

UNIT

2

Computers: Hardware and Software

REVIEW QUESTIONS

1. Circle the words listed below in the puzzle:

A	R	P	C	R	R	R	E	I	N	T	E	R	F	A	C	E
F	P	G	J	Y	C	E	S	A	S	D	O	O	K	O	C	H
Y	U	D	X	I	R	T	A	M	T	O	D	A	S	O	A	A
I	I	U	M	S	E	L	B	D	O	C	F	Z	I	R	A	R
E	N	A	B	G	E	D	A	C	O	I	A	T	D	E	A	D
E	T	B	C	M	A	R	T	L	I	U	V	V	C	R	U	C
R	E	U	M	D	S	H	A	M	O	O	T	E	S	O	A	O
A	F	I	P	C	S	S	D	O	T	O	R	N	C	P	P	P
W	D	A	H	T	E	C	P	U	R	O	M	M	A	E	L	Y
D	R	R	I	R	U	J	R	S	B	Q	E	E	N	W	O	I
R	O	Y	A	G	B	O	P	E	R	A	T	I	N	G	T	P
A	T	E	E	H	S	D	A	E	R	P	S	E	E	A	T	E
H	I	N	K	J	E	T	P	R	I	N	Y	I	R	V	E	E
B	N	K	A	E	R	A	W	T	F	O	S	N	C	A	R	S
R	O	X	F	I	N	A	C	R	O	O	O	P	O	I	N	T
D	M	A	I	N	F	R	A	M	E	N	U	U	P	A	R	T
A	P	P	L	I	C	A	T	I	O	N	O	T	L	O	G	T
P	A	X	E	N	A	T	H	U	A	S	I	K	O	G	I	P

dot matrix

ISA

operating

hardware

scanner

basic

softcopy

AGP

mouse

MICR

spreadsheet

file

inkjet

input

RAM

database

monitor

mainframe

CAD

readout

ROM

application

plotter

interface

baud

disk

GUI

hardcopy

software

system

laser

DIMM

Answer the following questions in the space provided.

2. Explain the following terms:

- Hardware _____
- Software _____
- RAM _____
- Smart cards _____
- UNIX _____
- GUI _____
- PDA _____
- Spreadsheet _____
- Virus _____
- CAD _____
- Super VGA _____
- GB _____

3. What is the difference between RAM and ROM?

4. Explain the terms *file*, *record*, and *field* as they relate to storing information.

5. What is an *office suite*?

6. You have entered figures and formulas into your spreadsheet program. What else can you do with the data?

7. How is computer processing power determined?

8. What function does a scanner perform?

9. What is *shareware*?

10. How many buttons does a mouse usually have?

CALCULATIONS

Insert the answers to the following calculations in the spaces provided.

- You are preparing a company newsletter. You have a number of pictures that you want to scan and insert in the newsletter. Acme Scanmaster charges \$8.95 per page and \$5.95 per half page. Trophy Pictures charges \$9.99 per page and \$4.95 per half page. You have four full pages and five half pages to be scanned. Which company is cheapest and by how much?

- You are working on the following spreadsheet. What is the Net Income figure for each of the three years?

TUSKER INTERNATIONAL CONSULTING LTD.			
REVENUE	Year 1	Year 2	Year 3
PC Sales	34 879	51 862	85 827
Consulting Svcs	76 897	114 889	190 872
Training Seminars	19 675	29 056	47 817
Workshops	6 749	9 667	15 502
Supplies	12 765	18 691	30 542
Misc.	5 468	7 745	12 299
TOTAL REVENUE			
EXPENSES			
Advertising	3 500	4 491	6 473
Heat/A.C.	5 000	6 516	9 548
Hydro	5 643	7 384	10 866
Phone	3 300	4 221	6 063
Rent	13 657	18 203	27 295
Salaries	87 897	118 427	179 487
TOTAL EXPENSES			
NET INCOME			

Add Revenue figures to determine Total Revenue figure. Do the same for Total Expenses. Subtract Total Expenses from Total Revenue to come to the following figures:

Net Income for Year 1 is: _____

Net Income for Year 2 is: _____

Net Income for Year 3 is: _____

3. Your Internet Service Provider (ISP) charges \$40.00 a month for 60 hours of on-line access to the Internet. If you use more than the 60 hours, they charge you \$1.50 an hour. The ISP bills you each quarter.

For the second quarter of this year, you were on-line for the following number of hours. How much do you owe your ISP this quarter?

Month 1: 66.5 _____

Month 2: 74.0 _____

Month 3: 52.0 _____

You owe: _____

4. You have four old laptop computers in your office. You were going to buy new laptops until you saw an advertisement from a company that provides upgrades. They have over 700 laptop models that they have upgraded.

You called them for a quote. Their quote is \$999 for each laptop. This price includes upgrades to the CPU, RAM, and hard disk. How much will one upgrade cost, including taxes?

5. You are responsible for payroll in your company. You have 8 full-time and 22 seasonal part-time workers. As the busy season approaches again, you know that you will not be able to keep up with the payroll workload, so you take the initiative and contact a service bureau.

The service bureau charges \$4.95 processing fee for each full-time employee and \$3.95 for each part-time employee per month. What will be your annual cost of this service if the staff remains at present levels?

RESEARCH ACTIVITIES

1. A friend asks you to give her some advice about buying a new personal computer. You decide to use this as a "business" opportunity. You decide to make a presentation board that you can use later to attract other friends and acquaintances. Mount your findings attractively, and beside each computer model, note the following:

- Manufacturer's name and model number
 - Size of computer (amount of RAM, size of hard disk, dimensions of monitor, etc.)
 - Any additional equipment or add-ons included
 - Reasons why this computer is better than the others
 - Purchase and lease prices.
2. Many rewarding careers exist in the desktop publishing field. From a newspaper, clip six help-wanted ads requiring DTP skills. Mount your ads attractively, and at the side of each, note the following:
- Educational qualifications required
 - Experience sought
 - Personal qualities needed.

Be sure to look up or ask about any unfamiliar terms contained in the ads.

3. Today's computers can be made so small that they fit virtually anywhere. Research and create an oral presentation or poster board display on computers in [your choice of topic]. Topics could be computers in cameras, in cars, in toys, in mobile communications, or whatever you chose.
4. The Universal Product Code, used in retail stores today, is a code that the manufacturer of the item puts on it prior to shipping. Retail stores that use scanners can scan the product and capture the UPC code for inventory tracking as well as point-of-sale transactional analysis. Investigate how this code works and, in a retail store, what functions are involved. Prepare an oral presentation on your findings.
5. Much has been written about computer viruses. What exactly are they? What are the most common current viruses? What can be done about them? Answer these questions in a short report.
6. "Is all the processing speed of today's computers necessary?"
Do the appropriate research and prepare to debate this statement.
7. Prepare a presentation that compares four different operating systems, discusses their strengths and weaknesses, and identifies their best application.
8. Using current literature, catalogues, advertisements, and vendors, compare currently available notebook computers under the following headings:
- Manufacturer
 - Operating system used
 - Price
 - Memory (RAM) size
 - Hard disk capacity
 - Battery capacity
 - Unit dimensions
 - Weight of unit
 - Options included such as PCMCIA card slot, built-in modem, LAN card, etc.

Key your information and indicate the purchase recommendation you would make, based on your research.

9. What is the current status of optical disk storage devices? Check recent articles, use your library database service, research the Internet if you have access to it, or contact manufacturers directly.
10. Technology is constantly on the move. What's coming next in the business world in the areas of:
 - computers?
 - reprographics?
 - records management?
 - communications?
 - artificial intelligence?You may do all of these as one major project or break the project into sections.
11. Research the current status of copyright law relating to computer software in your province and/or the country. Prepare a written report on your findings.
12. The use of RFID is very quickly becoming an accepted standard allowing a fast, reliable solution in industries where barcode technology could not previously provide a satisfactory result. Research this topic and present your findings in a short written report.

ON-THE-JOB ACTIVITIES

1. You work for Tusker International Consulting Ltd. as a sales representative. Each day you meet prospective customers. You always ask for their business card. After hours you enter the information into your computer. Which software program(s) could you use? Explain why.
2. Your new office suite software includes a database program. You are familiar with databases but you know many of your co-workers are not. Write a brief instruction manual on the major points of using a database. Include diagrams in your manual.
3. Your company recently purchased the latest office suite software that includes word processing, database, spreadsheet, and graphics. You can:
 - move between the individual programs with a click of a button
 - create data in one program and use it in another program
 - access the software across a network.Create a one-page announcement for the new software. Include the offer of training for staff who may be unfamiliar with the software. List the advantages of this new software package as part of your "sales pitch."
4. You are starting a new job. Write down what you think you might want to know about the company's computer system on your first day. Discuss your ideas with your colleagues.
5. Write a brief report comparing the functions of laptop and desktop computers. Discuss the pros and cons of each. Also include tips on how to make each type more user friendly.

6. You printed a hard copy of the following customer information. Review the information and then answer the following questions.

MAKE Systems Inc.
40 Bedard Street
Nanaimo, BC V9R 5B6
Account No. 7007
Credit limit: \$15 000
Balance due: \$3195

Mr. and Mrs. G. Staeger
2620 Hastings Avenue
Lloydminster, SK S8V 1W6
Account No. 021
Credit limit: \$15 000
Balance due: \$2750

Ms. J. Bedford
40 Water Street
Rocky Mountain House, AB T2H 3E3
Account No. 3014
Credit limit: \$16 000
Balance due: \$14 200

Dolly's Hardware
3103 Connaught Avenue
Saskatoon, SK S3L 3A8
Account No. 142
Credit limit: \$5500
Balance due: \$5000

The Kempf Corporation
205 Circle Avenue
Winnipeg, MB R3W 1L8
Account No. 053
Credit limit: \$12 500
Balance due: \$1550

Custom Design Group
1036 Centre Avenue E.
Turtleford, SK S9H 1V6
Account No. 016
Credit limit: \$3500
Balance due: \$1750

Bedford Educational Services
200-2099 Main Street
Halifax, NS B0N 2J8
Account No. 037
Credit limit: \$25 000
Balance due: \$4600

Sasha, Hobbs and Company
1100 Blanche Boulevard
Town of Mont Royal, PQ G6D
2H9
Account No. 056
Credit limit: \$1900
Balance due: \$0

- a) What software do you think was used to create this information?
 - b) What can you use this information for?
7. Refer to the graphic on the top of the next page and then answer the following questions:
- a) What is displayed on your screen?
 - b) What type of software program would have created this item?
 - c) If you were asked to calculate the total expenses and net income, how would you do it? Be specific.
 - d) If you wanted to compare the figures for each of the three years, how would you do this?
 - e) If you wanted to put this information into a word processed report, how would you do it?

	A	B	C	D	E	F	G
1							
2		TUSKER INTERNATIONAL CONSULTING LTD.					
3							
4		REVENUE	Year 1	Year 2	Year 3		
5		PC Sales	34,879	51,862	85,827		
6		Consulting Svcs	76,897	114,889	190,872		
7		Supplies	12,765	18,691	30,542		
8		Misc.	5,468	7,745	12,299		
9							
10		TOTAL REVENUE					
11							
12		EXPENSES					
13		Rent	13,657	18,203	27,295		
14		Hydro	5,643	7,384	10,866		
15		Phone	3,300	4,221	6,063		
16		Salaries	87,897	118,427	179,487		
17		Heat/A.C.	5,000	6,516	9,548		
18		Advertising	3,500	4,491	6,473		
19							
20		TOTAL EXPENSES					
21							
22		NET INCOME					
23							

8. Interpret the computer language used in the following three advertisements. Discuss your interpretations with your colleagues.

DESKTOP SOLUTION

I-Component Affordable Home Solutions

- INTEL® Pentium 4 Processor @ 1.7GB*
- 128MB SDRAM
- 30GB HDD
- 19" Monitor (17.6" v.i.s.)
- Intel 3D AGP Graphics
- 48X CD-ROM
- 16X CD-R
- MS Windows NT Workstation Edition
- 1 year Limited Warranty
- One Year AOL Canada Internet Access

* Available at speeds up to 1.70 GHz, the chip's design includes hyper-pipelined technology, a rapid execution engine and 400 MHz system bus in order to deliver a higher level of performance, 3D gaming, digital video and audio.

Palm IIIxe 8MB-RAM PDA

Flash ROM means future upgrades will be a snap!

Use the infrared beam to exchange business cards, phone lists, data, memos, and add-on applications with other IR-enabled Palms.

Description: Palm Connected Organizers Palm IIIxe 8MB-RAM PDA **Included Functions:** Address Book, Calculator, Calendar, E-mail, Expense Tracker, Note Pad, Scheduler **Amount of Memory:** 8 MB **Operating System:** 3Com® Palm OS **Input Method:** Stylus **Type of Device:** PDA (Personal Digital Assistant) **Connectors:** (1) Serial - 9 pin D-shell (RS-232/EIA 574), (1) Serial - Infrared (IrDA-SIR) **Backlit Display:** Yes

Power Mac G4 733MHz PowerPC G4

The Power Mac G4 has an improved system architecture featuring a new 133MHz system bus, one AGP 4x graphics and four high-performance PCI slots, plus an AirPort Card slot, FireWire and USB ports. Most models feature the state-of-the-art NVIDIA GeForce2 MX accelerator, but you can choose the ATI RADEON card instead if you prefer.

Type of Processor:	733MHz PowerPC G4
Hard Drive Capacity:	60GB (7200 rpm)
Operating System:	Mac OS
Modem:	56K V.90
Memory (PC133 SDRAM):	256MB
Optical drive:	DVD-R/CD-RW Super Drive
Backside cache:	1MB L3 at 244MHz
Wireless networking:	Airport ready
FireWire:	Two 400-Mbps ports
Graphics Support:	NVIDIA GeForce2 MX with 32MB SDRAM
On-chip cache:	256K L2 at 733MHz

9. If you encounter problems with your printer, you may have to call a printer support hotline. The personnel on the hotline usually ask quite a few questions. To save time, you should have this information readily available.

Prepare an information sheet listing the questions the hotline personnel might ask. Then complete the sheet with information relating to the computer system on which you are currently working. **Hint:** Most printer manuals have some information that may help.

10. Create an attractive presentation of samples of work printed on as many different types of printers as you can – laser, inkjet, dot matrix, colour printers.

WHAT WOULD YOU DO?

In the space provided, indicate what you would do in the following situations.

1. Your computer goes down in the middle of a report due to be completed in two hours.

2. You find out that the computer you purchased for delivery today is not powerful enough for your needs.

■ *Unit 2 – Computers: Hardware and Software*

3. The database you are presently working on is frustrating you because of one problem area you cannot seem to solve.

4. The charge for work done on your office computer is \$200 more than the estimate provided by the repair company.

5. A friend asks you to do her a favour and make her a copy of the software you use in the office.

6. You are working on your computer. You see a flash of lightning and hear a clap of thunder.

7. A computer technician has just finished working on your computer and has left the office. You try to get into your accounting program but cannot get beyond the logo.

8. One of your co-workers tells you that his computer is responsible for his ill health and that everyone in the office will have to do his computer work from now on.

9. When you switch on your computer, the monitor is blank.

10. One of the computer gurus in your office is responsible for trouble-shooting computer problems. Whenever you ask for an explanation, she uses "computerese."

11. You return to the office one evening for a special meeting. As you walk by your work area, you notice someone working at your computer. You do not recognize this person.

12. One of your co-workers spends a lot of time during the working day gathering research from the Internet. Occasionally when you walk by, you notice she is playing games on the Internet.
