Year 12

INFORMATION PROCESSES & TECHNOLOGY

Mid Semester Examination

Tuesday 8th May 2001

Examination Duration: 2 Hours

Instructions:

Complete all sections of the paper.
Clearly mark each page with your student information
Only write answers in blue or black pen.
Pictures, diagrams and sketches should be completed in pencil or red pen.
No calculators are to be used in this examination
Mark your responses to Section I – on the multiple choice answer sheet (GREEN)
Write your responses to Section II – on the written response answer sheet. (BLUE)

Office Use Only – Do not write anything below

Section I Multiple Choice	/20
Section II Written Response	/30
Total	/50

Section I

Multiple Choice

Write your responses on the green answer sheet

1. Wavollarah Shire Council has mandated that a Voice Mail System (VMS) be implemented so that more efficient communication between its ratepayers, councillors and employees can be facilitated. At its most recent council meeting, the following points were raised by all parties. Choose the best reason that supports its non – implementation.

    a) Employees will use the system for personal gain.

    b) Councillors won't have to pass by the receptionist's desk to retrieve messages.

    c) The receptionist won't have to waste time writing down messages and can attend to customers seeking direction.

    d) The technologically illiterate councillors would prefer to see the funds being spent on an expensive VMS, being appropriated towards housing the hundreds of homeless in the shire.

2. The five basic components of any communications system are:

    a) Receptionist, employee, VMS, digital, analogue.

    b) Protocols, handshaking, Speed of transmission, Error Checking, Communications settings.

    c) Bits per second, Data bits, Parity, Start / Stop bits, flow control

    d) Data source, Transmitter, Transmitting medium, Receiver and Destination

3. A parent wishes to communicate with a teacher at Waverley College via e-mail. The parent's ISP is Telstra Big Pond and uses Telstra's email. The parent is drafting up a letter over a period of hours. Where does the unsent email reside?

    a) On the parent's computer?

    b) On the Waverley College computer?

    c) On an intermediary computer?

    d) On the Telstra Big Pond computer?
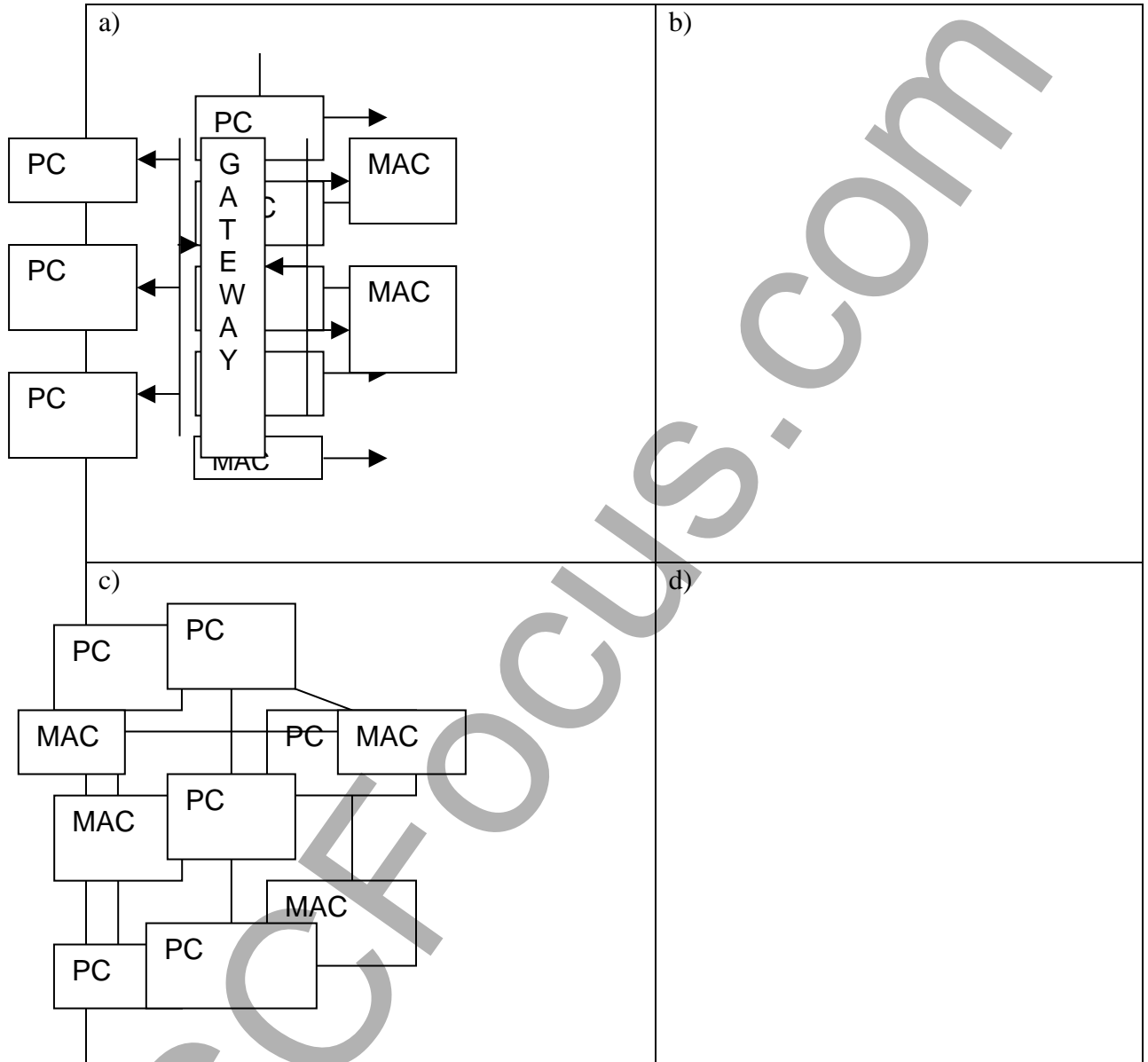
4.   Modems can be either internal or external to a computer. Regardless of how they are plugged in, what factors influence their productivity?

   a)   Band width, Error checking and Communications settings.

   b)   XON, OSI, CRC, ISDN and dB systems.

   c)   Baud, circular referencing, cable connection, Hub, RJ45 connector.

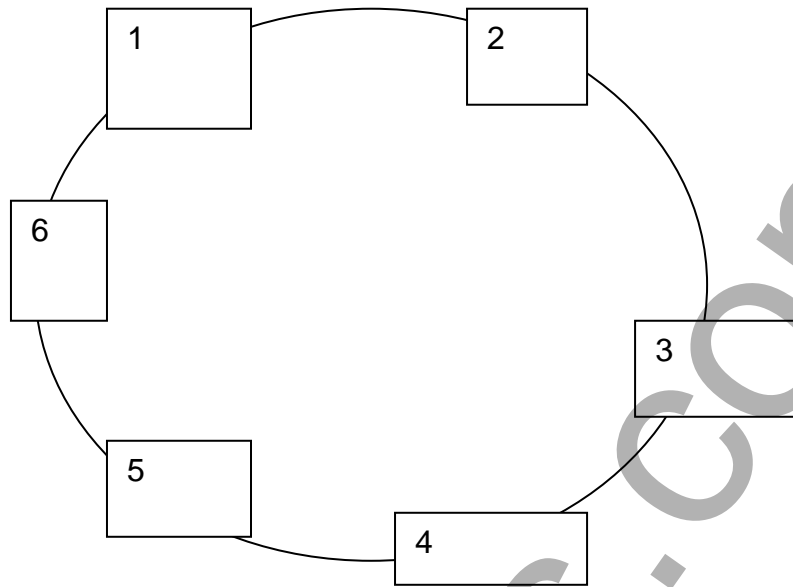   d)   Bits per second, Microsoft Windows software.

5.   EFTPOS - Electronic Funds Transfer at Point Of Sale, is a system that allows people to purchase goods and services using a credit or debit card. Which of the following statements, best describes the process involved in using EFTPOS?

   a)   Customer selects goods, Cashier totals transaction, Cashier hands change to customer, Customer asks for receipt, Customer leaves store.

   b)   Customer selects goods, Cashier totals transaction, Customer pays bill with debit card, Cashier swipes card, Money is transferred from customer to store account, Cashier hands receipt to Customer and Customer leaves.

   c)   Customer selects goods, Cashier totals transactions, Customer hands over credit card, Cashier places credit card in imprinter, Cashier places carbonised credit voucher over card and slides over imprint, Cashier writes details on voucher, Customer signs voucher, gets receipt and leaves.

   d)   Customer selects goods, Cashier totals transaction, Customer uses debit card to pay, Cashier swipes card and enters amount of purchase, Customer is prompted for PIN, transaction is approved / disapproved, amount is transferred in to store account, Cashier completes transaction and prints a receipt for the customer, Customer leaves.

6.   The Binjarna Corporation is currently using a collection of PC's and Macintosh computers in a network topology best represented by which of the following diagrams?

7.   The following diagram represents a token ring network:

At one instant in time there an empty token at computer 4 and three other computers want to transmit messages along the network. Computer 3 wants to send a message to computer 6, computer 6 wants to send a message to computer 2 and computer 1 wants to send a message to computer 4 the best description of the activity on this network is:

a.   The token picks up message from computer 3. Goes around to computer 6 and delivers message. Token then picks up the message from computer 6 and delivers message to computer 2. Token then goes around network to computer 1 picks up message and delivers message to computer 4

b.   The token picks up the message from computer 3. Token delivers the message to computer 6. The token then returns to computer 3 to empty token. Token then picks up message from computer 6 and delivers message to computer 2. The token then returns to computer 6 where it empties itself. Token then goes on to computer 1 and collects message to deliver to computer 4. The token then returns to computer 4 to empty itself.

c.   The token picks up the message from computer 6. Token delivers the message to computer 2. The token then returns to computer 6 to empty token. Token then picks up message from computer 1 and delivers message to computer 4. The token then returns to computer 1 where it empties itself. Token then goes on to computer 3 and collects message to deliver to computer 6. The token then returns to computer 4.

d.   The token picks up the message from computer 6. Token delivers the message to computer 2. The token then returns to computer 6 to empty token. Token then picks up message from computer 1 and delivers message to computer 4. The token then returns to computer 1 where it empties itself. Token then goes on to computer 3 and collects message to deliver to computer 6. The token then returns to computer 3 to empty itself.
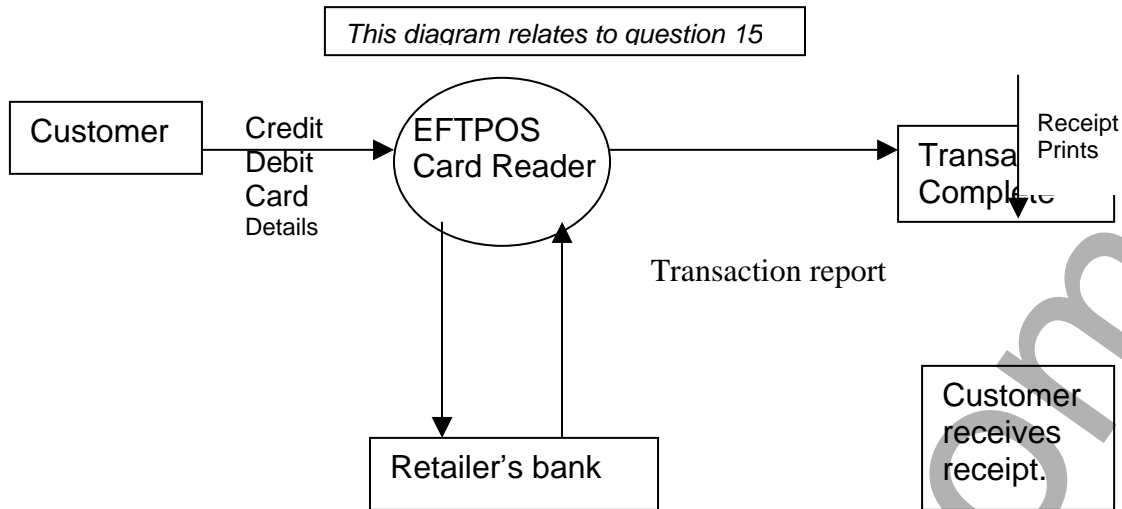
8.

Minnamurra Resources Ltd has mining leases scattered over the state of Western Australia. To enhance management of each site, communications links are being established to facilitate real time retrieval of data.   Most sites are inaccessible during the monsoon season. Which combination of transmission media would you suggest they use to build their WAN.

a)   Microwave for D,E,F,G; Satellite for A,B,C.

b)   Satellite only.

c)   Microwave for A,B,C, with fibre for C to G, F, D and E

d)   Fibre from A,B,& C, satellite for D,E,F,G

9. In the systems development cycle, the cycle does not end with the testing, evaluating and maintaining stages. It is:

a)   Always striving to understand the problem.

b)   Always implementing a new system.

c)   An ongoing process.

d)   A solution for the future.

10. Minnamurra Resources Ltd wants to manage the implementation of their WAN as well as work toward ensuring all subsequent projects are managed efficiently. The executives should use one of the following to assist their projects:

a)   Information Management software

b)   Project Management software

c)   A GANTT chart

d)   Mobile phone equipped foremen.

11. Within a team, the role description of a programmer is best described as:

    a) Develops schedules, checks work and resolves conflict

    b) Convert a written description of a problem into a set of programs and provides documentation.

    c) Converts an analysts solutions into documented programs ready for implementation.

    d) Responsible both for developing the project plan and ensuring it is implemented correctly.

12. In consideration of IT environmental factors, choose the correct figures:

    a) Air temp should range between 20°C and 28°C, Relative humidity should be between 30 and 70 %

    b) Air temp should range between 20°C and 28°C, Relative air movement should be less than 0.1 m/s

    c) Air temp should range between 20°C and 23°C, Relative humidity should be between 30 and 70 %

    d) Air temp should range between 20°C and 28°C, with noise levels above 55 decibels and below 120 decibels.

13. A library has its database of its books. The primary key is most likely to be:

    a) The book's Dewey decimal number e.g 629.994 HOW

    b) The book's Author's surname

    c) The title of the book

    d) The publisher's name

14. The distinguishing feature between a flat file database and a relative database is:

    a) Relative databases have a primary key; flat file databases do not.

    b) Relative databases have no schema and flat file databases are hierarchical.

    c) Flat file databases are a two-dimensional table and relative databases are a collection of flat file databases.

    d) Flat file databases are the backbone of a DBMS

This diagram relates to question 15

15. The best statement that describes the activity above is:

   a) A decision tree representing the interactivity of an EFTPOS transaction.

   b) A data flow diagram showing all of the tasks needed to be performed for a successful transaction.

   c) A decision table representing all possible outcomes in an EFTPOS transaction.

   d) A data flow diagram showing the tasks that need to be performed and completed by the EFTPOS system.

16. A query in a database uses a wildcard to search in the form Plate Number = "A??321". Below are some number plate's available for selection.

   i) ABC 321

   ii) AB 321

   iii) AEG 321

   iv) A8ACAT

Which of the above would have been retrieved?

   a) i only

   b) i and iii only

   c) i and ii and iii only

   d) iv only

17. Peter joins a video library. He receives a membership card with a magnetic strip on the reverse of the card. When Peter went to borrow a video, the shop assistant swiped the card and also physically entered Peter's membership number. This double entry procedure is an example of:

    a) Data security

    b) Data integrity

    c) Data validation

    d) Data redundancy

18. A pharmaceutical company has developed software to track a doctor's patient. It is a database of the patient's medical history of treatment. The pharmaceutical company plans to use the data in accordance with privacy regulations. The specific term applied to this type of information is:

    a) Data integrity

    b) Data mining

    c) Meta data

    d) Database

19. A "spider" is used in a search engine:

    a) To conduct keyword searches.

    b) To keep a list of URL's for webpages containing keywords.

    c) To follow hyperlinks on the WWW and send appropriate URL's back to the search engines indexing software.

    d) "Spider" is an inappropriate term in regards to search engines.

20. Boolean qualifiers are:

    a) Used by search engines to refine a search.

    b) Only found in flat file databases

    c) Defined as +, -, *, and /

    d) Not necessary in complex web searching.

Student Number ....

Section II

Written Response

Write your responses on the blue answer sheet

Question 21.   (**10 marks)**

The following is a sample of the data from the STAFF FILE database at Waverley College:

Teach ID	Teach Surname	Teach Firstname	Teach Title	Teach Location	Teach Pic
IL	Lesslie	Irene	Miss	CIS	Y
DH	Hearne	Dominic	Mr	CIS	Y
JV	Jess	Valix	Miss	Mathematics	N
MT	Monica	Thom	Ms	Geography	Y
PB	Phoebe	Guirguis	Miss	Mathematics	N
NF	Nicole	Frykburg	Ms	Maths	Y
MT	Marylin	Tanner	Miss	HSIE	N
SF	Simon	Fraser	Mr	Mathematics	Y
JV	Jess	Valix	Miss	Mathematics	N

a)   Write down the result of the following query: *1 mark*

SELECT Teach Title, Teach Surname FROM STAFF FILE
WHERE Teach Title = "Miss" AND Teach Title = "Ms"
AND Faculty = "Mathematics"

b)   A touch screen information kiosk is to be provided for use by   *4 marks*
visitors, staff and students in the front foyer of Waverley College, so
that staff can be identified and located. Giving reasons, discuss the
feasibility of this project, in terms of security and privacy.

c)   On your answer sheet, draw a sketch of how the touch screen should   *5 marks*
look.

Student Number ....

Question 22. (**10 marks)**

Question 23

Australian Post is a governmental organization that delivers mail and parcels. It is also a transaction processing point as customers can pay utilities and other accounts.   Australia Post is also emerging into the retail market selling Philatelic collections, stationery and gifts.

Australia Post has shops and agencies Australia wide. Most transactions involving collection of revenues for other companies / businesses are recorded using the GIROPOST system.

a) Identify the transmission medium that GIROPOST uses.   *1 mark*

b) Identify the participants in this system and describe the IT required to   *4 marks*

    support communication between them. You may use a diagram

c) Discuss the impact that IT may have had on some participants in this   *5 marks*

    system.

End of Examination