SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Coded Inequalities

In each of the below-given statements, assume that the statements are true. Find which of the conclusion is/are definitely true.

Given answer based on the following options:
A. If only conclusion I is true.
B. Only conclusion II is true.
C. If either I or II is true.
D. Neither I nor II is true.

In the following questions, the symbols %, Δ, #, &, ¢ are used. All the symbols define the following meanings.

A % B means that 'A is smaller than B'
A Δ B means that 'A is less than or equal to B'
A # B means that 'A is equal to B'.
A & B means that 'A is greater than B'
A ¢ B means that 'A is either greater than or equal to B'.

1. A % B, C ¢ D, B # D.

Conclusion: I) B % C
II) B # C.

Ans: In this question, before solving anything, try and make a table of the meaning of the symbols given to you in the question. This will be better for you to decode the question and see whether the conclusions can be obtained or not.

Based on the question, the table can be formed as follows:

Symbols	%	Δ	#	&	¢
Meaning	$<$	$\leq$	$=$	$>$	$\geq$

Thus, using this table you can easily solve the given coded inequalities. First, we will start with the statement and de-code that part after moving on to the conclusion. From the statement, it can be delivered that, A < B, C ≥ D, B = D.

Now, for the conclusion part, in the first conclusion, it is given that B < C. From the statement we can determine that C ≤ B because B = D and C ≤ D. So the above conclusion can be obtained.

In the second conclusion it is given that, B = C, from the statement we can see that B = D and C ≥ D, so C > B or C = B. Thus the second conclusion can also be obtained. Thus, either conclusion I or II can be obtained. So the correct answer is C.

2. Statement: A % B, B # C, C ¢ D.

Conclusion: I) A & D
II) B Δ D

Ans: As done in the above question, we will start this question by solving statement first. From the statement, we can derive that A < B, B = C, C ≥D. Thus, for the first conclusion, A > D is given. C ≥ D => C > D or C = D. B = C is given so B = D. But A < B so A < D. So, the first conclusion cannot be obtained.

For the second conclusion, B ≤ D is given. Thus we need to determine that B < D and B = D. From the above statement we can determine that B = D, but we cannot determine that B < D. So, this conclusion cannot be obtained. Thus both the conclusions are untrue. So, the correct answer is D.

Practice Questions

In the following questions, the symbols @, CC, $, %, and # are used to illustrate the following meanings:

P $ Q means that 'P is not smaller than Q'
P # Q means 'P is not greater than Q'
P @ Q means that 'P is neither smaller than nor equal to Q'
P CC Q means that 'P is neither greater than nor equal to Q'
P % Q means 'P is neither greater than nor smaller than Q'

Now in each of the following questions, assuming the given statements to be true, find which of the three conclusions, I, II, III given below is/are definitely true.

1. Statement: H % J, J CC N, N @ R

Conclusion: 1. R % J 2. H @ J

A. Only I is true.   B. Only III is true

C. Only II and III are true   D. Only I and III are true

The correct answer is B.

2. Statements: M @ j, J $ T, T CC N

Conclusions: 1. N # J   2. T CC N

A. Only I and III are true   B. Only II is true

C. Only II and III are true   D. All I, II, and III are true

The correct answer is B.

3. Statements: X $ Y, Y @ Z, W % Y

Conclusion: 1. X $ W   2. Z # W

A. Only II is true   B. Only I is true

C. Only III is true   D. All I, II, and III are true

The correct answer is D.