Taylor & Francis, 1971. 310 pp. £5.50

This book is intended for the graduate who, coming into contact with integrated circuits, wishes to become more acquainted with their operation, design, manufacture and use. Much of the content of this book would also be of use to the undergraduate, both for gaining an idea of the principles involved and as background material.

The title of the book is somewhat misleading, as no mention is made of thin- or thick-film microcircuits. However, the field of monolithic integrated circuits is dealt with in some depth.

The scope of the book is quite wide, starting with the basic physics of semiconductors relating to their applications, and the techniques used in the construction of a circuit chip. Mention is made of a number of newer processes such as ion implantation, Schottky and m.o.s. structures. It is then shown how manufacturers make the circuits, mount and encapsulate them. A number of practical examples are given of the processes used.

I feel that the chapter on testing could have been expanded slightly to include such topics as reliability assessment and accelerated life testing which are becoming increasingly important. Other aspects of testing, however, are quite well covered, including the use of computers.

Especially welcome in a book of this sort, the last few chapters deal with some of the more practical applications of both logic and linear circuits which are available in integrated form. Discussed are the design of the basic circuit types available and the factors which must be taken into account before choosing any particular family of circuits for an application. Some of the problems encountered with interconnecting and interfacing these devices are demonstrated, and the factors which must be taken into account to avoid trouble are considered.

In conclusion, this book has succeeded quite well in covering such a wide field in sufficient depth. Quite a number of suggestions for further reading are given for those wishing to pursue a certain topic in greater depth, and the book should be of use to a great many engineers.

J. R. A. Beale, E. T. Emms and R. A. Hilbourne

'So you want to be a manager?' by Elton T. Reeves
American Management Association, 1971. 338 pp. £4.50

The book is directed primarily at the 1st-line supervisor and is aimed at helping him to do self-analysis, asking himself how he and why he became a supervisor in the first place and helping him try to relate himself to his organisation and decide whether he really wants further promotion, and if so how he can help himself achieve that objective.

The chapter titles are searching questions such as 'How do you manage other managers?' and 'What evidence do you manage other managers?'. The chapters themselves really keep the reader interested in their searching, querying style, and contribute a vast amount of comment which demonstrates that the author has a real understanding of people and their reactions to changing conditions in the working situation.

It makes worthwhile reading by those at 1st-line-supervisor level and to those more senior in the hierarchy. It is to be recommended to students in particular, since it will give him his first introduction to any career. The book is printed in a handy size with semislit cover. It forms the third book in a 'So-you-want-to-be' series, the earlier two being 'Supervisor' and 'Executive'.

J. R. A. Beale, E. T. Emms and R. A. Hilbourne

Digital logic: Basic theory and practice by J. H. Smith
Newnes/Butterworth, 1971. 147 pp. £1.50

This introductory book on digital logic is stated to be for technicians, and students on HND and similar courses. No prior knowledge of electronics is claimed to be necessary for the understanding of its contents.

The scope of the work ranges from an initial, but by no means comprehensive, definition of terms, through basic symbols, truth tables and Boolean algebra, to the synthesis of very simple combinational and sequential logic problems. The schematic logic symbols used are based on BS 3899, whose readers may initially find unfamiliar, and greater stress should have been placed on the basic action of clocked JK, RS, and D types of module.

The detailed circuit diagrams given to illustrate the action of various logic circuits are in rather an unfortunate manner, and readers with no prior knowledge of electronics would have difficulty in correctly appreciating them. Again, this is particularly true of bistable circuit arrangements, where circuit layouts are unusual and frequently do not clearly distinguish between the various transistor base-input signals. For an introductory book, considerable simplification of several circuits down to basic fundamentals would have been advantageous.

No tutorial questions are included, which is a drawback for many potential readers. Also, the very few references quoted at the end of certain chapters could well have been made more comprehensive.

Summarising, this book provides a relatively inexpensive introduction to the subject, particularly for a reader who wishes to obtain a general impression rather than detailed knowledge. For any higher-education student of computer or electronic engineering, however, it must be backed up by some further text of a more detailed nature.

S. L. HURST

Theoretical statistics—basic ideas by Stanley N. Collings
MacDonald, 1971. 92 pp. 55p

Anyone who finds the study of statistics difficult is recommended the above, which is a very cheap, readable book, especially useful if one is studying alone; the author's intention of using it as an amplification to an 'A' level of mathematics is achieved with admirable success.

In the first few chapters, the author develops a definition of probability, the laws of probability and a definition of independence by considering experiments with dice using the concepts of events, sample space, randomness and Boolean algebra. He then introduces the idea of the cumulative-distribution function, discrete distributions and bivariate distributions, and finishes the book with a look at random sampling and sampling moments.

The 'question/answer' examples provide a useful revision aid, if needed, as well as a consolidation of work already covered on probability, and it is unfortunate that there are no similar sections giving examples or problems on the later chapters.

The book does, however, present in a concise, easily understood form the principles and applications of modern statistics, and should provide a useful introduction for statisticians and a textbook for engineers.

The home student will find this book particularly useful as he is led carefully by the hand from the basic ideas, through the difficult concepts by numerous approaches and relevant examples, and the adequate index provides a useful aid for revision purposes.

The author assumes approximately an 'A' level or slightly higher standard in mathematics as well as a reasonable knowledge of Boolean algebra, but the book should not present any difficulties to the student or recently qualified engineer.

B. D. MASTERS

D.C. amplifiers by B. Mitoses
Butterworth, 1971. 520 pp. £4.50

The author has produced a book covering all aspects of d.c. amplifiers from basic principles to their specification and the uses which can be made of operational amplifiers. The book is divided into three main sections. The largest of these is an excellent introduction to active devices from a theoretical viewpoint utilising equivalent circuits and transfer functions. This description of active devices (i.e. thermionic valves, bipolar and field-effect transistors) makes the mathematical representation of the properties of d.c. amplifiers, which follows later in the text, much easier to understand.

The second section of the book deals with the input, output and intermediate stages of a d.c. amplifier and explains in detail how they can best be used in a multistage d.c. amplifier to obtain optimum performance.

The final sections are sufficiently emphasised, and the various types of negative feedback, correcting networks, chopper-type amplifiers, drift correction and ends with a survey of operational amplifier configurations.

Throughout the book a mathematical approach is employed to explain basic circuit properties, and full use is made of book, but that on bistable modules is not so happy. Distinction between d.c. set and clear inputs, and clocking inputs is not sufficiently emphasized, and greater stress should have been placed on the basic action of clocked JK, RS, and D types of module.

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