- C. $A / B + C - D$
- D. $A - B + C / D$

Answer: Option C

Q11. 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 is the age of Sumit?

Statements

- I. Sumit is five years younger than Amit, who is double the age of Prateek.
 - II. Prateek is 10 years elder than Ravi, whose age is 22 years.
-
- 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 the both the statements I and II are sufficient

Answer: Option D

Q12. Three statements are followed by four conclusions numbered I,II,III and IV. Assuming the statements to be true, even if they do not conform to real world knowledge,decide which of the conclusion(s) logically follows/follow from the statements.

Statements:

- 1. All clothes are shirts
- 2. All shirts are pants
- 3. All cots are pants

Conclusions:

- I. No cloth is cot
 - II. Some cots are shirts
 - III. Some pants are clothes
 - IV. Some cots are clothes
-
- A. Only either I or IV follow and III follow
 - B. Either II or I follow
 - C. Only II follow
 - D. Only III follow

Answer: Option D

Q13. A statement is followed by two assumptions numbered I and II. Consider the statement and decide which of the given assumption(s) is/are implicit in the statement.

Statement

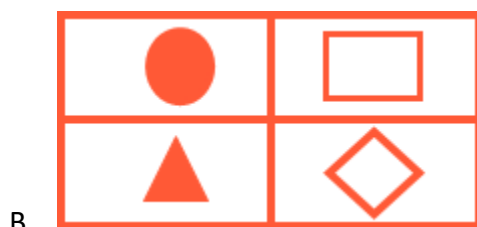
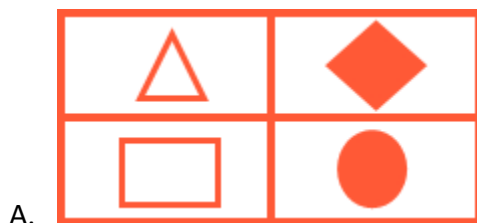
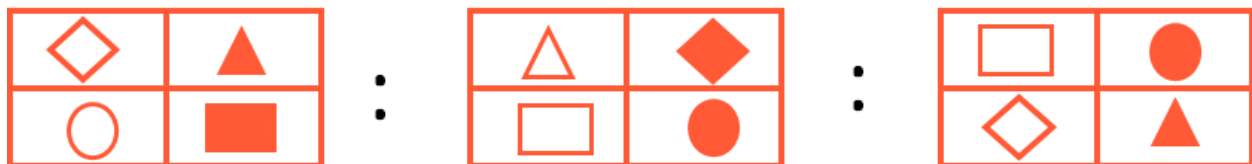
If you have any queries, ask to me

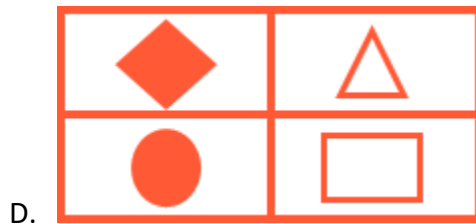
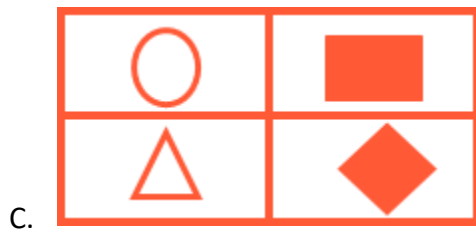
Assumptions

- I. You have no questions
- II. I can answer any question
- A. Both I and II are implicit
- B. Only I is implicit
- C. Only II is implicit
- D. Neither I nor II is implicit

Answer: Option D

Q14. The two figures on the left of the sign '::' are related in a certain way. The same relationship holds good for the second pair of figures on the right of the sign '::' of which one figure is missing. Find the missing figure from the alternatives?





Answer: Option C

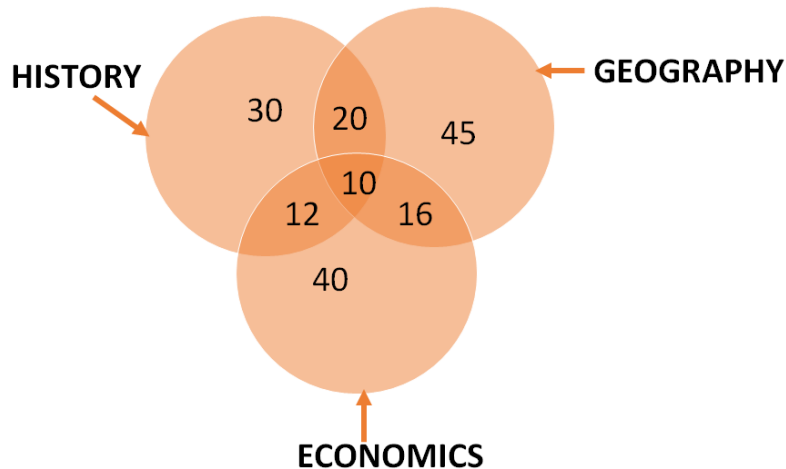
Q15. Which is the wrong term in the following series?

axc, cve, fsh, jpm, ojq, udw

- A. fsh
- B. udw
- C. ojq
- D. jpm

Answer: Option D

Q16. The diagram given below shows the number of students who got distinction in three subjects out of 320 students. Study the diagram carefully and answer the question.



What is the percentage of students who got distinction only in two subjects?

- A. 48
- B. 25
- C. 10
- D. 15

Answer: Option D

Q17. 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 conclusion logically follow(s)from the statements.

Statements:

All animals are plants
All plants are shrubs

Conclusions:

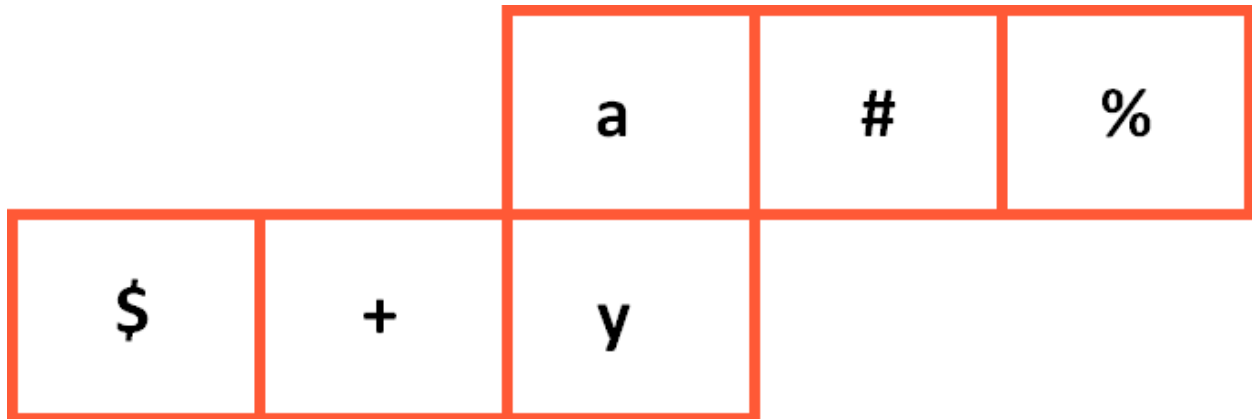
- I.Some shrubs are plants
- II.Some animals are not shrubs
- III.All animals are shrubs

- A. None of the conclusion follow
- B. Only conclusion I and II follow

- C. Only conclusion I and III follow
- D. Only conclusion II follows

Answer: Option C

Q18. 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

Q19. There is a certain code, a+b means a is the wife of b; a x b means a is the brother of b and a/b means a is the son of b.

If T/Z x U/W, then which of the following is true?

- A. W is the wife of Z
- B. U is the aunt of T
- C. U is the uncle of T
- D. T is the daughter of Z

Answer: Option C

Q20. The following are the criteria for selecting a candidate for the post of Assistant Manager.

The candidates must:

- (i) Be a graduate in engineering in specialization of Human Resource Management with minimum 55% marks.
- (ii) Have three years full time experience.
- (iii) Have secured more than 60% in the interview and at least 70% in the written test.

However, if the candidate fulfills the above criteria except

In case of the applicant who satisfies all other criteria except --

- a. At (i) above, but has more than five years experience in relevant field , his/ her case to be referred to the Management.
- b. At (ii) above, but has secured more than 65% in the written test as well as in the interview, his/ her case to be referred to the HR department.
- c. At (iii) above, but has graduate in Engineering with specialization of Human Resource Management with minimum 65% marks, his/ her case to be referred to the General Manager.

Naveen has completed his graduation in engineering with specialization of Human Resource Management with minimum 66% marks. For the last four years, he has been working as an assistant manager in a reputed organization. He has now secured 55% in the interview and 56% in the written test.

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

- A. Refer to the HR department
- B. He would be selected
- C. Refer to the General Manager
- D. Refer to the Management

Answer: Option C

Q21 to Q22. There are five persons in a family A,B,C,D and E. In which, one is working as a doctor; one is a lawyer and one is an engineer. Both A and D are unmarried ladies, who are not working. None of the ladies is working as a doctor and a lawyer in the family. E is the husband of the only one married couple in the family. B is the brother of C and neither a lawyer nor an engineer.

Q21. Who is the lawyer?

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

Answer: Option C

Q22. Who is the doctor in the family?

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

Answer: Option D

Q23. There are five persons in a family O,P,Q,R and S. They are working as a farmer, a teacher, a lawyer, an engineer and a doctor. P is an unmarried daughter of O and working as a teacher. S is the brother of Q, working as a lawyer. Q is the husband of the only married couple in the family. O is the father of an unmarried daughter and two sons working as a farmer. O's daughter-in-law is a doctor.

Who is an engineer in the family?

- A. S
- B. Q
- C. P
- D. O

Answer: Option A

Q24. A statement is followed by two assumptions numbered I and II. Consider the statement and decide which of the given assumption(s) is/ are implicit in the statement.

Statement

If he is a hard worker, he will succeed in life.

Assumptions

- I. To succeed, he must be a hard worker.
 - II. He will succeed in life.
-
- A. Only I is implicit
 - B. None of I and II are implicit
 - C. Only II is implicit
 - D. Both I and II are implicit

Answer: Option A

Programming Logic

Q1. Select the best suitable answer for the below functions.

- 1. sizeof()
 - 2. strlen
- A. sizeof() - Returns size of string including null characters
strlen() - Returns size of string excluding null characters
 - B. sizeof() - Returns size of string including null characters
strlen() - Returns size of string including null characters
 - C. sizeof() - Returns size of string excluding null characters
strlen() - Returns size of string excluding null, characters
 - D. sizeof() - Returns size of string excluding null characters
strlen() - Returns size of string including null characters

Answer: Option A

Q2. The data modelling phase consists of which of the following?

- A. Creation of evaluation tool
- B. Creation of big data analysis model
- C. Creation of infographics
- D. Creation of the logical data model.

Answer: Option D

Q3. Which of the following is NOT a logical operator?

- A. !
- B. &&
- C. ||
- D. &

Answer: Option D

Q4. In a Singly Circular Linked List, how many address fields are there?

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

Answer: Option C

Q5. What will be the output of the below code?

```
1 public class Main
2 {
3     int x = 10;
4     public static void main(String [] args)
5     {
6         try
7         {
8             Main t1 = new Main();
9             System.out.println(t1.x);
10        }
11        catch(Exception e)
12        {
13            System.out.println("Exception Caught");
14            return;
15        }
16    }
17    static
18    {
19        int x = 20;
20        System.out.println(x+" ");
21    }
22 }
```

Enter your answer ONLY as NUMERAL in the box.

Answer:

20

10

Q6. What will be the output of the given program?

```
1 void main()
2 {
3     char a[10][10] = {"kello", "hello", "fello"};
4     printf("%s", a[1]);
5 }
```

- A. Compile time error
- B. ellos hellos fellos
- C. ellos

D. hellos

Answer: Option D

Q7. When we compose a binary tree through the given preorder sequence, what will be left child of 6? (Note: Consider 4 as root node)

4, 2, 1, 3, 6, 5, 7

- A. 1
- B. 5
- C. 7
- D. 3

Answer: Option B

Q8. What will be the output of the following program?

```
1 public class Main
2 {
3     public static void main(String[] args)
4     {
5         try
6         {
7             int[] arr = {10,25,2,6,8,9,7,32};
8             for(int i=0; i<arr.length; i++)
9             {
10                System.out.print(arr[i+1]);
11            }
12        }
13        catch(Exception e)
14        {
15            System.out.println("Inside Exception");
16        }
17    }
18 }
```

Answer: 252689732Inside Exception

Q9. Based on below infix and postfix expressions, identify the Prefix expression.

Infix expression: $P-Q-(R+S)/(W-X)*Y+Z$

Postfix Expression: $PQRS+*WX-Y*/Z+$

- A. $-P/*Q+RS+*-WXYZ$
- B. $-P/*Q+RS+*W-XYZ$
- C. $P-/*Q+R+S*WXYZ-$
- D. $P-/*+RS+Q*-WXYZ-$

All the answer options are wrong.

Correct Answer: $-P-Q+/-RS*-WXYZ$. Best similar answer can be option A

Q10. What will be the output?

```
1 class car
2 {
3     public void Show()
4     {
5         System.out.println("Brand is not defined yet");
6     }
7 }
8 class mercedes extends car
9 {
10    public void Show()
11    {
12        System.out.println("It's mercedes");
13    }
14 }
15 class Benz extends mercedes
16 {
17 }
18 public class Main
19 {
20    public static void main(String[] args)
21    {
22        car obj=new Benz();
23        obj.Show();
24    }
25 }
```

- A. It's mercedes
- B. Run Time Error
- C. Compile Time Error
- D. Brand is not defined yet

Answer: Option A

Coding:

Q1. We want to estimate the cost of painting a property. Interior wall painting cost is Rs.18 per square feet and exterior wall painting cost is Rs.12 per square feet. Take input as

1. Number of Interior walls
2. Number of Exterior walls
3. Surface Area of each interior wall in units of square feet
4. Surface Area of each exterior wall in units of square feet

If a user enters zero as the number of walls then skip Surface area values as User may don't want to paint that wall. Calculate and display the total cost of painting the property.

Example 1:

6

3

12.3

15.2

12.3

15.2

12.3

15.2

10.10

10.10

10.00

Total estimated Cost:1847.4 INR

Note: Follow in input and output format as given in above example.

Solution in C:

```
1 #include<stdio.h>
2 int main()
3 {
4     int ni,ne,i=0;
5     float int_p=18,ext_p=12,fcost=0.0,temp;
6     scanf("%d %d",&ni,&ne);
7     for(i=0;i<ni;i++)
8     {
9         scanf("%f",&temp);
10        fcost+= int_p*temp;
11    }
12    for(i=0;i<ne;i++)
13    {
14        scanf("%f",&temp);
15        fcost+= ext_p*temp;
16    }
17    printf("Total estimated Cost : %.1f INR",fcost);
18    return 0;
19 }
```

Solution in C++:

```
1 #include<iostream>
2 using namespace std;
3 int main()
4 {
5     int interior,exterior,interior_cost=18,exterior_cost=12;
6     float face,fcost=0.0;
7     cin>>interior>>exterior;
8     for(int i=0;i<interior;i++)
9     {
10         cin>>face;
11         fcost+=interior_cost*face;
12     }
13     for(int i=0;i<exterior;i++)
14     {
15         cin>>face;
16         fcost+=exterior_cost*face;
17     }
18     printf("Total estimated Cost :%.1f INR",fcost);
19 }
```

Solution in Java:

```
1 import java.util.Scanner;
2 class Main
3 {
4     public static void main(String args[])
5     {
6         int interior,exterior,interior_cost=18,exterior_cost=12;
7         double face,fcost=0.0;
8         Scanner sc = new Scanner(System.in);
9         interior = sc.nextInt();
10        exterior = sc.nextInt();
11        for(int i=0;i<interior;i++)
12        {
13            face = sc.nextDouble();
14            fcost+=interior_cost*face;
15        }
16        for(int i=0;i<exterior;i++)
17        {
18            face = sc.nextDouble();
19            fcost+=exterior_cost*face;
20        }
21        System.out.printf("Total estimated Cost :%.1f INR",fcost);
22        sc.close();
23    }
24 }
```

Solution in Python:

```
1 fpi=18;fpe=12;cost=0;
2 ni=int(input())
3 ne=int(input())
4 if(ni<0 or ne<0 ):
5     print("INVALID INPUT")
6 elif(ni==0 and ne==0):
7     print("Total estimated Cost : 0.0 INR")
8 else:
9     for i in range(ni):
10         temp=float(input())
11         cost+= fpi*temp
12     for i in range(ne):
13         temp=float(input())
14         cost+= fpe*temp
15     print("Total estimated Cost : %.1f INR"%cost)
```

Q2. A City Bus is a Ring Route Bus which runs in circular fashion. That is, the Bus once started at Source Bus Stop, halts at each Bus Stop in its Route and at the end it reaches to Source Bus stop again. If there are n number of Stops and if bus starts at Bus Stop number 1, then after nth Bus Stop, the next stop in the Route will be Bus Stop number 1 always. If there are n stops, there will be n paths. One path connects 2 stops. Distances (in meters) for all paths in Ring Route is given in array Path[] as below. Path = [800, 600, 750, 900, 1400, 1200, 1100, 1500] Fare is determined based on the distance covered from source to destination stop as Distance d between Input Source and Destination Stops can be measured by looking at values in array Path[] and fare can be calculated as per following criteria: - If d = 1000 meters, then fare= 5 INR - (When calculating fare for other distances, the calculated fare containing any fraction value should be ceiled. For example, for distance 900, when fare initially calculated is 4.5 which must be ceiled to 5) Path is circular in function. Value at each index indicate distance till current stop from previous one. And each index positions can be mapped with values at same index in Busstops[] array, which is a string array holding abbreviation of names for all stops as "THANERAILWAYSTN"="TH", "GAONDEVI"="GA", "ICEFACTROY"="IC") "HARINIWASCIRCLE"="HA", "TEENHATHNAKA"="TE", "LUISWADI"="LU", "NITINCOMPANYJUNCTION"="NI", "CADBURRYJUNCTION"="CA"

Given, n=8, where n is number of total Bus Stops. Bus Stops=["TH", "GA", "IC", "HA", "TE", "LU", "NI", "CA"]. Write a code with function getFare(String Source, String Destination) which takes Input as source and destination stops(in the format containing first 2 characters of Name of the Busstop) and calculate and return travel fare.

Example 1:**Input Values**

ca

Ca

Output Values

INVALID INPUT

Example 2:**Input Values**

NI

HA

Output Values

23.0 INR

Note: Input and Output should be in format given in example.

Input should not be case sensitive and output should be in the format <FLOAT> INR.

Solution in C:

```
1 #include<stdio.h>
2 #include<string.h>
3 #include<math.h>
4 int main() {
5
6     char s[3],d[3];
7     scanf("%s%s",s,d);
8     char arrs[8][3] = {"TH" , "GA", "IC" , "HA" , "TE", "LU" , "NI","CA"};
9     float arr[8]={800,600,750,900,1400,1200,1100,1500};
10    float res=0;
11    int st ,ed;
12    for(int i=0;i<8;i++)
13    {
14        if(strcmp(s,arrs[i])==0)
15            st=i;
16        if(strcmp(d,arrs[i])==0)
17            ed=i;
18    }
19    if(st==ed)
20    {
21        printf("INVALID INPUT");
22        return 0;
23    }
24    else
25    {
26        int i=st+1;
27        while(i!=ed+1)
28        {
29            res += arr[i];
30            i=(i+1)%8;
31        }
32        res = (float) res / 200;
33        printf("%.1f INR",ceil(res));
34        return 0;
35    }
36 }
```


Solution in C++:

```
1 #include<bits/stdc++.h>
2 using namespace std;
3 int main()
4 {
5     string s , d;
6     cin>>s>>d;
7     string arrs[8] = {"TH" , "GA", "IC" , "HA" , "TE", "LU" ,"NI","CA"};
8     float arr[8]={800,600,750,900,1400,1200,1100,1500};
9     float res=0;
10    int st ,ed;
11    for(int i=0;i<8;i++)
12    {
13        if(s==arrs[i])
14            st=i;
15        if(d==arrs[i])
16            ed=i;
17    }
18    if(st==ed)
19    {
20        cout<<" INVALID INPUT";
21        return 0;
22    }
23    else
24    {
25        int i=st+1;
26        while(i!=ed+1)
27        {
28            res += arr[i];
29            i=(i+1)%8;
30        }
31        res = (float) res / 200;
32        printf("%.1f INR",ceil(res));
33        return 0;
34    }
35 }
```

Solution in Java:

```
1 import java.util.*;
2 class Main {
3     public static void main (String[] args) {
4         Scanner sc=new Scanner(System.in);
5         String s , d;
6         s=sc.nextLine();
7         d=sc.nextLine();
8         int n=8;
9         String arrs[] =new String[] {"TH" , "GA", "IC" , "HA" , "TE", "LU" ,"NI","CA"};
10        float arr[]=new float[] {800,600,750,900,1400,1200,1100,1500};
11        float res=0;
12        int st=0,ed=0;
13        for(int i=0;i<8;i++){
14            if(s.equals(arrs[i])){
15                st=i;
16            }
17            if(d.equals(arrs[i])){
18                ed=i;
19            }
20        }
21        if(st==ed)
22        {
23            System.out.println(" INVALID INPUT");
24            System.exit(0);
25        }
26        else
27        {
28            int i=st+1;
29            while(i!=ed+1)
30            {
31                res += arr[i];
32                i=(i+1)%8;
33            }
34            res = (float) res / 200;
35            System.out.printf("%.1f INR",Math.ceil(res));
36        }
37    }
38 }
```

Solution in Python:

```
1 def face(s,d):
2     path=[800,600,750,900,1400,1200,1100,1500]
3     stop=['TH','GA','IC','HA','TE','LU','NI','CA']
4     sum=0
5     res=0
6     if(s==d):
7         return "INVALID INPUT"
8     else:
9         s=s.upper()
10        d=d.upper()
11        mini=min(stop.index(s),stop.index(d))
12        maxi=max(stop.index(s),stop.index(d))
13
14        for i in range(mini,maxi+1):
15            sum=sum+path[i]
16
17        res=(sum/1000)*5
18        res=str(res)
19        return res+' INR '
20 s=input()
21 d=input()
22 print(face(s,d))
```