UNIVERSITI SAINS MALAYSIA

Peperiksaan Semester Kedua
Sidang 1986/87

LKI 260 - Bahasa Inggeris Teknikal II

Tarikh: 2 April 1987   Masa: 9.00 pagi - 12.00 t/hari
                                      (3 jam)

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Instructions:

1. Before you start, please note that this paper comprises
    20 printed pages and an Appendix of 4 printed pages.

2. Answer ALL questions.

3. Write ALL answers IN THIS BOOKLET.

UNTUK KEGUNAAN PEMERIKSA SAHAJA		
SOALAN	MARKAH PENUH	MARKAH DIPEROLEHI
I	40	
II	33	
III	27	
JUMLAH	100	

Angka Giliran:................... No. Tempat Duduk:...........

QUESTION I   (40 marks)

This question has 6 parts: (A, B, C, D, E, F). Read TEXT A in the Appendix and then answer the questions that follow.

A. Indicate where the following ideas are stated in the text. Give the line references.

1. Microcomputers were developed after the minicomputers.

    Lines _____

2. Microcomputers can do the work done by minicomputers.

    Lines _____

3. Microcomputers have a smaller memory capacity than minicomputers.

    Lines _____

4. Microcomputers are becoming increasingly cheaper.

    Lines _____

5. Microcomputers are now used in sophisticated toys and games.

    Lines _____

6. By the end of this century microcomputers will be cheaper, better and applied more extensively.

    Lines _____

                                        (6 marks)

                                        ...3/-

Angka Giliran:................... No. Tempat Duduk:...........

B.   Identify what the main idea is in the text by ticking
     [√] the appropriate box.

     ☐   1.   Microcomputers are cheap, reliable and efficient.

     ☐   2.   Microcomputers are far superior to minicomputers.

     ☐   3.   There is no limit to what microcomputers can do.

     ☐   4.   Microcomputers will be everywhere in the future.

                                              (1 mark)

C.   Refer to text A and state what the words below refer to.

     1.   their (line 25) _____

     2.   its (line 30) _____

     3.   it (line 32) _____

     4.   their (line 32) _____

     5.   they (line 35) _____

     6.   whose (line 38) _____

                                              (6 marks)

Angka Giliran:.................... No. Tempat Duduk:.........

D.   Indicate whether the following statements are <u>True</u> (T)
        or <u>False</u> (F) by ticking the correct box.

                                                        T   F

    1. Minicomputers can do work that until
        recently was done by microcomputers.

    2. The integrated circuitary of a micro-
        computer has been reduced to a chip

    3. Microcomputer technology will
        discontinue to improve.

    4. Microcomputers are smaller, simpler
        and less flexible than minicomputers.

    5. Minicomputer systems are not decreasing
        as much as microcomputer systems.

                                            (5 marks)

Angka Giliran:................ No. Tempat Duduk:..............

E.   Complete the following statements with appropriate words
     in their correct form, i.e. singular or plural.

microcomputer	semiconductor	chip
microprocessor	circuit board	primary memory
minicomputer	micro	memory
	central processor	single

1.   _____ are often referred to as

     _____ for short.

2.   A _____ system is composed of a

     _____, _____ and
     peripheral equipment.

3.   The _____ of a microcomputer is

     usually built as a single _____

     device known as a _____.

4.   Microcomputers have a smaller _____

     and cannot be hooked up to as many peripherals as

     _____.

5.   A _____ or a few _____

     _____ are normally used for the

     processor, memory and electronic controls of

     peripherals for microcomputers.

                                        (14 marks)

Angka Giliran:................. No. Tempat Duduk:...........

F.   Complete the table below on the comparison between
      minicomputers and microcomputers.

	Minicomputers	Microcomputers
SPEED		
MEMORY CAPACITY		
MEMORY		
INSTRUCTION	simple, more flexible	
SOFTWARE AVAILABILITY	not as limited	

(8 marks)

QUESTION II.   (33 marks)

This question has 6 parts: (A, B, C, D, E, F).
Read Text B in the Appendix and answer the questions which
follow. Tick [√] the correct answer.

A.   1.   The instructions for processing data in a
            computer are

       ☐   a.   stored in the CPU.

       ☐   b.   not needed.

       ☐   c.   in the keyboard.

       ☐   d.   none of these.

       2.   The function of the compiler is to

       ☐   a.   translate input data into machine language.

       ☐   b.   bring raw data to the computer.

       ☐   c.   record processed information on the output
                 media.

       ☐   d.   none of these.

       3.   The computer can make certain kinds of decisions
            because it contains

       ☐   a.   a brain.

       ☐   b.   an arithmetic/logic unit.

       ☐   c.   a keyboard.

       ☐   d.   none of these.

       4.   The component of the CPU that executes instructions
            is the

       ☐   a.   arithmetic/logic unit.

       ☐   b.   control unit.

       ☐   c.   memory.

       ☐   d.   storage component.

Angka Giliran:.................... No. Tempat Duduk:.........

5. Disks are classified as

☐	a. input media.
☐	b. auxiliary storage devices.
☐	c. output media.
☐	d. programs.

(5 marks)

B. Match the list of words in column A taken from Text B with suitable meanings in column B and write them in the space provided. The first one has been done for you.

	Column A	Column B
1.	configuration (line 2) ___form___	controls
2.	resembles (line 12) _____	collects
3.	accumulates (line 30) _____	accomplish
4.	executes (line 38) _____	form
5.	vary (line 46) _____	supplied
6.	regulates (line 57) _____	looks like
7.	verifies (line 59) _____	confirms
8.	achieve (line 70) _____	change
9.	fed (line 75) _____	carries out.

(8 marks)

Angka Giliran:................. No. Tempat Duduk:...........

C.   Refer to text B and write clear definitions for the
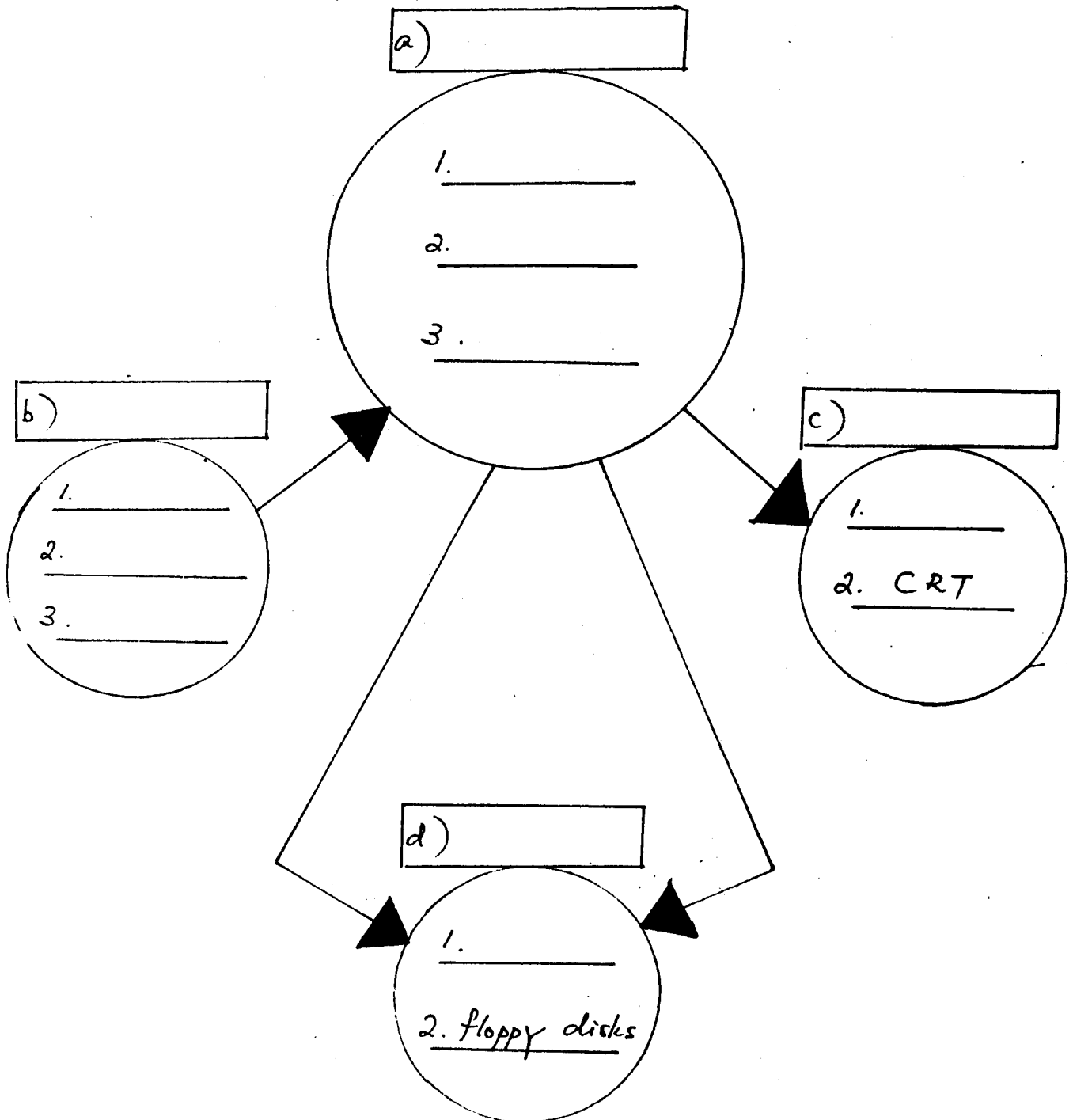   following.

   1.   Application programs are _____

   _____

   _____

   2.   Disks are _____

   _____

   _____

   3.   Auxiliary storage is _____

   _____

   _____

                                            (6 marks)

Angka Giliran:.................   No. Tempat Duduk:............

D.   Complete the diagram below by using information from
       TEXT B.

a)

1. _____
2. _____
3. _____

b)

1. _____
2. _____
3. _____

c)

1. _____
2. CRT _____

d)

1. _____
2. floppy disks

(6 marks)

...11/-

Angka Giliran:............... No. Tempat Duduk:...............

E. Read each of the short texts and answer the questions that follow. Tick [√] the correct answer.

1. Comprising three different groups of programs, software differs from hardware in that it runs the latter by regulating activities of the computer, translating or compiling from high-level to machine language, and achieving the purpose of the user through application programs.

   What is make up of three kinds of programs?

   ☐ a. a computer.

   ☐ b. hardware.

   ☐ c. application programs

   ☐ d. software.

2. Although a complex computer system may and usually does consist of numerous components, including several different input and output devices, in its simplest configuration a system is made up of three main components.

   What is said about the components of a computer system?

   ☐ a. All systems consist of numerous components.

   ☐ b. No system needs more than three components.

   ☐ c. Every complete system has at least three parts.

   ☐ d. A computer system needs as many input devices as it has output devices.

(4 marks)

Angka Giliran:..................   No. Tempat Duduk:..........

F. Indicate whether the following statements are <u>True (T)</u> or
    <u>False (F)</u> by ticking the correct box.

   T   F

 ☐   ☐   1. Data and instructions for processing the data
                   are stored in the internal storage component
                   of a CPU.

 ☐   ☐   2. Punched cards are the only input medium for
                   computers.

 ☐   ☐   3. The arithmetic/logic unit of the computer can
                   compare two numbers but it cannot determine
                   which is the greater if they are unequal.

 ☐   ☐   4. The floppy disk is used for auxiliary storage.

                                              (4 marks)

Angka Giliran:................... No. Tempat Duduk:...........

QUESTION III.
                       (27 marks)

A. This question has 5 parts: (A, B, C, D, E).
Read the Preface below and then answer the questions
which follow.

Author's Preface

Computers are now beginning to be used extensively in the engineering industry
for both design (CAD) and manufacture (CAM). Much of the industrial design is
performed within the drawing office by design and production draughtsman.
Many organisations have introduced CAD techniques into the drawing office in
the form of automatic draughting systems or computing graphics systems. Further
more, CAD and CAM techniques are now being taught in a large number of
universities as part of engineering or computer science courses. At present there
are very few books on CAD which meet the requirements of designer draughts-
men or engineering undergraduates who have had little computing experience.

    This book aims to introduce the subject of computing as an aid to design and
manufacture, and to take the reader through from the basics of computers to
their application in real engineering draughting design and manufacture. It
provides a description of both the hardware and software of CAD systems, to-
gether with a practical discussion of their use in engineering draughting. Two
final chapters show how computer graphics, as part of the draughting process,
can be linked with engineering analysis techniques to provide a CAD system
for stressing engineering designs and for manufacturing engineering components
by using NC machines.

    Particular emphasis is given to the reader who has very little computing
knowledge; and for those who become sufficiently interested to write their own
graphics software, one chapter has been devoted to the description of algorithms
used in computer graphics.

    The book is based on the work of the CAD Section at Imperial College, and
I am indebted to all who have worked with me in this field over the past six years.
In particular I would mention some of my past research students, namely:Drs
R. E. Grindley, A. D. Hamlyn, P. H. Huckle, D. Thompson, F. Ghassemi, and
D. P. Craig, who have contributed so much to the success of the CAD and CAM
research. Thanks are also due to the many firms who sponsored the CAD research
and whose staff contributed so many ideas.

(i) A possible title for this book would be: -
Tick [√] the correct answer.

☐	a. Introduction to computers for engineers.
☐	b. Computer-aided graphics systems.
☐	c. Computer-aided design and manufacture.
☐	d. Computer-aid in the manufacturing industry.

Angka Giliran:....................... No. Tempat Duduk:......

B. Fill in the table below by using information from the Preface.

General Purpose	
Possible readers	
Contents	
Previous knowledge required	

(6 marks)

Angka Giliran:................. No. Tempat Duduk:............

1. Where can you find the call number?

   _____

2. What do you do if you find the call number?

   _____

3. What do you do after you have a snack?

   _____

4. How do you find the location of the book?
        Consult map location.
   _____

5. What do you do if you cannot find the book?

   _____

6. Where do you take the book if it is good?

   _____

7. What do you need to check out a book?

   _____

8. If you cannot find the call number of the book but are
   neither frustrated nor indifferent, you should return
   to the _____

9. If you cannot find the call number and do not care,
   you should go _____

10. If you are frustrated but do not want to eat or have
    a cigarette, you are instructed to _____

    _____

11. After having a snack or a cigarette, you should go to
    the card catalogue.

12. If you find the book, what decision must you make?

    _____

13. If you find the book you want, but it is not a good one,
    what three choices do you have?

    (a) _____

    (b) _____ Go home _____

    (c) _____

14. If you take the book to the check-out desk but
    discover you do not have your ID card, you are
    instructed to go _____

                                              (12 marks)

E. Read through the 4 short texts to get a general idea what
    each is about. Then match them with an appropriate diagram
    from the set which follows:-

Text 1

On-line processing

In an on-line mode of operation, the user communicates directly with
the computer through its peripheral devices, and he can use all the
available devices to their best advantage.

On-line processing is normally used where a high degree of interaction
is necessary.

Text 2

Batch mode processing

This method of computing is usually used for straight forward computing
processes involving no interaction between the user and the machine.

The user normally prepares data and machine operating instructions
on punched cards, reads them into the machine and, sometime later,
receives a print-out of results which he can examine at leisure. The results
may also be received as a graph or drawing prepared by the computer's
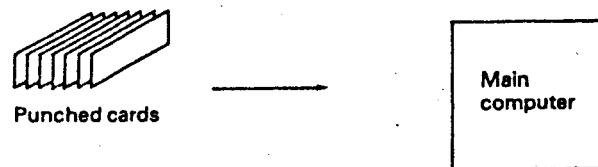graph plotter.

Text 3

'Intelligent' terminal processing

The 'intelligent' terminal normally consists of a small computer with one
or more peripheral devices, connected via a high-speed line to the large
central computer.

The use of this type of terminal is much the same as for the remote
terminal, except that a wider range of communication devices can be used
and a larger amount of data can be handled.

The terminal computer could have connected to it a refresh display
with a light pen, card readers, magnetic tape etc., and
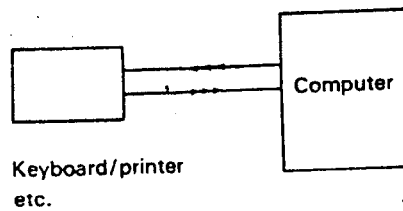could handle many users simultaneously.
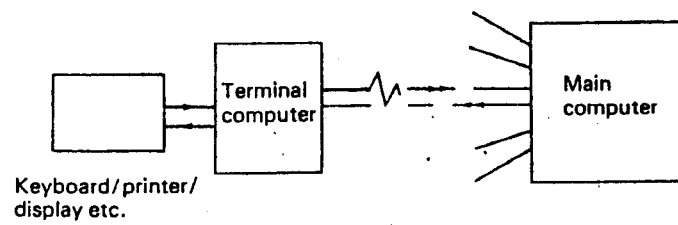
Angka Giliran:................ No. Tempat Duduk:...........

(a)

Punched cards   **Main computer**

Answer: Text _____

(b)

Keyboard/printer etc.   **Computer**

Answer: Text _____

(c)

Keyboard/printer/ display etc.   **Terminal computer**   **Main computer**

Answer: Text _____

(3 marks)

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APPENDIX

This Appendix contains 2 texts – TEXT A and B

1. a) Use Text A in the Appendix to answer
        Question I.

    b) Use Text B in the Appendix to answer
        Question II.

2. YOU MUST HAND IN THIS APPENDIX TOGETHER WITH
    YOUR ANSWER BOOKLET.

TEXT A.

MICROCOMPUTERS

[1]   The early 1970s saw the birth of the microcomputer, or micro for short. The   1
central processor of the micro, called the microprocessor, is built as a
single semiconductor device; that is, the thousands of individual circuit
elements necessary to perform all the logical and arithmetic functions of a
computer are manufactured as a single chip. A complete microcomputer system   5
is composed of a microprocessor, a memory and peripheral equipment. The
processor, memory and electronic controls for the equipment are usually put
together on a single or on a few printed circuit boards. Systems using
microprocessors can be hooked up together to do the work that until recently
only minicomputer systems were capable of doing. Micros generally have   10
somewhat simpler and less flexible instruction sets than minis, and are
typically much slower. Different micros are available with 4-, 8-, 12-, 16-
bit word lengths. Similarly, minis are available with word lengths up to
32 bits. Although minis can be equipped with much larger primary memory
sizes, micros are becoming more powerful and converging with minicomputer   15
technology.

[2]   The extremely low price of micros has opened up entirely new areas of
application for computers. Only 20 years or so ago, a central processing
unit of medium capability sold for a few hundred thousand dollars (U.S.),
and now some microprocessors sell for as cheaply as $10. Of course, by the   20
time you have a usable microcomputer system, the price will be somewhere
between $500 and $10,000 depending on the display unit, secondary storage,
and whatever other peripherals are needed.

[3]   The available range of microcomputer systems is evolving more rapidly than
minicomputers. Because of <u>their</u> incredibly low price, it is now possible to   25
use only a small fraction of the computer's capability in a particular system
application and still be far ahead financially of any other way of getting
the job done. For example, thousands of industrial robots are used today, and
the number is growing rapidly as this relatively new industry improves the
price and performance of <u>its</u> products by using the latest microcomputers.   30

[4]   Even though the software available for most microcomputer systems is very
limited - more so than for minis - <u>it</u> does not discourage <u>their</u> use in the
many high-volume, fixed applications for which programming is essentially
a 'one short deal' as is the case in the space shuttle program. In addition
to their extensive use in control systems of all types, <u>they</u> are destined   35
for many uses from more complex calculators to automobile emission control
systems and are the basis of many TV game attachments. There is also a
rapidly growing market for personal computers <u>whose</u> application potential
in education is only just a beginning to be exploited.

[5]   It would seem that the limits for microcomputer applications have by no   40
means been reached. There are those who predict that the home and hobby
computer markets will grow into a multi-billion dollar enterprise within
a decade or so. It would also appear that performance of microprocessors
could well increase ten-fold before 1990 while prices for micros could
decrease by as much.   45

Source: English for Computer Science
by Norma Mullen and Charles
Brown (1983)

Angka Giliran:................. No. Tempat Duduk:.........

TEXT B.

What Is a Computer?

A computer is a high-speed electronic machine used for word and data 1
processing. In its simplest configuration, a computer system consists of
three components. These parts are an input device, the central processing
unit (CPU), and output device. These are usually referred to as hardware.
To make this hardware capable of performing useful operations, software is 5
needed. Software is a collection of different types of programs that make
the computer run.

Hardware

An input device is that part of the computer system that allows the user
to enter programs (instructions) in the computer and to enter data (numbers
and names) to be processed by the computer. Both the data and programs can 10
be entered into the computer by means of punched cards magnetic tape or a
keyboard. The terminal keyboard, which resembles a typewriter keyboard, is
the most common input device. A medium-sized computer system used in a
small business might have three or more terminal keyboards. Once the
programs and data are typed on the terminal keyboard, they are transferred 15
into the computer memory. The typed material appears either on paper or on
a screen.

The central processing unit is the brain and the heart of the computer
system. It too is made up of three components: the memory, the control
unit, and the arithmetic/logic unit. The memory of the computer is its 20
storage area. It is divided into very small parts called cells. Each
cell is capable of storing information. The capacity of the memory is
measured in thousands of characters, usually referred to as kilos of bytes.
Each byte can store one character. For example, if the word English were
to be stored in memory, it would use seven cells or bytes. Each letter 25
would use one byte for a total of seven. A small system with 8K bytes (8
kilos of bytes) has a main storage area of approximately eight thousand
characters.

In addition to this main memory, computer systems in general have auxiliary
storage. This additional storage area is used to accumulate data gathered 30
over a period of time. The most common medium for this kind of storage is
disks. These look like the records played on record players. They come
in different sizes. The smaller ones are called diskettes or floppy disks
and the larger ones are called hard disks.

The control unit is the chief executive of the computer system. All the 35
other components of the computer are directed by the control unit. It
supervises all the operations in the system. The control unit gets the
instructions from memory, executes them and orders the input and output
devices to perform.

The arithmetic/logic unit is the calculator in the computer. It performs 40
arithmetic operations such as addition, subtraction, multiplication, and
division. In addition, it performs logical operations such as determining
which of two numbers is greater.

The output device is the part of the computer system which allows the
processed information to be available in a readable form for the user. 45
The media used to achieve this vary from hard copy (paper) to television
screens.

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...4/-

Angka Giliran:...............   No. Tempat Duduk:...........

The bill that you get from the electric company, the check from your   47
employer, or an analysis report that you read all may be products of an
output device like a computer printer. A cathode ray tube (CRT) is
another output device. Here information is displayed on a screen like   50
that of a television set.

Software

The word software usually refers to three groups of programs that run the
computer. These are the operating system, the compilers or translators,
and the users' programs. The first two are usually provided by the manu-
facturer of the computer, while the users' programs are usually written by 55
the users according to their needs.

The operating system is a group of programs that regulates all the activi-
ties in the computer. The executive, the most important in this group, is
a master control program that observes, supervises, and verifies all
operations in the computer system. It coordinates program execution and   60
input/output (I/O) operations.

A compiler is a program that translates commands and instructions written
by a programmer in a high-level language like COBOL, BASIC, Pascal, RPG
or FORTRAN into machine language that the computer can understand. It is
much easier to write a program in a high-level language than in machine   65
language. If high-level commands are not written correctly, the compiler
sends out error messages. These messages tell the programmer which
instructions are incorrect.

The last of the software programs are the application programs, or user
programs. These are programs written in a high-level to achieve a   70
special purpose. Programs that calculate wages of employees or total
sales in a department store are examples of programs that belong to this
group.

The computer is often compared to a factory, and the two are very much
alike. Data is fed to the computer; raw materials are brought into a   75
factory. Data is stored in the computer memory; raw materials are kept
in the warehouse. Data is processed to produce information; raw materials
are processed to make finished products. So the same cycle takes place
in both the factory and the computer.

                    SOURCE: Introduction to the Computer
                              by Jeffrey Frates and William Moldrup.

                              oooOooo