CAMDEN HIGH SCHOOL

INFORMATION PROCESSES AND TECHNOLOGY

Year 12   2001   HALF YEAR EXAMINATION

Name ……………………….

Reading Time: 5 minutes

Working Time: 2 hours

Section I

Total marks (15)

Attempt Questions 1 – 15

Use the multiple choice answer sheet.

Select the alternative A, B, C or D that best answers the question. Fill in the response oval completely.

Allow about 30 minutes for this section.

Section II

Total marks (50)

Attempt Questions 16 – 20

Use your own paper, starting a new sheet for each question.

Allow about 1 hour and 30 minutes for this section.

1	In a high school library, books can be borrowed by using a borrower's card that has a magnetic strip uniquely identifying the borrower. Which information process is involved when the borrower card is "swiped" to read its magnetic strip. (A) organising (B) processing (C) storing and retrieving (D) collecting
2	At what stage of the system development cycle is it difficult and more expensive to identify and solve problems ? (A) implementing (B) testing, evaluating and maintaining (C) making decisions (D) designing decisions
3	Technical feasibility: (A) compares the costs of developing the new system with the expected benefits (B) determines the information technology requirements of the new system and the technical demands that will be placed on the new system (C) determines whether time is available to implement the new system (D) determines whether the new system will fit into the organisation and meet the current goals and objectives

4	The system development cycle has five stages:
	     a - designing solutions b - implementing c - making decisions
	     d - testing, evaluating and maintaining e - understanding the problem
	 What is the correct order of the system development cycle ?
	 (A) a – b – c – d – e
	 (B) e – c – a – b – d
	 (C) b – e – a – c – d
	 (D) d – a – c – b – e

5	A system flowchart: (A) describes the data within the system (B) is a table that represents all possible conditions and actions (C) is a graphical method of representing a system that uses a number of processes together with inputs, outputs and storage (D) is a graphical method of representing both the flow of data and the logic of a system
6	What information process would be involved in saving information to a floppy disk ? (A) organising (B) displaying (C) transmitting and receiving (D) storing and retrieving
7	A large music collection has been catalogued on cards. The data on the cards is to be put into an electronic database. The data from each card would be entered as a (A) cell (B) field (C) file (D) record
8	Which of the following terms describes the action of reorganising database records into alphabetical order on a given field? (A) selection (B) searching (C) matching (D) sorting

9	The NSW Department of Education won't allow students to be identified on the school web site. This is a case of:
	(A) access
	(B) freedom of information
	(C) privacy
	(D) ethics
10	The primary key of a database
	(A) must be unique
	(B) must be a single field
	(C) identifies records having a required value
	(D) is the field on which the database is indexed
11	As part of a project, a student downloaded a graphic from a website on the Internet. This involves the issue of:
	(A) copyright
	(B) freedom of information
	(C) data redundancy
	(D) privacy
12	The backup media that does not allow direct access to data are:
	(A) magnetic tapes
	(B) floppy disks
	(C) hard disks
	(D) CD-RWs
13	Which of the following would be retrieved by using the query: S*n?
	(A) Singer
	(B) Seasons
	(C) Scandal
	(D) Sunday
14	A business has created a database of clients in Australia. The conditional part of a query to retrieve all clients from Tasmania who are over twenty-five years of age is
	(A) WHERE STATE="TASMANIA" OR AGE<25
	(B) WHERE STATE="TASMANIA" OR AGE>25
	(C) WHERE STATE="TASMANIA" AND AGE<25
	(D) WHERE STATE="TASMANIA" AND AGE>25
15	What is the best way for a video shop to organise data about customers and the videos they rent out ?
	(A) on a website
	(B) in a relational database
	(C) in a flat file database
	(D) as hypermedia

Total marks (50)
Attempt Questions 16 – 20
Allow about 1 hour and 30 minutes for this section

Answer each questions on a separate sheet of paper.
If you include diagrams in your answer, ensure that they are clearly labelled.

Question 16 (10 marks) Use a SEPARATE sheet of paper.   Marks

(a)   Explain what it meant by software that is user-friendly ?   3

(b)   SuperForAll, a superannuation company, implemented a new information system.   1
After one year, many clients were contacting the company to complain that their yearly
superannuation statement contained errors.

At what stage of the system development cycle is it easier and less expensive to identify and
solve problems ?

(c)   Data about student absences are stored in a database. If a note explaining the absence   2
is not received by the school a letter is sent home to the student's parents. Mature age
students attend in some schools. They don't usually live with their parents and can write
their own excuse notes.

How must the present information system be changed to take this into account ?

(d)   An organisation has a receptionist working on its front desk (answering telephone   4
queries, greeting customers, checking employees' availability for meetings, etc). Instead of
replacing the receptionist during lunch and other breaks, management have decided to place
a computer "touch screen" on the front desk. The computer is able to display the name of
each employee, whether they are available and their telephone extension. Any telephone
queries are to be directed automatically to ring on all telephones until someone answers.

What impact would this new system have on the organisation ?

Question 17 (10 marks) Use a SEPARATE sheet of paper.

(a)   Describe two methods of validating data.   2

(b)   A video store has 200 regular customers that usually rent out between 1 and 4 videos   4
per week. The store has a computer system that is used to keep data on the videos and the
customers. The owner of the store wants to increase the number of videos being rented out
each week.

Briefly outline some changes that could be made to the existing information system.

(c)   A school has excellent HSC Art projects. The principal has decided to enable anyone   4
to see an image of each project on the school's web site.

How can this be achieved and what considerations must be taken into account ?

Question 18 (10 marks) Use a SEPARATE sheet of paper.

(a)   A car company keeps the record of details of all people enquiring about new cars. The salesperson fills out a card and stores each card in a manual filing system. As the company grows, management decides to store these details using an electronic flat file database. The information is still entered on cards but is then entered into the computer each week by the office staff. The name of the file is 'CAR SALES'.

      (i)   The company finds the use of the electronic flat file database quicker and easier than the manual system. Explain TWO other advantages for the company in using an electronic database compared to using the manual filing system.   2

      (ii)   Discuss TWO design features of a database screen layout that will assist the data entry operator when using the system.   2

(b)   A central library database is being designed to service a number of regional branches. This database will be used to record, for each book, the title, author, publisher, year of publication and cost, as well as the location of the book and its subject area.

      (i)   Draw a screen layout suitable for data entry by *staff* with little skill in using computers.   2

      (ii)   Borrowers will use the database to *search for books*. Which fields should be displayed on the *borrower's* input screen? Justify your answer.   2

(c)   When I searched the Internet for a particular topic I found conflicting information.   2

How can you verify the truth of information that has been published on the Internet ?

Question 19 (10 marks) Use a SEPARATE sheet of paper.

(a)   What is a Gantt chart used for ?   1

(b)   Solutions to past HSC examinations are published by a company as a booklet of about 10 exams and their possible solutions for each main subject studied at HSC level. This year management has decided to include a CD with each booklet containing the same information, that can now be searched using keywords using a computer.   4

Explain the type and function of any information technology needed to produce this CD.

(c)   At a university library, a student is able to borrow special "closed reserve" books by giving their student card to the library attendant. They can then read, take notes or photocopy sections from this book. When they have finished, the book is returned to "closed reserve" and their student card given back.   5

If any damage to the book is discovered the university library is unable to identify the students who have borrowed the book.

Briefly outline a solution to this problem describing any information processes involved.

Question 20 (10 marks) Use a SEPARATE sheet of paper.

(a)   Describe two types of storage media used by information systems.   2

(b)   "The increased use of the Internet has led to some problems."   3

Do you agree or disagree with this statement, with regard to individuals, society and the environment ? Justify your answer.

(c)   Outline a new information system for "catching up" on your school work after an   5
absence.