FACE Prep

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.

Contents

TCS NQT Online Test Pattern

The pattern that was followed for the TCS NQT was as follows.

Section Order	Section	# Qs	Duration (minutes)
1	Numerical Ability	26	40
2	Verbal Ability	24	30
3	Reasoning Ability	30	50
4	Programming Logic	10	15
5	Coding	2	45

Syllabus

The following was the syllabus which was tested in the slot.

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); $(1.2 \times 10^{-3}, 3)$?
   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 15^0, of a circle is 231 sq cm. If Π = 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:

$(2\frac{3}{4} + 2\frac{1}{2} \ of \ \frac{5}{2\frac{5}{7}} - \frac{1\frac{2}{3}}{2\frac{1}{2}}) / (5\frac{1}{12} \ X \ \frac{5}{19})$?

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?
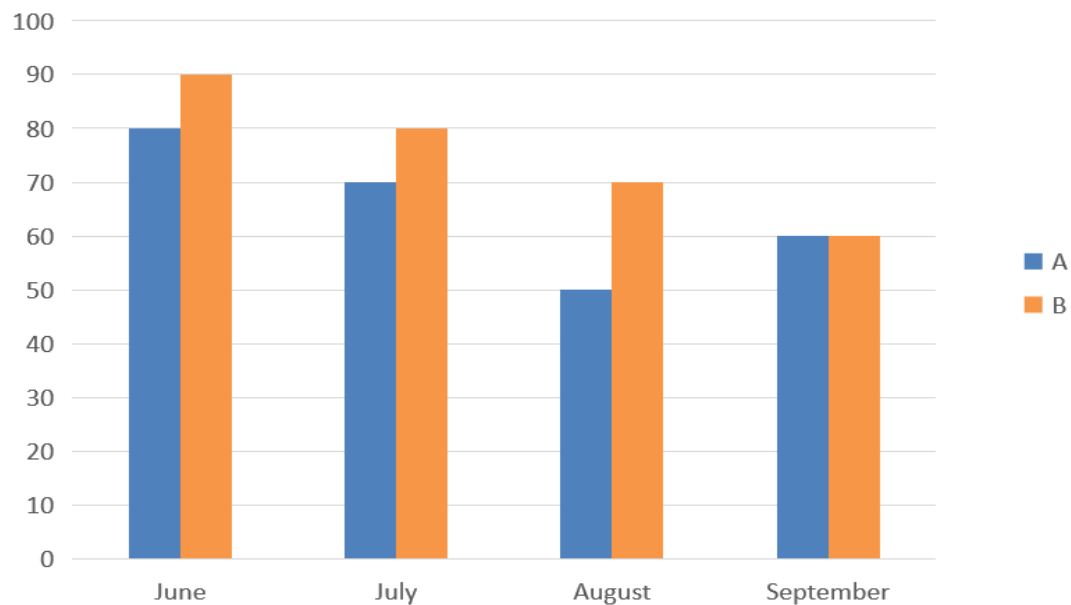
    A. 2014

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 linear 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.
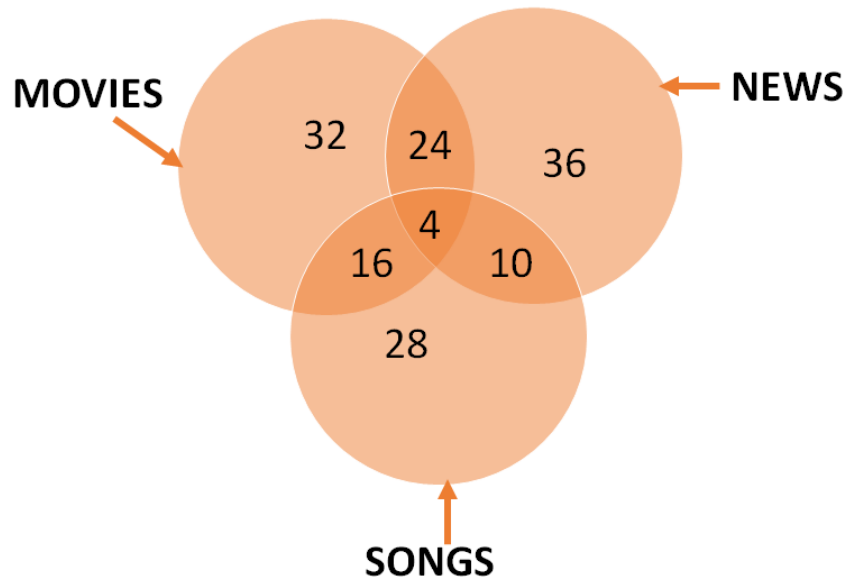
The number in the Venn diagram indicates the number of persons/ people watching the TV programmes. The diagram is drawn after surveying 150 persons in a population of 12,000. How many persons/ people can be expected to watch at least two TV programmes?

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.
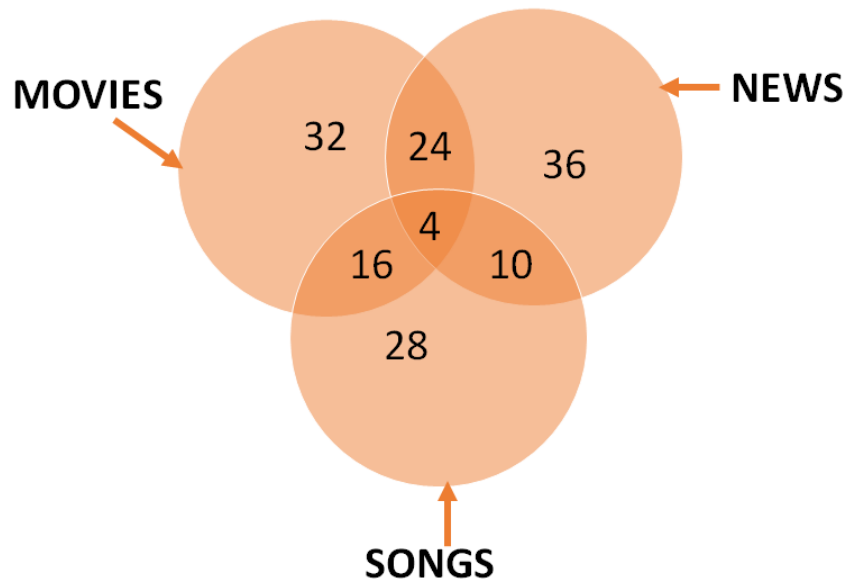
MOVIES

NEWS

32   24   36

4

16   10

28

SONGS

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.
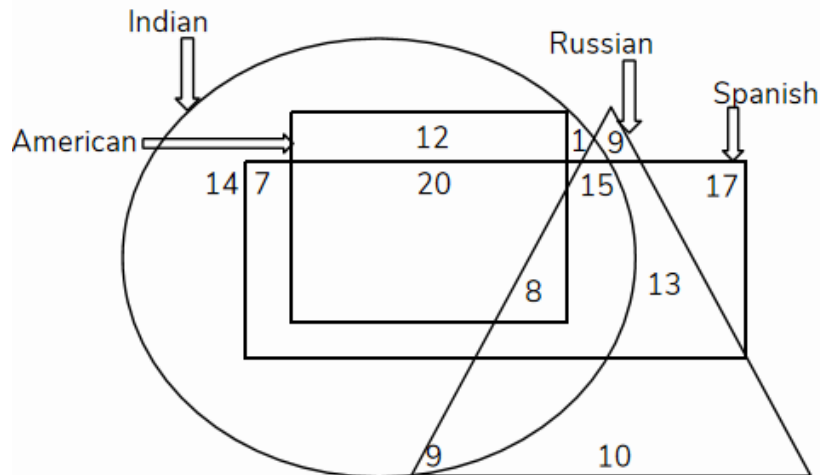
How many persons can speak American and Russian languages?

- 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 coe, 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?

A.

B.

C.

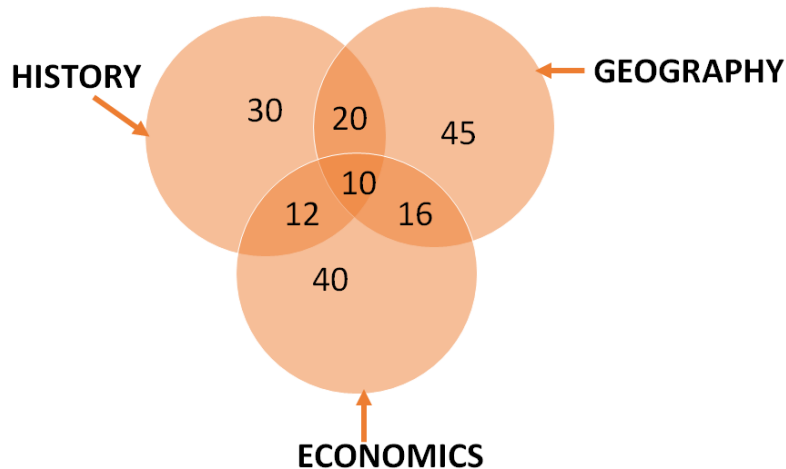

D.
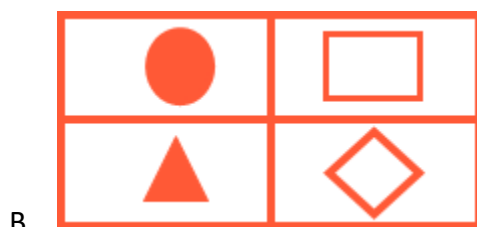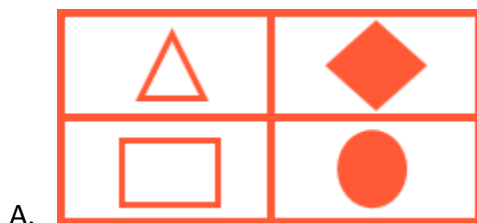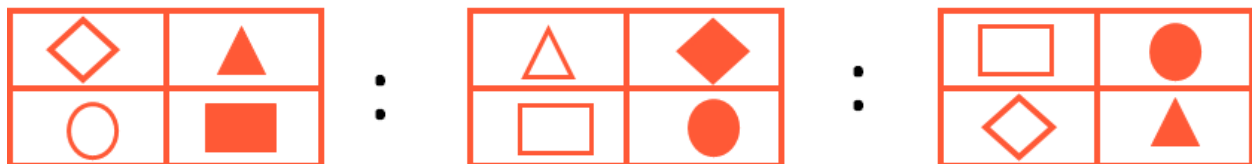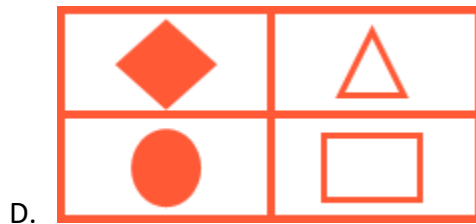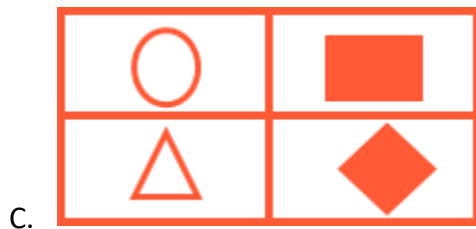
Answer: Option C

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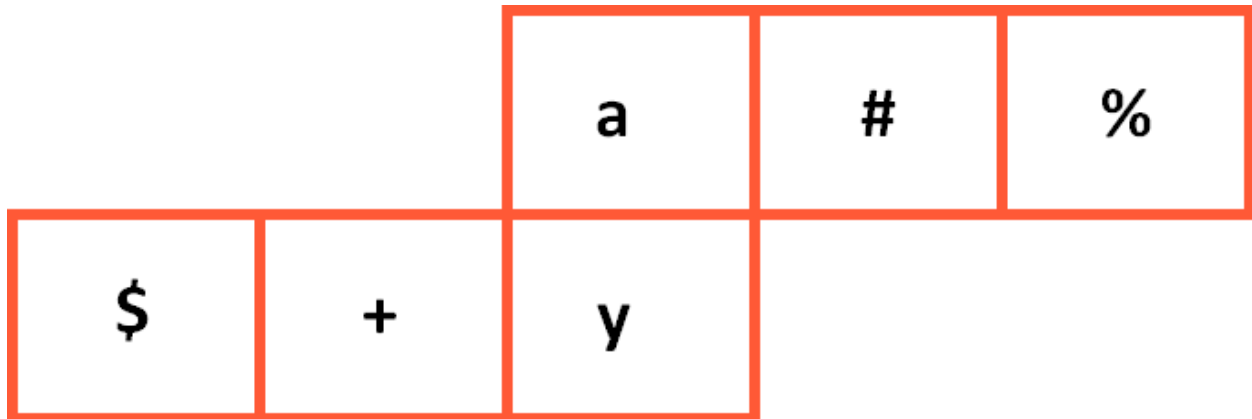
A. Y
B. a
C. +
D. $

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?

```java
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.println(x+" ");
  }
}
```

Enter your answer ONLY as NUMERAL in the box.

Answer:
20
10

Q6. What will be the output of the given program?

```c
void main()
{
  char a[10][10] = {"kellos", "hellos", "fellos"};
  printf("%s", a[1]);
}
```

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?

```java
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:

```c
#include<stdio.h>
int main()
{
    int ni,ne,i=0;
    float int_p=18,ext_p=12,fcost=0.0,temp;
    scanf("%d %d",&ni,&ne);
    for(i=0;i<ni;i++)
    {
        scanf("%f",&temp);
        fcost+= int_p*temp;
    }
    for(i=0;i<ne;i++)
    {
        scanf("%f",&temp);
        fcost+= ext_p*temp;
    }
    printf("Total estimated Cost : %.1f INR",fcost);
    return 0;
}
```

Solution in C++:

```cpp
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:

```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:

```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 number1 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", "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:

```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++:

```cpp
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:

```java
import java.util.*;
class Main {
  public static void main (String[] args) {
    Scanner sc=new Scanner(System.in);
    String s , d;
    s=sc.nextLine();
    d=sc.nextLine();
    int n=8;
    String arrs[] =new String[] {"TH" , "GA", "IC" , "HA" , "TE", "LU" ,"NI","CA"};
        float arr[]=new float[] {800,600,750,900,1400,1200,1100,1500};
        float res=0;
        int st=0,ed=0;
        for(int i=0;i<8;i++){
            if(s.equals(arrs[i])){
                st=i;
            }
            if(d.equals(arrs[i])){
                ed=i;
            }
        }
        if(st==ed)
        {
                System.out.println(" INVALID INPUT");
                System.exit(0);
        }
        else
        {
            int i=st+1;
            while(i!=ed+1)
            {
                res += arr[i];
                i=(i+1)%8;
            }
            res = (float) res / 200;
            System.out.printf("%.1f INR",Math.ceil(res));
        }
  }
}
```

Solution in Python:

```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))
```