DIFFERENT WAYS OF EXPRESSING CONDITIONAL STATEMENTS

INSTRUCTIONS: Where are the sufficient condition [S] and the necessary condition [N] located? Example: 1. If ____, then ____. Answer: If ___S___, then __N__.

NOTE (1) These expressions are not always used in the same way by everyone. (2) If an expression is not typically used to assert a conditional statement, then do not insert any letter, leave the expression blank.

2. ____ only if _____.
4. Whenever _____.
6. When ____, _____.
8. ____ provided that _____.
10. No ____, unless _____.
12. ____ is necessary for _____.
14. ____ is required for _____.
16. ____ is indispensable for _____.
18. ____ is needed for _____.
20. ____, is requisite for _____.
22. There must be _____.
24. ____, inescapably _____.
26. ____, inevitably _____.
28. Postulating _____.
30. Hypothesizing _____.
32. Presuming that _____.
34. ____ presupposes that _____.
36. In the case that _____.
38. ____ is enough for _____.
40. ____ is satisfactory for _____.
42. ____ is ample for _____.
44. As soon as _____.
46. Until ____, there’s no _____.
48. Without ____, there’s no _____.
50. In the event that _____.
52. ____, on the condition that _____.
54. only on the assumption that _____.
56. Granting that ____, _____.

What is the logic of the expressions “unless”, “without”, “otherwise”, “only”?

HINT: (a) Write a true statement using an expression (b) in which you clearly know which condition is sufficient, or which is necessary in that statement. (c) Use these conditions to translate you statement into a standard conditional statement.
ANSWERS
2. S only if N. 3. Each time S, N.
4. Whenever S, N. 5. Every time S, N.
6. When S, N. 7. S only when N.
8. N provided that S. 9. S only provided that N.
10. No S, unless N. [Nor fire unless oxygen] 11. Unless N, there’s no S. [Unless oxygen, no fire.]
12. N is necessary for S. 13. Supposing that S, N.
16. N is indispensable for S. 17. Assuming that S, N.
18. N is needed for S. 19. N assuming that S.
22. There must be N for S. 23. N, admitting that S.
24. ____ , inescapably ____. 25. Providing that S, N.
26. ____ , inevitably _____. 27. N, providing that S.
32. Presuming that S, N. 33. Venturing that S, N.
34. S presupposes that N. 35. Presupposing that S, N.
36. In the case that S, N . 37. In the event that S, N.
38. S is enough for N. 39. S is adequate for N.
40. S is satisfactory for N. 41. S is suitable for N.
42. S is ample for N. 43. S is plenty for N.
44. As soon as S, N. 45. Once S, N.
46. Until N, there’s no S. 47. No S, until N. [No fire until there’s oxygen.]
48. Without N, there’s no S. 49. No S without N. [No fire without oxygen.]
50. In the event that S, N. 51. ____ , On these terms, ____.
52. N on the condition that S 53. S only on the condition that N.
54. S only on the assumption that N. 55. On the condition that S, N.
56. Granting that S, N. 57. Granted that S, N.

Expressions 24, 26, and 51 function more as conclusion indicators: the propositions surrounding them do not constitute a conditional proposition.

For the following exercise, compare your examples to mine.

UNLESS/WITHOUT
(a) Unless you breathe, you die. Without breathing, you die. These are obviously true.
(b) The propositions in (a) are expressing: Not breathing is a sufficient condition for dying.
(c) If we express (b) in a standard conditional proposition: IF you do not breathe, THEN you die.
Note that in (a) there is no explicit negation, but (b) and (c) show that there is an implicit one.

(a) Unless there is some form of electricity, one cannot use an electric light bulb.
   Without some form of electricity, one cannot use an electric light bulb.
These two propositions are obviously true.
(b) The propositions in (a) are expressing: Not having some form of electricity is a sufficient condition for not being able to use an electric light bulb.
(c) If we express (b) in a standard conditional proposition: IF one does not have some form of electricity, THEN one will not be able to use an electric light bulb.

OTHERWISE
(a) Think correctly some of the time; otherwise you will die. [Assuming no one else will think correctly for you, and decide for you.] This is obviously true.
(b) The use of “otherwise” is expressing: Not thinking correctly some of the time is sufficient for [humans] to die.
(c) If we express (b) in a standard conditional proposition: IF you do not think correctly some of the time, you will die.
Note that in (a) there is no explicit negation, but (b) and (c) show that there is an implicit one.

(a) There has to be water; otherwise one will not be able to grow plants. [Assuming the plants of planet Earth.] This is obviously true.
(b) The use of “otherwise” is expressing: The absence of water (i.e., no water) is sufficient for not being able to grow plants.
(c) If we express (b) in a standard conditional proposition: IF there is no water, THEN one will not be able to grow plants.

ONLY
(a) (i) Only fruits are oranges. (ii) Only oranges are fruits.
Proposition (i) is true, but proposition (ii) is false.
(b) In (i) fruits are a necessary condition for oranges: In (ii) oranges are a necessary condition for fruits.
(c) Proposition (i) expressed in a standard conditional proposition:
IF something is an orange, THEN it’s a fruit, which is true.
Proposition (ii) expressed in a standard conditional proposition:
IF something is a fruit, THEN it is an orange, which is false.

ONLY IF
(a) There is music only if there is a medium for sound vibration to propagate. This is true.
(b) The proposition in (a) is expressing: The presence of a medium for sound to propagate is a necessary condition for music.
(c) If we express (b) in a standard conditional proposition: IF there is music, THEN there is a medium for sound vibration to propagate.