

POK OI HOSPITAL CHAN KAI MEMORIAL COLLEGE

S.7 Mock Examination 2000-2001

Computer Applications

Secondary: 7(____)____
 Name: _____
 Class No.: _____

Date: 26 Feb 2001
 Time: 8:30-11:30 a.m.(3 hrs)
 (P.1 - P.2 / 34)

Instructions to students:

- The total marks of this paper are 100. Section A carries 40 marks, Section B carries 60 marks.
- Put your answers on the answer sheets provided.
- Attempt ALL questions.

Section A (40 marks) Answer all questions in this section

- What is a computer virus? Give two ways to avoid infection of a virus worm which spread by electronic mails. (4 marks)
- The sales department of a company is about to produce an invoice to a customer. Three applications can be used, word processing, electronic spreadsheet and database. Which one will you recommend? Explain your answer briefly. (4 marks)
- Define ergonomics in computer context. What health hazards does the keyboard cause? Give two ways to use keyboard healthily. (4 marks)
- The manager of a company wants to create a paperless office. What computer software and hardware should he buy? (4 marks)
- Comment on the statement "Windows 98 is an excellent operating system." (4 marks)
- State the impact of advance in information technology on the employment trend. (4 marks)
- What are the components of an information system? Illustrate your answers with a suitable example. (4 marks)
- Give two advantages of communicating with electronic mail over ICQ. State two advantages of ICQ over electronic mail. (4 marks)
- John wants to start business as a SOHO in the Internet. What critical factors are required for his success? (4 marks)
- Suppose today is January 31, 2001, write down the output of each of the following database commands:
 (a) ?SUBSTR(CDOW(DATE()),2,3)
 (b) SET CENTURY TO 20
 ?DOW(CTOD('02/26/01')) (4 marks)

Section B (60 marks) Answer all questions in this section

- The following diagram shows part of a worksheet for calculating the charge of a motor vehicles insurance through a number of years:

	A	B	C	D	E	F	G	H
1	Motor Vehicles Insurance (Third Party Risks) Charge of a 1500 c.c. Private Car						MIB= 3%	
2								
3	Year	Annual Premium	Discount Rate	Discount	NCD Rate	NCD	MIB	Total
4	1994	2500	15%	375	20%	425.0	51.0	1751.0
5	1995	2800	30%	840	30%	588.0	41.2	1413.2
6	1996	3200	30%	960	40%	896.0	40.3	1384.3
7	1997	4800	30%	1440	50%	1680.0	50.4	1730.4
8	1998	3024	0%	0	60%	1814.4	36.3	1245.9
9	1999	3150	0%	0	60%	1890.0	37.8	1297.8
10	2000	2625	0%	0	60%	1575.0	31.5	1081.5
11								
12	NCD	No Claim Discount						

The total charge is calculated by annual premium less discount, less NCD and add MIB.
 The formulae are entered in row 4 with reference to H1, then cells of row 4 are copied downwards.

- (a) What should be the formula entered in the following cells respectively?
- (1) D4
 - (2) F4
 - (3) G4
 - (4) H4
- (5 marks)

- (b) Some what-if analysis can be done.
- (1) Explain the term what-if analysis.
 - (2) Describe how you can obtain the total if the discount rate of year 2000 is 30% and the NCD is 20%.
 - (3) Describe how you can observe the changes to total if the MIB rate is increased by 70%.
 - (4) State a condition where your answers in (1) and (2) above cannot give the expected result. (8 marks)

- (c) The above data can be stored in a database called INSURANCE.
- (1) If it is to allow what-if analysis in question (b) above, only FIVE fields will be essential, what are they?
 - (2) Write down the data structure for the database.
 - (3) Write down the command(s) to output the total charge for the year 1997. (7 marks)

12.

STUDENT.DBF, LOAN.DBF and BOOK.DBF are database files storing information about students and the information about the books in the library. Their structures are given below:

STUDENT.DBF:

Field	Field Name	Field Type	Field Width	Contents
1	STU_ID	Character	4	Student identity card number
2	NAME	Character	20	Student name

STU_ID is constructed by the class and class number of the student, e.g. 1A02 is the 1A student with class number 02.

LOAN.DBF:

Field	Field Name	Field Type	Field Width	Contents
1	B_ID	Character	4	Borrower's student identity card number
2	BCODE	Character	8	Book code of the book on loan
3	DDATE	Date	8	Due date for returning the book

BOOK.DBF:

Field	Field Name	Field Type	Field Width	Contents
1	BCODE	Character	8	Book code
2	BTITLE	Character	40	Book title
3	BAUTHOR	Character	20	Author of book

Write SQL statements for the following queries:

- (a) List all records of BOOK with BCODE containing letter "E" in alphabetical order of the book titles. (5 marks)
- (b) List all records of BOOK of which the book title contains "COMPUTER" or "COMPUTING" (5 marks)
- (c) List the titles of all books overdue. (5 marks)
- (d) List the names of 7B students with books overdue. (5 marks)

13. Pacific Cyberworks has recently developed a Dynamic Work Force Management DWFM system to enhance the operation of outdoor customer services, the scheduling of manpower and the work flow of outdoor maintenance team. The system links customer, customer service center and the outdoor service team together for efficient scheduling of jobs dynamically.

The system uses the Internet, enterprise Intranet and wireless networking technology in supporting 2000 service people who are responsible for installing and maintaining telephone, data and leased line services. With the built-in diagnosis functions of the system, the average service time is decreased from 1 hour to 20 minutes.

- (a) Discuss the role of Internet in the operation of such a system. (3 marks)
- (b) Distinguish between Internet and Intranet. (3 marks)
- (c) Why is a wireless network essential to the system? (2 marks)
- (d) Suggest the hardware and software for the customer service center and the service people. Explain your answers. (7 marks)
- (e) Suggest how the service time can be shortened in this case. (3 marks)
- (f) What other applications can make use of such a system? (2 marks)

END OF PAPER

POH Chan Kai Memorial College Computer Applications S7 Mock Exam 2000-2001 Marking Scheme

Section A (40%)

1. A computer virus is a program which can duplicate itself

and spread through electronic means from one computer to another
most of them will damage computer files and the operating system.

1

Ways to avoid infection of a virus worm:

- avoid e-mail attachments both when sending and receiving e-mail /
- never open e-mail attachments with file extensions EXE, VBS, SHS or PIF /
- double check with friends before opening their attachments /
- do not open attachments from e-mail advertisements or other unsolicited email

(Any 2 x 1)
4

2. Spreadsheet / database should be used. 1
 Word processing is not specialized in calculations. 1
 Spreadsheet is simple to use and good at calculations /but not specialized in report printing. 1
 Database is specialized in data processing and report printing but more complicated to use. 1
 4
3. Ergonomics is a subject about creating a healthy working environment with computers. 1
 Prolong typing will cause pain in waist and shoulder. 1
 Avoid prolong typing 1
 and use ergonomic designed keyboards and palm rest. 1
 4
4. For a paperless office, software required are OCR, Microsoft Office. 1,1
 Hardware needed are a computer system, high speed scanners with auto-feed, 1
 and high storage capacity. 1
 4
5. Windows 98 is not an excellent system. 1
 It performs operating system functions such as resource management and user interface. 1,1
 However, the user security is not highly enforced. 1
 4
6. With the advance in information technology, manual labor demand will decrease, 1
 information technology skills will be required in most of the jobs, 1
 types of jobs are shifting to high technology 1
 unemployment of low skill workers and need re-training for high skill jobs. 1
 4
7. The component of Information System are people, procedures, software, hardware and data. 2
 Illustration with any one suitable example:
 Office Information Systems/
 Transaction Processing Systems/
 Management Information Systems/
 Decision Support Systems/
 Expert Systems/
 Integrated Information Systems/ 2
 4
8. Advantages of e-mail over ICQ:
 - record of message 1
 - no need for on-line processing 1
 Advantages of ICQ over e-mail:
 - instant communication 1
 - with virtual identity 1
 4
9. Critical factors for business in the Internet:
 - uninterrupted fast connection 1
 - excellent design of web site 1
 - interactive web pages 1
 - with high security in transaction processing 1
 - good product lines and marketing strategy 4
10. (a) edn 2
 (b) 2 2
 4

Section B (60%)

11.

- (a) (1) =B4*C4 1
- (2) =(B4-D4)*E4 1
- (3) =(B4-D4-F4)*\$H\$1 2
- (4) =B4-D4-F4+G4 1
- 5
- (b) (1) What-if analysis is a process to analyze results under certain expected changes of factors. 2
- (2) change the content of C10 to 30% and 1
- that of E10 to 20% 1
- the total will be obtained in H10 1
- (3) change the content of H3 to 3%*(1+70%) 1
- the results will be displayed in range H4:H10 1
- (4) automatic calculation is turned off 1
- 8
- (c) (1) year, annual premium, discount rate, ncd rate, mib rate 2
- (2) Field Name Type Length
- year numeric 4
- premium numeric 4
- discount numeric 4.2
- ncd numeric 4.2
- mib numeric 4.2 2
- (3) SET FILTER TO year = 1997 1
- ? premium *(1-discount)*(1 - ncd)*(1+mib) 2
- 7
- (Total = 20)

- 12. (a) select * from book where 'E' \$ bcode order by btitle asc 5
- /select * from book where at('E', bcode)>0 order by btitle asc
- (b) select * from book where ('COMPUTER' \$ btitle) or ('COMPUTING' \$ btitle) 5
- (c) select a.btitle from book a, loan b where b.ddate<date() and a.bcode = b.bcode 5
- (d) select name from student, loan where ddate<date() and stu_id= b_id and '7B' \$ stu_id 5
- (Total = 20)

13.

- (a) Internet is the WAN which serves a means of fast electronic communication between the parties. 1
- Information can be passed between the customer, customer service center and the service people. 1
- Interactive processing is allowed. 1
- 3
- (b) Internet is a public WAN while Intranet is a private network. 1
- Internet provides services such as world wide web, electronic mail, newsgroups to everyone. 1
- Intranet provides specific communication applications to a group of people within an organization. 1
- 3
- (c) A wireless network supports high mobility of the outdoor service people. 1
- Built in functions of the DWFM system is allowed at any point of service 1
- within the area of the wireless network. 2
- (d) Customer service center, 1,1
- hardware: minicomputer system with workstations in LAN high speed communication and large storage
- software: operating system, communication software, web server and browser 1,1
- Service people,
- hardware: portable computer, wireless communication network interface 1,1
- software: operating system, communication software and browsers. 1
- 7
- (e) The built-in diagnosis functions of the DWFM can find out any problems and 1
- check connections 1
- with high speed and accuracy. 1
- 3
- (f) Scheduling in transport business 1
- Telecommunications 1
- 2
- (Total = 20)