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

UNIVERSITI SAINS MALAYSIA

Peperiksaan Semester Pertama
Sidang 1987/88

LKI 460 - Bahasa Inggeris Teknikal IV

Tarikh: 23 Oktober 1987 Masa: 9.00 pagi - 10.30 pagi
(1½ jam)

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INSTRUCTIONS:

Before you begin this examination, please check that it contains 9 printed pages and an Appendix of 2 printed pages.

Answer ALL questions.

Write ALL answers in this examination booklet.

Hand in this booklet and the Appendix intact.

UNTUK KEGUNAAN PEMERIKSA SAHAJA		
SOALAN	MARKAH PENUH	MARKAH DIPEROLEHI
I	60	
II	40	
JUMLAH	100	

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THIS QUESTION PAPER CONSISTS OF TWO PARTS. (PARTS I & II)

PART I (60 Marks)

Read the passage in Appendix A and answer the questions that follow.

A. Tick (✓) the correct answers. (16 marks)

1. Which of the following statements are true of main storage?

i. It is also known as fast access.
ii. It is not attached to the computer.
iii. It is able to transfer information.
iv. It is able to accumulate information.

☐ A. ii & iv
☐ B. i & ii
☐ C. i , iii & iv
☐ D. iii & iv

2. We can gather from paragraph I that

☐ A. electronic storage is vital for the existence of computers.
☐ B. computers are capable of handling several transactions simultaneously.
☐ C. the CPU is unable to process information rapidly.
☐ D. there is abundant space for data collection in the CPU.

3. Which of the following is not true of the present secondary storage devices?

☐ A. They are relatively inexpensive.
☐ B. They operate extremely rapidly.
☐ C. They are only utilized by large companies.
☐ D. They have a larger capacity.

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4. Some major factors which led to the development of mass storage devices are

i. the high cost of the secondary storage devices.
ii. the risk of power failure.
iii. the need for mass storage.
iv. the need for quick access to desired data.

[ ] A. All of the above.
[ ] B. i & iv
[ ] C. ii & iii
[ ] D. iii & iv

5. Which of the following is/are mentioned in paragraph III?

i. The structure of mass storage devices.
ii. The different types of mass storage devices.
iii. The definition of mass storage.
iv. The advantages of mass storage devices.

[ ] A. All of the above
[ ] B. ii & iv
[ ] C. i , ii & iv
[ ] D. iv only.

6. We can conclude from paragraph IV that

[ ] A. the flow of data should be minimised as far as possible.
[ ] B. the smaller devices are uneconomical.
[ ] C. electronic storage "mix" is an unhealthy habit.
[ ] D. the need and budget of users determine the kind of storage devices adopted.

7. We can infer from paragraph V that the author is

[ ] A. in favour of random access devices.
[ ] B. against the use of random access devices.
[ ] C. neither for nor against the use of random access devices.
[ ] D. we cannot tell from the passage.

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8. A possible title for the passage would be :

   A. The future of electronic storage devices.

   B. The functions of electronic storage devices.

   C. The advantages and disadvantages of mass and main storage devices.

   D. Computer systems and electronic devices.

B. State whether the following statements are TRUE (T) or FALSE (F). If the text does not provide enough information for you to decide, tick (✓) insufficient information (II)

(10 marks)

	T	F	II
1. In selecting the type of storage for a system, one must consider the speed, cost and capacity of the storage.			
2. The functions of the storage system include the retention and retrieval of information.			
3. Slower devices with less capacity are preferred by users of larger computer systems because they are cheaper and more affordable.			
4. Disks will lose their popularity once chip and bubble memories come into the market.			
5. The efficiency of electronic storage devices is expected to improve but users must be prepared to pay more for the services they offer.			

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C. List the relative advantages of sequential and random processing in the table below.

(12 marks)

SEQUENTIAL	RANDOM
1.	1.
2.	2.
3.	3.
4.	4.

D. Complete the table below to show the differences between main storage and secondary storage.

(6 marks)

MAIN STORAGE	SECONDARY STORAGE
1.	1.
2.	2.
3.	3.

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E. Identify and write down the cause and effect relationship in the table below.

(10 marks)

CAUSE	EFFECT
1.	1.
2.	2.
3.	3. Extensive circuitry is required.
4.	4.
5. To provide less expensive storage	5.

F. Explain the meanings of the following words and phrases in your own words.

(6 marks)

i. Retain (Line 23) _____

ii. Wiped out (Line 26) _____

iii. Hierarchy (Line 38) _____

iv. Reign (Line 81) _____

v. On the horizon (line 82/83) _____

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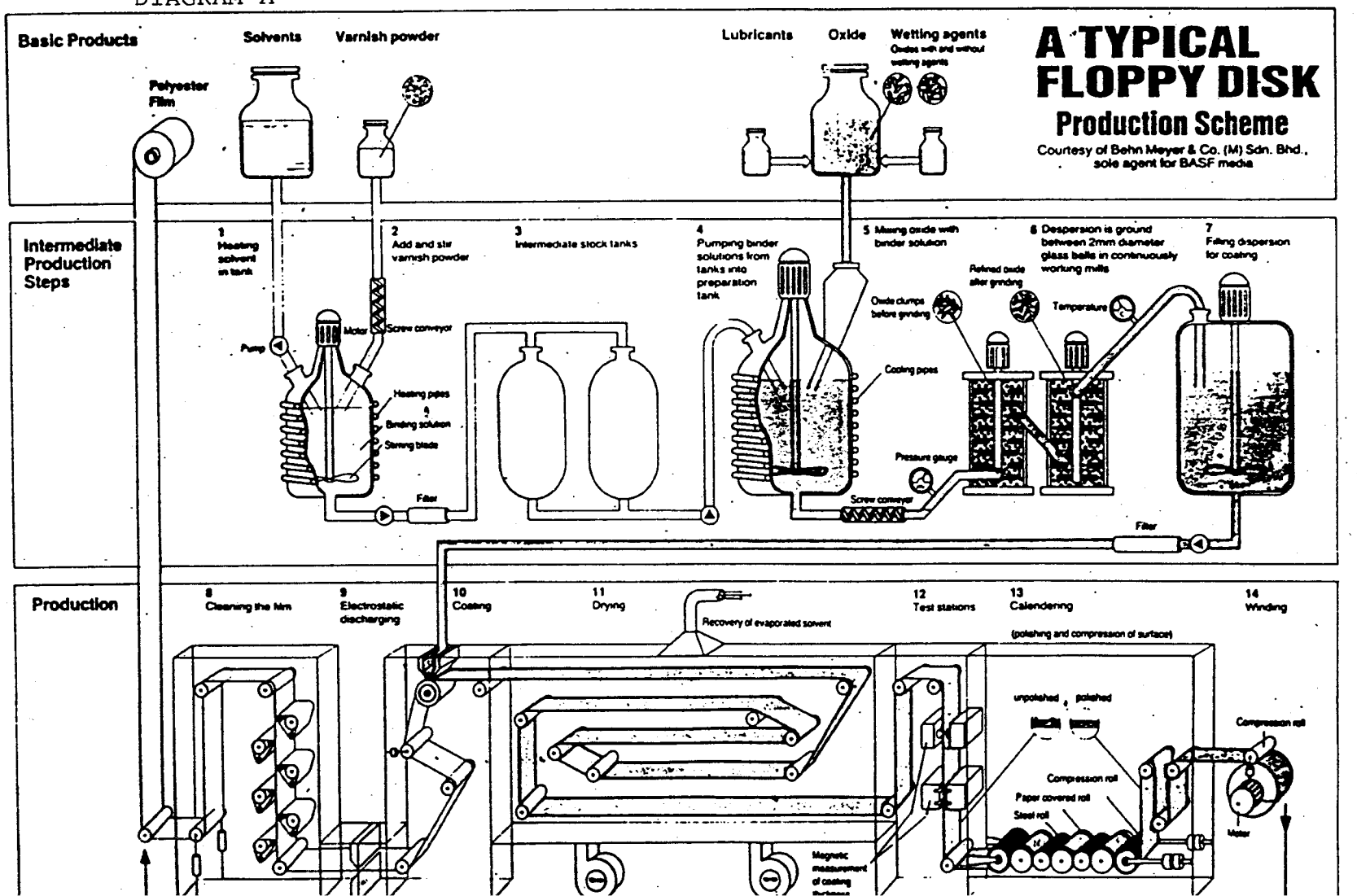
PART II - REPORT WRITING (40 marks)

Imagine you had made a trip with the Engineering Society to a factory that manufactures floppy disks. After the tour , you have to write a report on the processess and stages of production you saw. Use Diagram A which gives a comprehensive view of the whole production process and Tables 1 , 2 and 3 as a guide to your report writing.

Computers / *STORAGE MEDIA FOCUS*

DIAGRAM A



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There are 3 major stages in a typical floppy disk production scheme.

Table 1 - Intermediate Production

Step 1	Heat solvent in tank together with binding solution.
Step 2	Add , and stir - varnish powder through screw conveyor. Combined solutions pass through filter.
Step 3	Store for a while
Step 4	Then binder solution led into preparation tank
Step 5	Mix oxide with binder solution. Solution cooled and stirred.
Step 6	From preparation tank - through screw conveyor and pressure gauge - to working mills.
Step 7	Store and stir dispersion for coating. Pass through filter to next stage.

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Table 2 - Main Production Stage

Step 8	Before coating two steps take place: a) Clean polyester film
Step 9	b) Pass over rollers for electrostatic discharging
Step 10	Coat film
Step 11	Drying
Step 12	Test coating thickness - still unpolished
Step 13	Calendering - pass through 3 kinds of rolls Polished
Step 14	Wind on a compression roll

Table 3 - Final Stage (not in Diagram A)

Step 15	Punch out round magnetic disks from film on the compression roll
Step 16	Lubricate disk
Step 17	Surface finishing
Step 18	Put magnetic disk into jacket and certify quality before packaging. Distribute to various markets.

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APPENDIX

This Appendix consist of 2 printed pages.

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

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TEXT A

Read the text below carefully and answer the questions in Part I.

Electronic storage contains all the information and data a computer needs to operate. Computer systems would not exist without electronic storage. As we have seen, the central processing unit (CPU) of the computer can perform only one small transaction at a time, although at lightning speed, and it has only limited room at any one time for the data it will operate on. Hence, there must be a great deal of space — given the number of transactions the CPU makes (in the millions per second range) — from which the CPU can draw the data it needs, piece by piece, and to which it can return the data it has used in order to make room for the next data.

There are two primary types of storage: main storage and secondary storage. Main storage operates extremely rapidly (and is often called "fast access storage"); it is built into the computer; and it is the "staging point" for information to go into and out of the CPU — therefore, it must operate at CPU speeds. In order to handle such speeds and storage requirements, extensive circuitry is required — so, main storage is expensive. Most main storage also cannot permanently retain information: Since it is part of the computer, when the power is turned off (either on purpose or because of an electrical power interrupt), main storage goes "blank" and anything in it is wiped out; that is, the storage is empty when the power comes back on.

To both provide less expensive storage for the massive amounts of data a computer system needs, and to ensure that data is retained in memory even if the computer is off, a range of secondary storage devices, attached to but not part of the computer, has been developed. Sometimes called "mass storage" devices, they include computer tapes, cassettes, cartridges, disks (floppy and hard), and some other forms, both antique and exotic.

Computer systems have a designed hierarchy that relates the various kinds of storage devices to each other so that data flows from the less expensive mass storage to faster mass storage and finally is transferred, when and as needed, to main storage — then back the other way when the CPU has finished with it. In determining the right kind of electronic storage "mix" for any computer system — from the smallest home microcomputer to the largest mainframe — trade-offs among several factors (capacity, access time, transfer time, and cost) must be considered. Slower devices with less capacity are considerably cheaper and may be affordable for a personal system, where others may not. For larger computer systems, faster storage devices with greater capacities may be more economical.

By and large, devices that utilize direct access, which gets to the desired data directly (as a phonograph needle can be placed directly on any point on a record), rather than sequential access, which has to pass physically through some material to get to the desired data (as a tape recorder does), are faster and can put more data in less space. Disks are random-access devices, and tapes are sequential. But the equipment needed to drive (move/spin) a disk is much more expensive than a small cassette tape recorder, so the cost of tape may be less for small computers.

Main storage presently is done primarily by semiconductor storage devices (chips). While tapes are still widely used, disks have become the most common means of secondary storage. The floppy disk, so-called because it is soft and bendable, is familiar to personal computer users. Looking like a small phonograph record, it is cheap, stores a great deal of information, operates at fast speeds, and can be mailed very easily. Larger computers utilize hard disks (rigid and not bendable) in similar fashion.

As with microelectronics, the future of electronic storage (memory) promises devices that put much more information into much less space, operate at higher speeds, and cost less. Semiconductor (chip) memories that do not wipe out when electricity is cut off may move in where disks now reign. Bubble memories and optical disk storage devices are on the horizon.

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