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TCS NQT Solved MOCK Test

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Section 1: English

1) Choose the relevant meaning for the underlined word.

His expression was the most piteous.

a) Joyous
b) Kind
c) Anxious
d) Pathetic

Answer: D

2) Select the correct synonym for the underlined word from the options given below.

His request had been rejected as a battle seemed imminent and every officer was essential.

a) Important
b) Nearing
c) Avoidable
d) Immigrant

Answer: B

3) Fill in the blank with an appropriate variant of the primary helping verb given in brackets.

___ (be) I the only person who could help you now to complete the project?

a) Is
b) Am
c) Are
d) Was

Answer: B

Explanation: Clue word: 'I'
The subject is the first person singular in the interrogative.so, we have to use helping verb 'am' .

4) Complete the sentences. Use the phrasal verb, which means the same as the verb in brackets.

It would be great if you could _____ this Sunday. (visit me)

a) Come over
b) Came out
c) Come up
d) come across

Answer: A

5) Fill in the blanks with appropriate prepositions.

Their ship came _____ our ship.

a) close to
b) on
c) until
d) since
e) for

Answer: A

Explanation: The ship came close to our boat will be the correct statement. None of the other options fit perfectly in the blank.

Rearrange the following sentences into a coherent paragraph.

1) Mr D Gautam's personality sets him apart from the rest.
2) Nothing is too small for his attention
3) He has a fanatical devotion to detail.
4) This is what makes him a different guy.

6) Which sentence will follow the sentence 3 after rearrangement?

a) 1
b) 2
c) 4
d) None

Answer: B

Explanation: The paragraph should start with statement 1, which introduces the main noun ' Mr. Gautham' .
Statement 3 says' He has a fanatical devotion to detail.'. This is further explained in statement 2, which
says nothing or no detail is too small to be missed by him. Hence 32 link is established. The correct sequence is 1324.

7) After rearrangement which sentence will begin the paragraph?

a) 1
b) 2
c) 3
d) 4

Answer: A

Explanation: The paragraph should start with statement 1, which introduces the main noun ' Mr. Gautham' .
Statement 3 says' He has a fanatical devotion to detail.'. This is further explained in statement 2, which
says nothing or no detail is too small to be missed by him. Hence 32 link is established. The correct sequence is 1324.

Directions: Identify the error(s) in the following sentences.

8) After the detective examined the fingerprints / left at the scene of the crime, / he concluded that his prime suspect / committed the theft.

a) After the detective examined the fingerprints
b) left at the scene of the crime,
c) he concluded that his prime suspect
d) committed the theft

Answer: D

Explanation:
The key insight in this question is seeing that the crime occurred before the police investigated. you need to use the past perfect tense for the earlier action and the simple past tense for the more recent action. In this question, had committed is correct since the crime occurred before the police conducted
the investigation and reached their conclusion. Answer is D

9) Roberts Consultants, a large regional consulting firm /experiencing rapid growth,/recently indicated that they / would expand into new territory.

a) Roberts Consultants, a large regional consulting firm
b) experiencing rapid growth,
c) recently indicated that they
d) would expand into new territory

Answer: C

Explanation:
It is a Pronoun-Antecedent error. Since the sentence speaks about Robert consultants, the pronoun used should be It not they. Hence the error lies in part 3 of the sentence. So the answer is C

10) Rewrite the following sentences after changing the form of speech.

Bella said that she didn't have to pay for that outfit.

a) Bella said, "I don't have to pay for that outfit"
b) Bella said, "I didn't have to pay for that outfit"
c) Bella said, "I don't want to be paying for this outfit"
d) Bella said, "I don't have to pay for this outfit"

Answer: D
Explanation:
Given sentence is in the past tense. Thus, the sentence in direct speech must be in the present tense. The
indirect speech has "that", which is the result of the conversion of "this" to "that". So, indirect speech, 'this'
must have been there.

Direction: In the following passage, there are blanks each of which has been numbered. These numbers
are printed below the passage and against each four words have been suggested, one of which fills the
blanks appropriately.

BRICS leaders are gathered in the Russian town of Ufa for the bloc's annual summit, and Internet governance is high on their ___1___. The summit comes at a ____2____juncture in India's internet diplomacy. Last month in Buenos Aires, at a conference organised by the Internet Corporation for Assigned Names and Numbers (ICANN), IT minister Ravi Shankar Prasad offered an "Indian ___3____ for
the Internet". ICANN is the organisation that manages the Domain Name System, which serves as the
___4____ for all technical and commercial activity in cyberspace. In his recorded message, Mr. Prasad declared India would move away from state-led approaches to ___5____ the Internet, preferring instead a mechanism that co-opts the private sector and civil society into the policymaking process.

11) Find out the appropriate word for blank 1.

a) agenda
b) goal
c) aim
d) objective

Answer: A

Explanation:
Agenda means a list of items to be discussed at a formal meeting and as the context here is of a formal
meeting of world leaders, thus option A is the most appropriate response.

12) Choose the correct option for the blank 2.

a) trivial
b) crucial
c) acute
d) exiguous

Answer: B

Explanation:
Trivial means of little value or importance. Crucial means decisive or critical, especially in the success or
failure of something. Acute means (of an unpleasant or unwelcome situation or phenomenon) present or experienced to a severe or intense degree. Exiguous means very small in size or amount. The context
here is of a meeting between international leaders and hence it is most likely to make some big decisions. Out of the available options, only 'crucial' serves the context.

13) Choose the correct option for the blank 3.

a) objective
b) goal
c) sight
d) vision

Answer: D

Explanation:
'Compute' is rrelevant in accordance with the context of the passage. The conference being of international importance, it is highly unlikely that a minister will showcase Indian 'objective' or 'goal' as it would be highly narrow approach and would bring diplomatic pressure. 'Vision' is the only option that suits the
context.

14) Choose the correct option for the blank 4.

a) stability
b) anchor
c) harmony
d) backbone

Answer: D

Explanation:
Anchor means a person or thing which provides stability or confidence in an otherwise uncertain situation. Harmony means the state of being in agreement or concord. Posterity means the descendants
of a person. The context here is of showing the importance of domain name system in the technical activities and not show it being the stabilising feature, so 'backbone' will take precedence over 'anchor'.

15) Find the appropriate word for the blank 5.

a) altered
b) chaotic
c) unpredictable
d) bizarre

Answer: C

Explanation:
The monsoon patterns are best described as "unpredictable" because the change in climate results in "unpredictable" monsoon patterns. Hence choice 3 is most appropriate.

Section 2: Quantitative Aptitude

1) If a student walks from his house to school at 5 kmph, he is late by 30 minutes. However, if he walks at 6 kmph, he is late by 5 minutes only. The distance of his school from his house is :

a) 2.5 km
b) 3.6 km
c) 5.5 km
d) 12.5 km

Answer: D

Explanation:
Let the required distance be x km. Then, x5 – x6 = 2560 [Difference between two times is 25 min]

⇒ 12x – 10x = 25 ⇒ 2x = 25
⇒ x = 12.5 km

2) A man covers a certain distance on scooter. Had he moved 3 kmph faster, he would have taken 40 minutes less. If he had moved 2 kmph slower, he would have taken 40 minutes more. The distance (in km) is :

a) 20
b) 36
c) 37.5
d) 40

Answer: D

Explanation:
Let distance = x km and usual rate = y kmph.
Then,
(x/y) - (x/y+3) = 40/60 => 2y(y+3)=9x ....(i)
And,
(x/y-2) - (x/y) = 40/60 => y(y - 2) = 3x ....(ii)
On dividing (i) by (ii), we get: x = 40.

3) A sum of money is to be divided among P, Q and R in the ratio of 2 : 3 : 5. If the total share of P and R together is Rs 400 more than that of Q, what is R's share in it?

a) Rs. 100
b) Rs. 200
c) Rs. 300
d) Rs. 500

Answer: D

Explanation:
Let P = 2x ,
Q = 3x and R=5x.
Now P+R-Q = 400
2x+5x-3x = 400
hence x =1OO R = 5x = 500.

4) If -2=<x=<2 and 3<=y<=8, which of the following represents the range of all possible values of x-y?
a) 5<=y-x<=6
b) 1<=y-x<=5

c) 1<=y-x<=6
d) 1<=y-x<=10

Answer: D

Explanation:
-2 = x = {-2,-1,0,1,2}
3<=y<=8 => y={3,4,5,6,7,8}
y-x=(3+(-2)) to (8+2)
starting range of y+x to last range of y+x
i,e 1<=y-x<=10

5) A passenger jet took three hours to fly 1800 miles in the direction of the jet stream. The return trip against the jet stream took four hours. What was the jet's speed in still air and the jet stream's speed?

a) 600 mph, 100 mph
b) 525 mph, 75 mph
c) 575 mph, 25 mph
d) 450 mph, 125 mph

Answer: B

Explanation:
In each case, the distance equation will be "(the combined speed) times (the time at that speed) equals (the total distance travelled)"
With the jetstream: (p + w)(3) = 1800
Against the jetstream: (p – w)(4) = 1800
p + w = 600
p – w = 450
Then, by adding down, 2p = 1050 so p = 525, and w must then be 75.
The jet's speed was 525 mph and the jetstream wind speed was 75 mph.

6) The admission fee at a small fair is $1.50 for children and $4.00 for adults. On a certain day, 2200 people enter the fair and $5050 is collected. By fact, the number of children visiting the fair is higher than the number of adults visiting the fair by a margin of 900. Now, on that certain day given above, the number of children exceeded the adults by?

a) 700
b) 800
c) 900
d) 1000

Answer: B

Explanation:
Let adults be denoted as x
Let children be denoted as y
2200 people attend the fair
x + y = 2200 ------ (1)
Child admission fee is $1.50
Adult admission fee is $4.00
The total amount collected is $5050.00
4x + 1.5y = 5050 ------ (2)
solving the equations we get
y = 1500, x = 700
1500 children attended the fair
700 adults attended the fair.
Exceedance is 1500-700 = 800.

7) A schoolyard contains only bicycles and 4 wheeled wagons. On Tuesday, the total number of wheels in the schoolyard was 166. What could the possible number of bicycles?

a) 14
b) 10
c) 12
d) 11

Answer: D

Explanation:
Let no of bicycles=x and wagon=y
so,
2x+4y=166
= x+2y=83
as x and y should be integer.
x=odd no.
the only answer that satisfies the condition is 11.

8) 9 years ago, Andromeda's age was twice Achille's age. 9 years hence, Andromeda's age will be 4/3 times the age of Achilles'. Find Andromeda's present age in binary numbers.

a) 11011
b) 11000
c) 1001
d) 1010

Answer: A

Explanation: let A be the the age of andromeda's, B be the age of Achilles
9 YEARS AGO,

A-9=2(B-9)
A=2B-9
B= (A+9)/2 ----------(1)

9 YEARS HENCE,

A+9=4/3(B+9)
3A+27=4B+36
3A=4B+9 ----------(2)

Substitute (1) in (2).

3A = 4((A+9)/2)+9)
= 2A+9+18
3A =2A+27
A=27

THE BINARY NUMBER OF 27 IS 11011.

9) 21 people meet and shake hands. The maximum number of handshakes possible if there is to be no 'cycle' of handshakes is (A cycle of handshakes is a sequence of people a1, a2, ... , aK such that the pairs (a1, a2), (a2, a3),... , (a (k-1), ak), (ak, a1) shake hands)

a) 17
b) 18
c) 19
d) 20

Answer: D

Explanation:
If handshakes are taken in a random manner then max. handshakes = 21*20/2*1 = 210
If all the persons are there in a straight line then number of handshakes = 21-1 = 20

10) The ticket to Disneyland will cost anywhere from 1p to 63p. You need to produce the exact change at the ticket counter and have with you a 63p coin, So you decide to break this into change but you want to carry with you as few coins as possible. Assuming that coins of all denominations are available, how many coins (denominations) would you split the 63p into?

a) 33
b) 63
c) 6
d) 64

Answer: C

Explanation:
The coins (denominations) we want are- 1, 2, 4, 8, 16 and 32.
using 1 and 2 we can make 3, using 1,2 and 4 we can make all numbers up to 7 and so on...
so, 6 is the answer.

OR
Write the given number to binary form and count the number of ones.
63 can be written in binary as 111111.
Number of 1 is 6.
So, 6 is the answer.

11) Peter is twice as old as Paul was when Peter was as old as Paul is now. The combined age of Peter and Paul is 42 years. How old is Peter now?

a) 21
b) 18
c) 24
d) 26

Answer: C

Explanation:
Let Peter's age be x.
Paul(42-x). Peter was (42-x) before (x-(42-x))=(2x-42)years.
so that time Paul was ((42-x)-(2x-42))=(84-3x).
Now from question, we can say x=2(84-3x)
So x=24

12) There are two water tanks A and B, A is much smaller than B. While water fills at the rate of one litre every hour in A, it gets filled up like 10, 20, 40, 80, 160....., in-tank B. (At the end of first hour, B has 10 liters, second hour it has 20, and so on) If tank B is 1/16 filled after 17 hours, what is the total durations required to fill it completely?

a) 4 hours
b) 21 hours
c) 22 hours
d) 24 hours

Answer: B

Explanation:
For every hour, water in tank in B is doubled. Let the duration to fill the tank B is x hours. x/16 part of water in tank of B is filled in 17 hours, Next hour it is doubled so, 2*(x/16) part i.e (x/8) part is filled in 18 hours, Similarly (x/4)th part in 19 hours,(x/2)th part is filled in 20 hours, (x/)th part is filled in 21 hours, So answer is 21 hours.

13) The ratio of a two-digit natural number to a number formed by reversing its digits is 4 : 7. Which of the following is the sum of all the numbers of all such pairs? **(advanced aptitude question)**

a) 99
b) 198
c) 330
d) 132

Answer: A
Explanation:
Let the two digit number be 10a + b and the number formed by reversing its digits be 10b + a.
10a + b/10b + a= 4/7
70a + 7b = 40b + 4a
66a = 33b
Therefore,
a/b= 1/2
So, let us list down all possible values for a and b.
a b Number Reversed Number
1 2 12 21
2 4 24 42
3 6 36 63
4 8 48 84
Hence, the sum of all the numbers would be,
12 + 21 + 24 + 42 + 36 + 63 + 48 + 84 = 330.

14) When 40! is expressed in base 8 form, what is the last non–zero digit in the base 8 expansion? **(advanced aptitude question)**

a) 2
b) 6
c) 4
d) 2 or 6

Answer: C

Explanation:
We need to find the largest power of 8 that divides 40!.
We need to find the largest power of 2 that divides 40!
This is given by (40/2) and then successive division by 2. = 20 + 10 + 5 + 2 + 1 = 38
So, 238 divides 40! Or, (23)12 × 22 divides 40!
(23)12 divides the number, or the base 8 representation ends with 12 zeroes. Now, the base 8 representation of this number will be some (abcd...n)8 × (1000000000000)8. Now, (abcd...n)8 does not end in 0 and is a multiple of 22. The last digit has to be 4.
The last non–zero digit is 4

15) Consider a class of 40 students whose average weight is 40 kgs. m new students join this class whose average weight is n kgs. If it is known that m + n = 50, what is the maximum possible average weight of the class now? **(advanced aptitude question)**

a) 40.18
b) 40.56
c) 40.67
d) 40.49

Answer: B
Explanation:
If the overall average weight has to increase after the new people are added, the average weight of the new entrants has to be higher than 40.
So, n > 40
Consequently, m has to be < 10 (as n + m = 50)
Working with the “differences” approach, we know that the total additional weight added by “m” students would be (n - 40) each, above the already existing average of 40. m(n - 40) is the total extra additional weight added, which is shared amongst 40 + m students. So, m(n – 40) / (m + 40) has to be maximum for the overall average to be maximum.

At this point, use the trial and error approach (or else, go with the answer options) to arrive at the answer. The maximum average occurs when m = 5,and n = 45

And the average is 40 + (45 – 40) * (5 / 45)
= 40 + (5 / 9)
= 40.56 kgs

Section 3: Programming Concepts

1) The below program(sum.c) is run with two command line parameters mentioned below: What will be the output of the below program?

```
#include <stdio.h>
int main(int num, char * argv[])
{
   int sum;
   sum = argv[1] + argv[2];
   printf(&amp;quot;%d&amp;quot;, sum);
   return 0;
}
```

a) 3
b) Error
c) 1
d) Garbage value

Answer: B

Explanation: Here argv[1] and argv[2] char * type.

2) Which one of the following is an application of Queue Data Structure?

a) When a resource is shared among multiple consumers.
b) When data is transferred asynchronously (data not necessarily received at same rate as sent) between two
processes
c) Load Balancing
d) All of the above

Answer: D

Explanation: Queue is used when things don't have to be processed immediately, but have to be processed in First In First Out order like Breadth First Search. This property of Queue makes it also useful in above kind of scenarios.

3) The difference between procedural and object oriented Programming is

a) In Object Oriented Programming, the program is divided into functions and in Procedural oriented Programming, the program is divided into objects.
b) POP does not have any access specifier whereas OOP has access specifier
c) In OOP data can be accessed easily and in POP data cannot move to another function
d) There is no difference

Answer: B

Explanation: OOP has access specifiers such as private, public and protected

4) Which is correct with respect to the size of the datatypes?

a) char > int > float
b) int > char > float
c) char < int < double
d) double > char > int

Answer: C
Explanation: char has lesser bytes than int and int has lesser bytes than double in any system

5) Given an array arr = {5,6,77,88,99} and key = 88; How many iterations are done in binary search until the element is found?

a) 1
b) 3
c) 4
d) 2

Answer: D

Explanation: Iteration1 : mid = 77; Iteration2 : mid = 88;

6) What is the time complexity of the following code:

```
int a = 0;
for (i = 0; i < N; i++) {
    for (j = N; j > i; j--) {
        a = a + i + j;
    }
}
```

a) O(N)
b) O(N*log(N))
c) O(N * Sqrt(N))
d) $O(N^2)$

Answer: D

Explanation: The above code runs total no of times
= N + (N – 1) + (N – 2) + … 1 + 0
= N * (N + 1) / 2
= 1/2 * N^2 + 1/2 * N
O(N^2) times

7) Which of the following statements are correct about an array?

1: The array int num[26]; can store 26 elements.
2: The expression num[1] designates the very first element in the array.
3: It is necessary to initialize the array at the time of declaration.
4: The declaration num[SIZE] is allowed if SIZE is a macro.

a) 1
b) 1,4
c) 2,3
d) 2,4

Answer: B
Explanation:

- The array int num[26]; can store 26 elements. This statement is true.
- The expression num[1] designates the very first element in the array. This statement is false, because it designates the second element of the array.
- It is necessary to initialize the array at the time of declaration. This statement is false.

- The declaration num[SIZE] is allowed if SIZE is a macro. This statement is true, because the MACRO just replaces the symbol SIZE with given value. Hence the statements '1' and '4' are correct statements.

8) Consider a 13 element hash table for which f(key)=key mod 13 is used with integer keys. Assuming linear probing is used for collision resolution, at which location would the key 103 be inserted, if the keys 661, 182, 24 and 103 are inserted in that order? **(advanced programming concepts question)**

a) 0
b) 1
c) 11
d) 12

Answer: B
Explanation:
661 mod 13 = 11
182 mod 13 = 0
24 mod 13 = 11, already filled, so after linear probing it will get index 12
103 mod 13 = 12, already filled, so after linear probing it will get index 1

9) The height of a binary tree is the maximum number of edges in any root to leaf path. The maximum number of nodes in a binary tree of height h is: **(advanced programming concepts question)**

a) 2^(h) -1
b) 2^(h-1) – 1
c) 2^(h+1) -1
d) 2*(h+1)

Answer: C

Explanation: Maximum number of nodes will be there for a complete tree. Number of nodes in a complete tree of height h = 1 + 2 + 2^2 + 2*3 + ... 2^h = 2^(h+1) – 1

10) Which of the following tree traversal uses a queue data structure? **(advanced programming concepts question)**

a) Preorder
b) Inorder
c) Postorder
d) Level order

Answer: D

Explanation:
Level order traversal uses a queue data structure to visit the nodes level by level.

Section 4: Coding

1) Print the Words Ending with Letter S. This program takes a string as input and print the words ending with letter s.

Input:
this was mine

Output:
this
was

Solution:

```
#include <stdio.h>
#include <string.h>
char str[100];
void main()
{
int i, t, j, len;
scanf("%[^\n]s", str);
len = strlen(str);
str[len] = ' ';
for (t = 0, i = 0; i < strlen(str); i++)
{
if ((str[i] == ' ') && (str[i - 1] == 's'))
{
for (j = t; j < i; j++)
{
printf("%c", str[j]);
}
t = i + 1;
printf("\n");
}
else
{
if (str[i] == ' ')
{
t = i + 1;
}
}
}}}
```