

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 D

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.

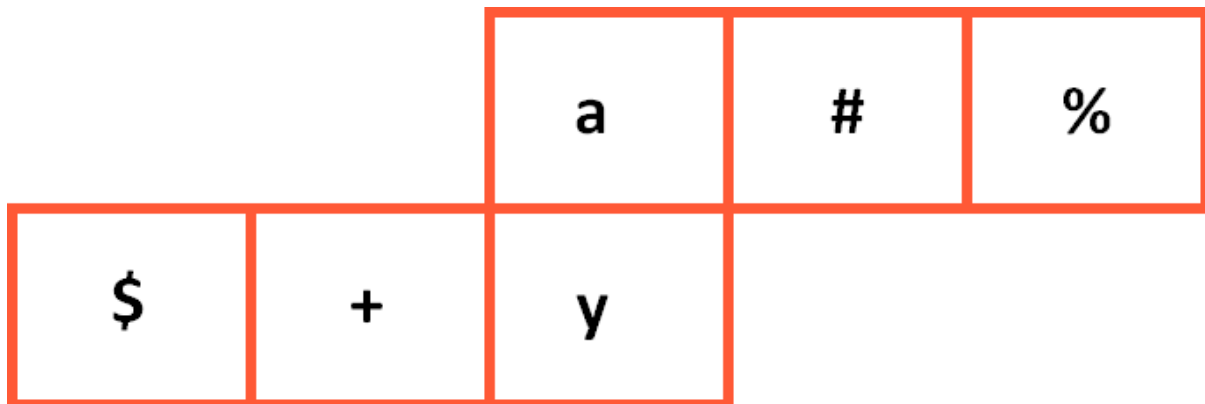
What is the percentage of students who taken subject P and Q but not subject R?

- 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 }
```