A Periodic Table

GROUP SHELL	I	II	III	IV
1	1 H			
2	3 Li	4 Be	5 B	6 C
3	11 Na	12 Mg	13 Al	14 Si
4	19 K	20 Ca	21 Sc	22 Ti
4	29 Cu	30 Zn	31 Ga	32 Ge
5	37 Rb	38 Sr	39 Y	40 Zr
5	47 Ag	48 Cd	49 In	50 Sn
6	55 Cs	56 Ba	57 La 58-71	72 Hf
6	79 Au	80 Hg	81 Tl	82 Pb
7	87 Fa	88 Ra	89 Ac 90-103	

6	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb
7	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk

of the Elements

V	VI	VII	VIII	(o)
				2 He
7 N	8 O	9 F		10 Ne
15 P	16 S	17 Cl		18 A
23 V 33 As	24 Cr 34 Se	25 Mn 35 Br	26 Fe 27 Co 28 Ni	36 Kr
41 Cb 51 Sb	42 Mo 52 Te	43 Tc 53 I	44 Ru 45 Rh 46 Pd	54 Xe
73 Ta 83 Bi	74 W 84 Po	75 Re 85 At	76 Os 77 Ir 78 Pt	86 Rn

66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
98 Cf	99 Es	100Fm	101 Md	102 No	103 Lw

PHYSICS

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2ND EDITION

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Macmillan Education

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Preface to the Second Edition

This textbook covers the major branches of physics at a level suitable to an introductory course for University students in Science and Engineering. The order in which material is covered can be altered considerably at the discretion of the instructor, with the exceptions that an appreciable familiarity with mechanics is assumed in all later work, and that the discussion of wave motion in sound should precede the study of light. All three authors have taken part in the extensive re-writing of the earlier PHYSICS. We found four notable reasons for revisions.

There have been drastic changes in the mathematics studied before and after entrance to university for engineering or science. For students in these fields, calculus in first-year university is now almost universal. In the book, therefore, the ideas, notation and language of calculus are used from the start. In the first half of the text, a carefully helpful attitude is adopted to students new to differentiation and integration, and graphical treatments are emphasized. In the latter part of the text, particularly in electricity, the techniques of calculus are applied freely.

Technology is changing rapidly and dramatically. As a result, statements about technological applications of physics seem to date as rapidly as yesterday's newspaper. Forecasts made a decade ago are merely amusing now. An awareness of technology is maintained in the present book, but less space is devoted to it.

Scientific discoveries are also being made at a phenomenal rate. Little of the science we described in the first edition is obsolete, but much that is new has been incorporated, particularly in the section of the book on atomic physics – in the broad sense. Hyperons and Van Allen belts, unknown before, now merit mention in an introductory textbook. So we mention them, realizing that another decade of discovery will reveal some misconceptions among our insights.

Teaching is changing, too. Lecturers are being freed from the implication that they must interpret the text in every detail. Student schedules are allowing enough time for study that the direct interaction between student

and textbook can be significant. We hope that with this book such interaction will provide a maximum of enlightenment and a minimum of misunderstanding.

J. S. MARSHALL
E. R. POUNDER
R. W. STEWART

July 1, 1967
Montreal and Vancouver, Canada

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