1001
questions & answers
to help you prepare
for the
CDP® EXAM

Revised Edition

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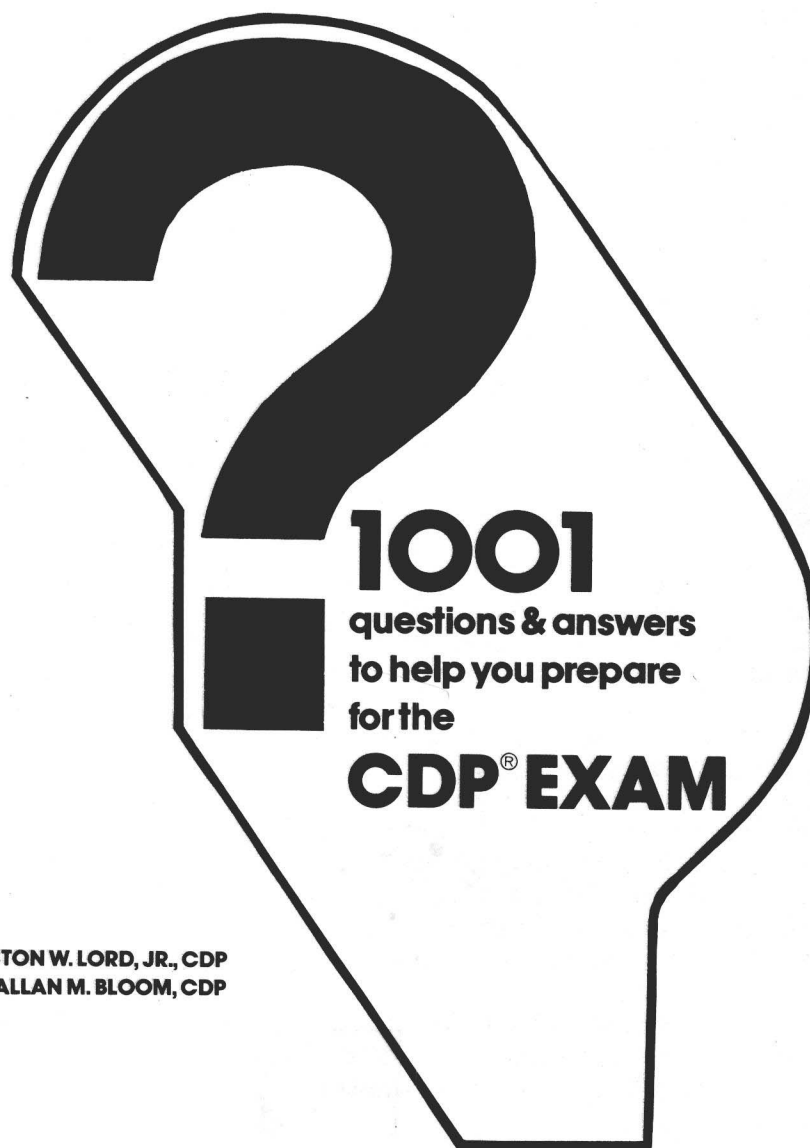
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INTRODUCTION

The questions, answers, and explanations in this volume represent many thousands of hours of collection, compilation, item testing, revision, and preparation -- all done with one objective in mind: to provide you, the reader, with the best possible "quick review" of the subject matter covered by the examination you will take to obtain the Certificate in Data Processing (CDP).

The history of this work dates back to 1973 when the author, convinced of the need for some form of thorough review examination, was unable to convince the Board of Directors of the Institue for Certification of Computer Professionals (ICCP) of the need for a sanctioned CDP (registered trademark, ICCP) Review Program. The result of that concern was the compilation of what was to become known as the Candidate Assistance Program of the Society of Certified Data Processors (SCDP) of which the author was, at that time, President.

The SCDP Candidate Assistance Program was highly successful and prepared many candidates for the examination. In 1976, however, the Board of Directors of the SCDP voted to sell the program to this author and that vote was backed up by a vote of the membership. Under arrangement with the author, the SCDP maintains the Candidate Assistance Program as a membership benefit.

It was, however, time to give the program a broader application than was available for the relatively few people who sit each year for the examination. It seemed to be a valuable way for others to test the extent of their data processing-related knowledge. Thus, the author has expanded the program and this volume is the result of those efforts. This book has been developed and prepared to make it most useful for persons and organizatons conducting CDP Review courses.

It should be noted that the questions asked herein, and the answers which accompany them, are but slightly more than a thousand of the type you are most likely to encounter. Since the CDP is a protected examination, it is impossible to guarantee 100% coverage of all topics on the test, which is, of course, subject to change every year. They are not all the questions which could be asked, and perhaps the author's interpretation of the questions will not be precisely the same as you will encounter on the examination or which align specifially with your experience. It is known, however, that the program from which these have been drawn has assisted many candidates to recieve the CDP. Hopefully, it will do the same for you.

As in every human endeavor, there will be ambiguities and lack of precision. Every attempt has been made, however, to clarify those which are known. If you find any such question or answer, the author would appreciate hearing about it.

Constructing more than a thousand questions on the subject matter of the CDP Examination is not an easy task. There are only so many ways one can, in a multiple-choice examination, pose a question, an answer, and a reasonable-sounding set of misleading alternatives. Thus, it is entirely possible that some of the questions in this book are identical, or quite near, to other questions you have seen and perhaps to the examination itself.

As mentioned, the CDP is a protected examination. Requests by the author for older exam material have been repeatedly denied. It is felt by many that older CDP Examinations should be released as study material, a practice which is done for other examinations from other organizations, such as the AICPA. Even that request has fallen on deaf ears.

In compiling these guides, the author has made a conscious effort to avoid copying questions verbatim from other compiled guides. Where some of the questions appear similar, it should be remembered that they came from the same source: feedback from the candidates directly.

Many traditional educators decry a "teaching of the test" approach to passing examinations. The author does not. Theoretically, if measurable objectives have been established for a program, the next logical step is the construction of an examination to test the accomplishment of those objectives even before any course of instruction on the subject matter has been developed. The examination, as the final measurement of success in any educational process, therefore becomes the standard against which any student, or candidate, is measured.

Historically, it has been observed that CDP candidates have the most success on the CDP Examination immediately after completing their undergraduate education, when much of the subject matter is firmly entrenched in their minds. While it is not known what percentage of those taking the examination are not recent graduates or are not graduates at all, it is felt by this author that such persons really need the advantage of in-depth review of the subjects involved. Also, many of the subjects covered by the examination are not really a function of such an educational program and could easily be overlooked by a candidate who would have little reason to know or utilize such data. If, as a result of these efforts, it is found that the average passing grade increases, then those who control the test will be required to make it more difficult and discriminating. Such an action would only be beneficial to the industry.

In constructing this work, every effort was made to select types of questions which have been proved to be valid in the Candidate Assistance Program. So far as possible, test items which have proved "too easy" for candidates have been strengthened. Test items which have proved "too difficult" have been rewritten and clarified, not to make the test items less difficult, but to make the items and alternatives more comprehensible. Since this work is not done in conjunction with any educational program, and since there are no nationally recognized job standards for data processing, correlation to either format is impossible.

The hope of this author is, however, that in presenting more than three times the number of questions you will encounter on the actual examination, the coverage will be adequate to see through the examination itself. We can only know that if you will provide us with feedback to indicate the changes in the examination itself - those areas which require less emphasis and those which will require more. Please send your comments to Q.E.D. Information Sciences, Inc., Q.E.D. Plaza, P.O. Box 181, Wellesley, Massachusetts, 02181. Candidates who sat for recent examinations have indicated that the coverage is more than adequate.

Finally, this examination, as any examination, should be used on a "best answer" basis, and with a view to using the work as a means to uncover weaknesses in your knowledge. Merely memorizing the answers to any question missed will not guarantee that you have the knowledge necessary to pass the CDP Examination. You should rightfully use this book as a discriminator to tell you where you should devote your research.

Kenniston W. Lord, Jr., CDP

CONTENTS

SECTION 1

DATA PROCESSING EQUIPMENT

The following topic list will tell you what areas in which you are expected to have a practical working knowledge. The percentages indicate the approximate allocation of questions in each area.

I. Computers
    A. Evolution of EDP   5%
    B. Computer Components and Functions   10%
    C. Internal Processing   10%
    D. Computer Characteristics   15%
II. Peripherals
    A. Input/Output Devices and Media   15%
    B. Special Input/Output Systems   15%
    C. Data Transmission   20%
    D. Auxiliary Memory   10%

1. Which communication channel has the fastest transmission rate?

   A. Telegraph grade.
   B. Broadband grade.
   C. Voice grade.
   D. Subvoice grade.

2. Which of the following hardware features is most likely to be associated with off-line equipment?

   A. Mode M (not modem).
   B. Operator's console.
   C. Selector channel.
   D. Storage protect.

3. Which is not an advantage of a variable word-length computer?

   A. Faster tape speeds.
   B. Faster internal speeds.
   C. More memory available for instructions and data.
   D. Must check many positions for word marks and end-of-record indications.

4. The access time for a fixed head disk includes:

   A. Seek time and rotational delay.
   B. Seek time and data transfer time.
   C. Channel allocation time.
   D. Rotational delay.

5. What is multiprocessing?

   A. Segmenting a job to run on different computers in the same environment.
   B. Formatting a file so that two forms may be printed two up.
   C. A technique in which output drives are switched on-line to another processor.
   D. A combined hardware and software technique utilizing two or more processors sharing the same memory unit.

6. What is the sume of the two binary numbers 101100 and 100110 in decimal?

   A. 74
   B. 75
   C. 82
   D. 83

7. What is the communications channel with a line speed of approximately 2,400 bits per second called?

   A. Voice grade channel.
   B. Broad-band channel.
   C. Subvoice grade channel.
   D. Telegraph grade channel.

8. Data may be sorted on a great variety of media and includes the following:

   A. Paper tape.
   B. Magnetic tape.
   C. Punched cards.
   D. All of the above are correct.

9. Select the following statement about Mark Sensing that is not true:

   A. Mark Sensing is faster than key punching.
   B. Mark Sense cards are standard card size.
   C. The use of a special pen or pencil is required for good Mark Sensing.
   D. Alphabetic characters can be mark sensed.

10. The special paper manufactured for checks and which makes any alterations very obvious is called:

   A. Bond paper.
   B. Safety paper.
   C. Check paper.
   D. Opaque paper.

11. Direct reference, indirect reference, base/displacement, and indexing are ways to perform:

   A. Computer arithmetic.
   B. Word organization.
   C. Memory accessing.
   D. All of the above are correct.

12. Loop iteration and address modification uses which of the following concepts?

   A. Base plus displacement.
   B. Indirect addressing.
   C. Direct address.
   D. Indexing.

13. The unit record machinery utilizes:

   A. Fixed format records.
   B. Fixed size records.
   C. Variable size records.
   D. Undefined records.

14. Which of the following is temporary storage used to compensate for the slow rate of operation of an I/O device?

   A. Channel.
   B. Buffer.
   C. Register.
   D. Subroutine.

15. In what way is the digital computer superior to the analog computer?

    A.   Speed.
    B.   Economy.
    C.   Precision.
    D.   Capacity.

16. Which of the following computer I/O devices does not use cylinder notation?

    A.   Disk.
    B.   Tape.
    C.   Magnetic card.
    D.   Drum.

17. What is the difference between binary codes and binary numbers?

    A.   The number of bits.
    B.   One is fixed and the other may be variable.
    C.   The value associated with each bit, up to the word length.
    D.   There is no difference.

18. Subtraction within the majority of electronic computers is performed in which of the following manners?

    A.   Subtracting the subtrahend from the minuend.
    B.   Addition of complements.
    C.   Subtracting the minuend from the subtrahend.
    D.   Adding the minuend to the subtrahend.

19. Which of the Following characteristics would most likely apply to a direct access file utilizing indexes or dictionaries as its addressing technique when processing randomly?

    A.   Two accesses are required to get each record.
    B.   Randomizing formula.
    C.   Synonyms will be generated which will result in extra accesses.
    D.   There will be a high incidence of gaps or unassigned physical records within the file.

20. An electronic mechanism which has only two states, and which is able to change states at high speeds may be known as a:

    A.   Flip-flop.
    B.   Pulse change.
    C.   Delay switch.
    D.   Bit.

21. Which of the following is mandatory for process control computers?

    A.   Analog monitoring signals.
    B.   Digital polling signals.
    C.   Feedback signals.
    D.   Manual control signals.

22. A prime use for MICR encoding is:

    A.   Teleprocessing.
    B.   Remote job entry.
    C.   Check processing.
    D.   Module 10 arithmetic.

23. Which of the following is not a characteristic of the analog computer?

    A.   Specialized hardware.
    B.   Operating systems.
    C.   Direct readout.
    D.   A-D conversion.

24. A process control computer in which the performance of any operation starts as a result of a signal that the previous operation is completed is known as a (an):

    A.   Analog computer.
    B.   Digital computer.
    C.   Real-time computer.
    D.   Asynchronous computer.

25. The device normally used to process financial transaction documents is:

    A.   COM.
    B.   MICR.
    C.   OCR.
    D.   Graphics.

26. Which of the following statements is FALSE?

    A.   Graphic COM devices are used as substitutes for impact printers.
    B.   COM devices can write characters at rates up to 500,000 CPS.
    C.   COM devices basically photograph the image on a cathode-ray tube.
    D.   There are two major types of COM devices, alphanumeric and graphic.

27. The function of a multiplex channel is the following:

    A.   High speed communication monitoring.
    B.   Input/output control scheduling.
    C.   Acceleration of disk transfer rates.
    D.   Appending slow-speed input/output gear.

28. A device which stores information temporarily during data transfer between memory and the input/output device is called:

    A.   Secondary storage.
    B.   Disk storage.
    C.   Tape storage.
    D.   Buffer storage.

29. Which of the following is the principal feature of COM?

    A.   Paper reduction.
    B.   High speed input.
    C.   Inexpensive virtual memory.
    D.   Random access storage.

30. Memory cells can:

    A.   Store an entire computer word.
    B.   Be referred to by a symbolic tag.
    C.   Both A and B are correct.
    D.   Neither A nor B is correct.

31. Which of the following is not solely a characteristic of a third generation computer?

    A.   Byte data format.
    B.   Read-only storage.
    C.   Virtual memory.
    D.   Base addressing.

32. A recent development in magnetic tape recording techniques which allows single bit errors to be corrected "on the fly" is called:

    A.   Phase encoding.
    B.   Bar encoding.
    C.   Doppler encoding.
    D.   Auto-encoding.

33. When comparing plated wire memory to core memory, all of the following are true of plated wire memory except one. Which one?

    A.   It is faster.
    B.   It is more widely used.
    C.   It consumes less power.
    D.   It utilizes non-destructive readout.

34. The arithmetic process employed by the computer is:

    A.   COMPUTATIONAL-3.
    B.   Binary.
    C.   EBCDIC.
    D.   E notation.

35. Data buffering may be described as that storage area which:

    A.   Functions as a speed-compensation device.
    B.   May be internal or external to a problem program.
    C.   Functions in conjunction with an access method.
    D.   All of the above are correct.

36. Which of the following components or functions of a digital computer <u>do not</u> use serial or parallel functions?

    A. Precision operations.
    B. Memory operations.
    C. Operation upon operands.
    D. Transmission of data.

37. The tracks on a disk are:

    A. Concentric circles of varying recording density.
    B. Adjacent sectors of equal diameter.
    C. Spiral, like an LP record.
    D. Fixed in size, requiring smaller blocks on inside tracks.

38. Forms designed for a computer printer should allow for how many horizontal characters per inch?

    A. 10.
    B. 8.
    C. 6.
    D. 12.

39. The function of a general register:

    A. May be used for relocation.
    B. May be used for double precision arithmetic.
    C. May be used for indexing.
    D. All of the above are correct.

40. Which is a technique by which each of the terminals sharing a communications line is periodically interrogated to determine if it requires servicing?

    A. Priority scheduling.
    B. Exclusive branching
    C. Synchronous operation.
    D. Polling.

41. The maximum length of a transmitted mag tape block is limited by the:

    A. Record size.
    B. Computer word size.
    C. Memory size.
    D. Buffer allocation size.

42. When an interrupt occurs, which of the following should be stored?

    A. The contents of the critical registers.
    B. The location of the interrupt.
    C. The latest checkpoint.
    D. Pointers to the data buffer.