NTS GAT General Past Paper

Analytical – Exam No. 05 (PP)

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A certain secure computer lab uses only the letters K, L, M, N and O as their computer codes. Words in the computer lab's code are written from left to right. Computer lab code words are only those words that conform to the following conditions:

The minimum length for computer lab's code word is two letters, not necessarily different from each other.

K cannot be the first letter in the word.

L must occur more than one in a word, if it occurs at all.

M cannot be the last letter in a word nor the next to the last letter.

N must occur in a word if K occurs in the word.

O cannot be the last letter in a word unless L occurs in the word.

Solution:

K L M N O

R1: Code ≥ 2, Not necessarily different

R2: K $\neq$ 1st

R3: L $\rightarrow$ (L $>$ 1)

R4: M $\neq$ Last, second last

R5: K $\rightarrow$ N

R6: L $\rightarrow$ (O $\neq$ Last)

Questions:

1. Which of the following letters could be placed after O in L O to form a computer lab's code word exactly three letters long?

(A) K

(B) L

(C) M

(D) N

(E) O

Solution:

Given that code is "L O", and we have to find the 3rd letter. R3 states that L must occur more than one in a word, if it occurs at all. As, it is also mentioned that it is an exactly three-word code, so 3rd letter will be L. Code will be "L O L". So, option B is correct.

2. If the only kinds of letters that are available are K, L and M, then the total number of different computer lab's code words, each exactly two letters long, that is possible to make is:

(A) 1

(B) 3

(C) 6

(D) 9

(E) 12

Solution:

We can make the following combinations: KK, LL, MM, KL, LK, KM, MK, LM and ML. Now we will check each of these codes one by one.

Code	True/False	Code	True/False
KK	R2 – False	KM	R2 – False
LL	True	MK	R4 – False
MM	R4 – False	LM	R4 – False
KL	R2 – False	ML	R4 – False
LK	R3 – False		

So, option A is correct.

3. Which of the following is a computer lab's code word?

(A) K, L, L, N

(B) L, O, M, L

(C) M, L, L, O

(D) N, M, K, O

(E) O, N, K, M

Solution:

Apply excluding rule:

R1 All okay.

R2 Option A is wrong.

R3 All okay.

R4 Option B and option E are wrong.

R5 All okay.

R6 Option C is wrong.

So, option D is correct.

4. What is the total number of different computer lab's code words exactly three identical letters long that is possible to make:

(A) 1

(B) 2

(C) 3

(D) 4

(E) 5

Solution:

We can make the following combinations: KKK, LLL, MMM, NNN and OOO. Now we will check each of these codes one by one.

Code	True/False	Code	True/False
KKK	R2 – False	NNN	True
LLL	True	OOO	True
MMM	R4 – False		

So, option C is correct.

5. The computer lab's code word M, M, L, L, O, K, N can be turned into computer lab's another code word by carrying out any one of the following changes except:

(A) Replacing every L with an N

(B) Replacing the first M with an O

(C) Replacing the N with an O

(D) Moving the O to the immediate left of the N

(E) Moving the second L to the immediate left of the K

Solution:

Given that code is "M, M, L, L, O, K, N", and we have to find the false option. Again, we will follow the excluding rule:

Options	M	M	L	L	O	K	N	True/False
Option (A)	M	M	N	N	O	K	N	True
Option (B)	O	M	L	L	O	K	N	True
Option (C)	M	M	L	L	O	K	O	False as R6
Option (D)	M	M	L	L	K	O	N	True
Option (E)	M	M	L	O	L	K	N	True

So, option C is correct.

6. Which of the following is not a computer lab's code word but could be turned into one by changing the orders of the letters within the word?

(A) K, L, M, N, O

(B) L, L, L, K, N

(C) M, K, N, O, N

(D) N, K, L, M, L

(E) O, M, M, L, L

Solution:

First of all, we will check which of the options present wrong code.

Option (A) Wrong code as R2

Option (B) True

Option (C) True

Option (D) Wrong code as R4

Option (E) True

Now we will change the orders of the letters in option (A) and Option (D):

Option (A)	O	N	M	L	K	Wrong code as R3
Option (D)	L	M	L	K	N	True

So, option D is correct.

7. Each of the following could be turned into a computer lab's code word by replacing the X with a letter used in the computer lab's code EXCEPT:

(A) M, K, X, N, O

(B) M, X, K, L, N

(C) X, M, M, K, O

(D) X, M, O, L, K

(E) X, O, K, L, L

Solution:

We will follow the excluding rule again.

Option (A) X can be replaced by K/M/N/O. Code is correct.

Option (B) X must be replaced by L as R3. Code is correct.

Option (C) X must be replaced by N as R5. Code is correct.

Option (D) X must be replaced by L as R3. Also, X must be replaced by N as R5. Anyone of these options is possible. So, it cannot be turned into correct code.

Option (E) X must be replaced by N as R5. Code is correct.

So, option D is correct.