

# CHEM-GRAM PUZZLE No. 15

B O N D I N G

(Clues below marked with a \* pertain to this unit of work.)

## DIRECTIONS

In order to solve this puzzle you have to fill in the letters of as many words as you can in the spaces alongside the clues given below. When you have written in a word over the dashes, each letter is then moved to the box on the right which has the corresponding number and the clue's letter. When all the boxes have letters, you will have a complete scientific statement, principle, law or theory. The filled-in boxes indicate the ends of words; if there is no such box at the end of a line, the word continues on the next line. Guessing missing letters of incomplete words in the boxes will provide additional clues for unsolved words below.

			1	C	2	Q	3	B		4	K	5	E	6	V	7	O	8	F	9	S	10	L	11	U	12	R	13	Q	14	H	15	I		16	D					
17	E	18	C	19	L	20	K	21	S	22	V	23	Q	24	B	25	O		26	A	27	D		28	H	29	Q	30	U	31	K	32	F	33	I	34	S				
35	V	36	D			37	H	38	Q	39	L	40	B			41	O	42	J	43	C		44	I	45	U	46	V	47	D	48	K			49	H	50	T			
		51	Q	52	S	53	M	54	N			55	O	56	I	57	L	58	V	59	P	60	A		61	S	62	U	63	F	64	D	65	Q	66	K	67	I			
		68	E	69	L			70	J	71	N	72	V	73	M	74	H			75	Q	76	C	77	B	78	T	79	G	80	U	81	S	82	V	83	N				
84	C	85	A	86	O	87	K			88	H	89	L	90	Q	91	M			92	B	93	F	94	G	95	O	96	C			97	Q	98	A	99	S				
100	E	101	K	102	D	103	U	104	V	105	B	106	F	107	H	108	O			109	Q	110	S	111	L	112	K	113	M	114	C			115	Q	116	F	117	B		
118	T	119	E	120	I			121	L	122	R	123	S			124	U	125	D	126	Q	127	A	128	M	129	O	130	V			131	J	132	C			133	E		
134	D	135	F	136	L	137	N			138	P	139	S	140	Q	141	T	142	H	143	B																				

ANAGRAM DIRECTIONS. The numbers given here are for the solution letters (not the clue letters) in these numbered boxes. These letters form an anagram (a scrambled word or words) which, when unscrambled, gives either a title descriptive of the scientific statement or the name of the scientist responsible for it.

ANAGRAM NUMBERS 51 - 76 - 98 - 108 - 115 - 137 - 143  
 ANAGRAM LETTERS  
 ANAGRAM SOLUTION

## CLUES

- \* (A) NaCl bond type .....  
 \*\*\*\*\* 60 26 98 85 127
- (B) Building blocks for polymers .....  
 \*\*\*\*\* 40 92 143 24 77 3 117 105
- \* (C) Number of atoms in  $3(\text{NH}_4)_2\text{CO}_3$  .....  
 \*\*\*\*\* 132 76 96 18 114 1 84 43
- \* (D)  $\text{CaSO}_4$ ,  $\text{CO}_2$  and  $\text{CH}_3\text{OH}$  .....  
 \*\*\*\*\* 27 134 125 47 64 102 16 36
- (E) Acid whose anhydride is  $\text{NO}_2$  .....  
 \*\*\*\*\* 119 88 17 100 5 133
- (F) Indicator turned red by (E) .....  
 \*\*\*\*\* 8 106 32 135 116 63
- \* (G) Hydrogen iodide .....  
 \*\*\*\*\* 94 79
- (H) Gram weight of  $1/2$  mole of carbon monoxide .....  
 \*\*\*\*\* 37 142 14 74 49 88 28 107
- (I) Galactose and maltose .....  
 \*\*\*\*\* 67 56 120 44 33 15
- \* (J)  $(\text{NH}_4)_2\text{HPO}_4$  .....  
 \*\*\*\*\* 70 42 131
- (K) Compounds with the formula  $(\text{C}_6\text{H}_{10}\text{O}_5)_x$  .....  
 \*\*\*\*\* 48 66 20 112 31 87 101 4
- \* (L)  $\text{CO}_3^{-2}$  .....  
 \*\*\*\*\* 57 89 19 136 39 69 10 121 111
- \* (M) Number of valence electrons in xenon .....  
 \*\*\*\*\* 128 73 113 91 53
- (N) Electronegativities of F, O, and Cl .....  
 \*\*\*\*\* 54 137 83 71
- (O) Wolfram .....  
 \*\*\*\*\* 41 7 55 108 129 86 95 25
- \* (P)  $\text{C}_3\text{H}_8 + 6\text{H}_2\text{O} \longrightarrow 3\text{CO}_2 + ?\text{H}_2$  .....  
 \*\*\*\*\* 93 59 138
- \* (Q)  $\text{CoCl}_2$  or  $\text{CoCl}_3$  .....  
 \*\*\*\*\* 90 126 51 97 29 140 75 2 65 13 38  
 23 115 109
- (R) Symbol of highest ionization potential .....  
 \*\*\*\*\* 122 12
- \* (S) Covalent bond with only one donor .....  
 \*\*\*\*\* 21 52 34 61 99 81 110 139 9 123
- \* (T) Bismuth oxyiodide .....  
 \*\*\*\*\* 78 141 50 118
- (U)  $\text{C}_5\text{H}_{10}$  .....  
 \*\*\*\*\* 124 30 80 45 103 11 62
- \* (V) Atoms with 5-7 valence electrons .....  
 \*\*\*\*\* 35 46 82 6 72 22 104 58 130