SOUTH PACIFIC BOARD FOR EDUCATIONAL ASSESSMENT

PACIFIC SENIOR SECONDARY CERTIFICATE

Marker Code

Candidate Code					

COMPUTER STUDIES

1999

QUESTION AND ANSWER BOOKLET

Time Allowed: 2 hours

INSTRUCTIONS

1. Before you start, write your candidate code on this page and on the back flap.
2. Attempt **ALL** questions.
3. The answer sheet for Section A is found on the fold out flap on the last page of this booklet. Answers for Section B are to be written on the spaces provided in this booklet.
4. The paper is marked out of 100 and marks are apportioned as follows:

Section	Comments	Marks	Suggested Time
A	There are 20 Multiple Choice questions.	20	24 minutes
B	There are 5 Short Answer questions. **All are compulsory**.	80	96 minutes

SECTION A: MULTIPLE CHOICE

(20 Marks)

Answer all questions.

*Write the LETTERS of the best answers in the boxes on the **back flap**.*

If you change your mind, put a line through the first answer and write your new choice beside the box.

1. Computers contain a **microprocessor**. A microprocessor is

A. a set of instructions in Machine Code.
B. a part of the Basic Input Output System (BIOS).
C. a large scale integrated circuit made from silicon.
D. a video display system developed before computer technology.

2. A **mouse** belongs to which category ?

A. Software
B. Hardware
C. Firmware
D. Shareware

3. **ROM** is used for storing

A. overflow from RAM.
B. temporary information only.
C. output from the Central Processing Unit.
D. instructions for the start up sequence of a computer.

4. A **Hard Disk** stores information as a sequence of

A. electrical pulses.
B. magnetic dipoles.
C. light and dark optical barcodes.
D. up and down steps in the disk surface.

5. A back-up should be created for **all** important files. This can be done by

A. printing the files.
B. copying the files into RAM.
C. moving the files to a new directory (folder).
D. copying the files onto a floppy disk or other external storage device.

6. A **menu** is a device that

A. issues commands to a computer.
B. receives output from a computer.
C. processes long lists of data with a computer.
D. never sends information to the operating system of a computer.

7. You have a file called **test1** on a floppy disk. You use the operating system to **copy** it to the directory (folder) called **form6** on the hard drive. When you finish you will have

A. only one file called test1.
B. two separate files both called test1.
C. two separate directories both called form6.
D. an error message because the operating system cannot do this.

8. **Directories (folders)** let a computer operator

A. open a file directly.
B. store files in a logical and ordered way.
C. create new files whenever she wants to.
D. save all new files in the root of a floppy disk.

9. Which structure shows the document **trees.doc** saved in the **forest** directory (folder) on the **a:** drive?

A. a:\forest\trees.doc
B. trees.doc\forest\a:
C. a:\trees.doc\forest
D. trees.doc:forest:a:

10. Software companies (like Microsoft) are the only ones permitted to copy and distribute their software. This is because they own the

A. copyright.
B. distribution channels.
C. floppy disk on which the software is saved.
D. computer on which the software was created.

11. While using a word processor you highlight some text and choose **cut** from the **edit** menu. What happens ?

A. Nothing at all.
B. The highlighted text disappears from the computer altogether.
C. The highlighted text is removed from the screen and placed on the clipboard.
D. The highlighted text remains on the screen and is also placed on the clipboard.

12. Which **tab** is needed to **correctly** align numbers in a column?

A. Left
B. Right
C. Decimal
D. Justified

QUESTIONS 13 TO 16

The **actual entries** in the cells of a spreadsheet are shown in the diagram below.

	A	B	C
1	Name	Amount	Tax
2	Moala	$10.00	=B2*0.1
3	Seth	$54.00	=B3*0.1
4	Jones	$35.20	=B4*0.1
5			

13. What is the entry in **Cell B2** known as?

A. Data
B. A label
C. A formula
D. A calculation

14. If the **total tax** is to be calculated in cell C5, which of the following entries will do this correctly?

A. = A4+B4+C4
B. = SUM(C2:C4)
C. = SUM(B2:B4)
D. =C1+C2+C3+C4

15. Cell C3 is copied and pasted to cell B5. What is the **actual entry** that is written to cell B5?

A. =B3*0.1
B. =B3*C3
C. =A5*B5
D. =A5*0.1

16. In this spreadsheet which cell contains an **absolute reference** to another cell?

A. Cell A2
B. Cell B3
C. Cell C4
D. No cell

QUESTIONS 17 TO 20
A list of equipment used in a school includes the following three items. These are shown entered into a **database**:

ITEM	SIZE	LOCATION	QUANTITY
Desk	2 seater	Room 5	15
Chair	1 seater	Library	30
Chalk	1 box of 100 sticks	Room 1	500

17. What are the **columns** and **rows** called in a **database**?

A. Fields and Records
B. Records and Fields
C. Fields and Strings
D. Strings and Fields

18. The **ITEM** column is sorted in a **descending alphabetical** order. In what order will the items now be listed?

A. Desk, Chair, Chalk
B. Chalk, Chair, Desk
C. Desk, Chalk, Chair
D. Chair, Chalk, Desk

19. Why is a **database** used in this situation instead of a spreadsheet?

A. Because the spelling checker can check the data.
B. Because calculating with the data is the greatest priority.
C. Because processing non-numeric data is the greatest priority.
D. Because it requires less time to enter the information into a database.

20. What type of data is entered into the **QUANTITY** column in the database?

A. Text
B. Numeric
C. Calculation
D. Alphanumeric

SECTION B: SHORT ANSWERS

(80 marks)

Answer ALL five questions.

Each question is worth 16 marks.

QUESTION ONE

(a) A school in the tropical South Pacific decides it must buy a computer. This computer will be used to help run the school. Write a list of **four hardware specifications** that the computer should have.

_____ _____

_____ _____

(2 marks)

(b) The school will keep a lot of its information on the computer.

(i) Which **computer device** is used for long term storage of information?

_____

(1 mark)

(ii) Describe one **physical** way that the stored information of question 1 (b) (i) can be damaged.

_____

_____

(1 mark)

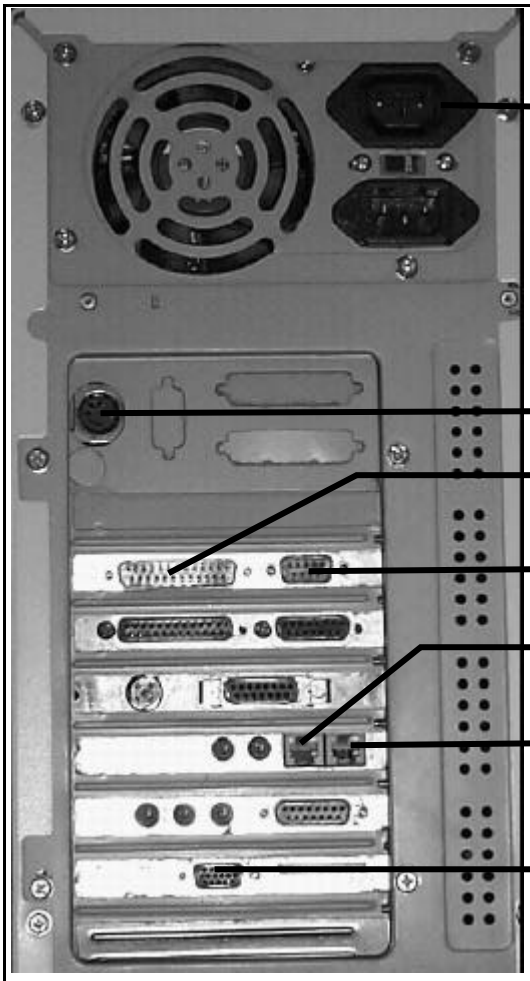
(iii) Information **cannot** be stored long term in RAM because RAM is volatile. What does **volatile** mean?

_____

_____

(1 mark)

(c) The school buys the computer. When the Principal unpacks it the **back** of the machine looks like this.



Name the component whose lead should be connected to the socket labelled:

(i) **serial** _____

_____

(1 mark)

(ii) **parallel** _____

_____

(1 mark)

(iii) **230vAC** _____

_____

(1 mark)

(d) The Principal decides to put the computer in the staff room so staff can use it.

(i) Explain why this room should be **air conditioned**.

_____

_____

(1 mark)

(ii) Give two reasons why the Principal should also install a **UPS**.

1. _____

_____

(1 mark)

2. _____

_____

(1 mark)

(e) The school's computer needs to store files relating to different aspects of the school. These include: the canteen; Principal's letters; school accounts; and subject departments. The Principal has letters coming **in** and going **out**. Subject departments are English, Mathematics, Science, and Geography.

(i) Draw a suitable **directory (folder) structure** for this school. Include the root directory (folder) in your diagram. Draw your diagram in the space below.

(3 marks)

(ii) The Mathematics Department saves a file **test.doc** on the computer. Write the complete path, **according to your diagram** in question 1 (e) (i), for the best place to store this file.

_____

(1 mark)

(iii) The file **test.doc** is still open. Describe how you would **copy** this file to a floppy disk without closing it.

_____

_____

(1 mark)

16

QUESTION TWO

A school in the South Pacific purchases a new computer. The computer is delivered to the school with its **operating system** already installed.

(a) (i) What is an **operating system**?

_____

_____

(2 marks)

(ii) **Name** one operating system.

_____

(1 mark)

(iii) **Describe** how the Principal would use the operating system to **copy** a file from the hard drive onto a floppy disk.

_____

_____

(1 mark)

(b) The **internal clock** on the computer was not set to the correct local time when it was delivered. Describe how the clock could be adjusted to the correct time.

_____

_____

(1 mark)

(c) The following day the Principal turns on the computer. An error message appears that says the computer is trying to boot from a **Non System Disk.** The computer stops its boot sequence and waits.

(i) What is causing the problem?

_____

_____

(1 mark)

(ii) If the fault is not corrected, what would happen if the computer was re-started using a **warm reboot**?

_____

_____

(1 mark)

(iii) How can the Principal correct the error that is causing the error message?

_____

_____

(1 mark)

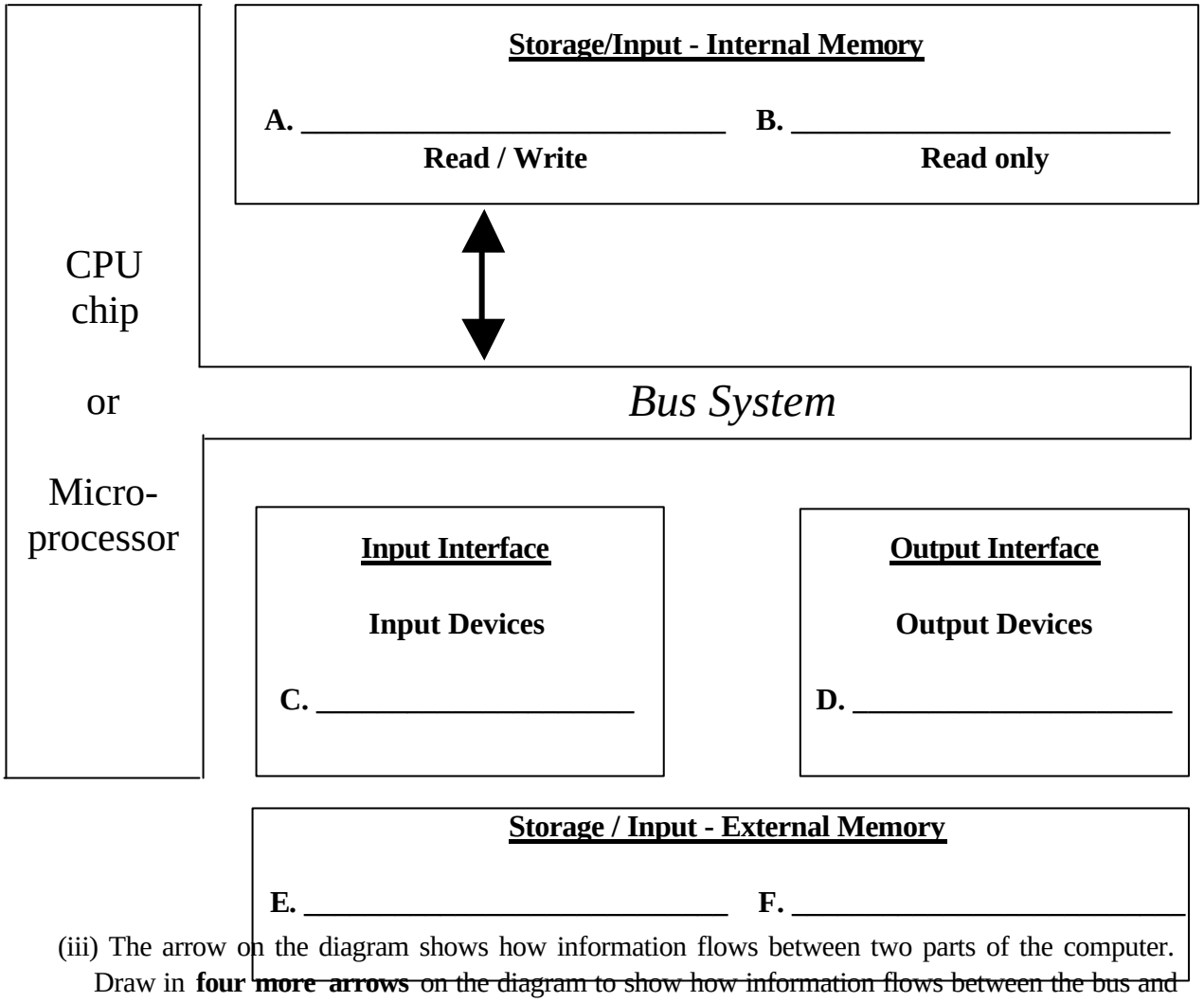
(d) The Principal gets the computer working properly and then uses a CD-ROM encyclopedia to do some research about computer systems.

(i) What does **CD-ROM** stand for?

_____

(1 mark)

(ii) The Principal finds a diagram in the encyclopedia about computer systems. This diagram is shown below, **but it is not complete.** Read the diagram below and **fill in each of the spaces labeled A to F** with the name of **one** item that fulfills that category. (3 marks)



(iii) The arrow on the diagram shows how information flows between two parts of the computer. Draw in **four more arrows** on the diagram to show how information flows between the bus and the other parts of the computer. (2 marks)

(e) The Principal wishes to make a **bootable disk** for the computer. Describe how this can be done with an **unformatted 3.5" floppy disk**.

(2 marks)

16

QUESTION THREE

A school in the South Pacific buys a new computer. The school then starts to use this new machine.

(a) One day a staff member tries to save a file onto his own floppy disk. Suddenly this message appears on the screen:

> Warning: the boot block of the floppy disk in the floppy drive is infected with the *appolyon* virus!!

(i) What type of **application** produced this message?

_____

(1 mark)

(ii) **Describe** one thing the staff member can do to remove the *appolyon* virus.

_____

_____

(1 mark)

(iii) Describe **one advantage** of the removal method you described in question (3) (a) (ii).

_____

_____

(1 mark)

(b) The school makes a policy that it will **not** allow any **pirated software** to be used on its computer.

(i) Explain what **pirated software** means.

_____

_____

(1 mark)

(ii) Give **two reasons** why a school might make such a policy.

1. _____

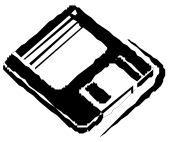
_____

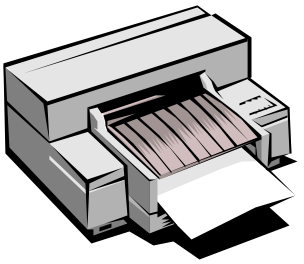
2. _____

_____

(2 marks)

(c) When buying the computer the school was supplied with a **printer** and associated **printer driver** on disk. They looked like this.





(i) Circle the picture of the item that contains only **software**.

(1 mark)

(ii) Explain why the software in question 3 (c) (i) is **system software**.

_____

_____

(1 mark)

(d) The Principal creates a message using a **wordprocessor**. Here is the message. **It is shown actual size**.

Reminder to

all staff members

Remember to meet in the libbrary today after school.

(i) Describe **one difference** in the fonts used in the message.

_____

(1 mark)

(ii) The first paragraph is double spaced. What **line spacing** did the Principal use in the second paragraph?

_____

(1 mark)

(iii) When the Principal runs the **spelling checker** on her document what message appears?

_____

_____

(1 mark)

(iv) Describe the paragraph **formatting** that has been applied to the first paragraph.

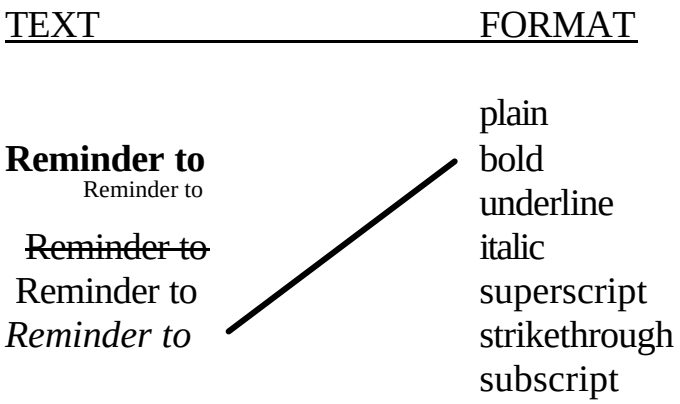
_____

_____

(2 marks)

(v) The Principal experiments with the format of the message. She adjusts the look of the words "**Reminder to**". In the table below draw a line from the text to the correct **format** description. (The first one is done for you.)

(1 mark)



(vi) How can you tell that **centre** formatting has been applied to the diagram in the message?

_____

_____

(1 mark)

(vii) Explain why the message should be saved **before** attempting to print it.

_____

_____

(1 mark)

16

QUESTION FOUR

A school in the South Pacific buys a new computer.

(a) The school canteen decides to keep its business records on a **spreadsheet** on the computer. The canteen sells bags of peanuts for 20 cents each. These bags of peanuts cost the canteen 7 cents each. On the chart below show the **entries** in a spreadsheet that could be used to calculate the profit for each bag sold. Make sure you label the entries correctly.

(3 marks)

	A	B	C	D
1				
2				
3				
4				

(b) The canteen keeps a record of the number of bags of peanuts sold each day for a week. Here is the information as it appears on the screen of the computer in a spreadsheet application:

	A	B	C	D
1	**WEEK ONE**	**ITEMS SOLD**		
2	**DAY**	**PEANUTS**		
3	**Mon**	25		
4	**Tue**	40		
5	**Wed**	38		
6	**Thu**	17		
7	**Fri**	24		
8	**TOTAL**	144		
9	**AVERAGE**			

(i) Describe the **function** that is entered into **cell B8**.

_____

_____

(1 mark)

(ii) Write down a suitable **entry** that will give the required answer in **cell B9**.

_____

(2 marks)

(c) The canteen also keeps a record of the number of ice blocks sold. Here is the information:

Mon 15; Tue 12; Wed 21; Thu 19; Fri 1121.

i) Which number is probably **incorrectly** recorded?

_____

(1 mark)

(ii) Explain **why** you think this number is wrong.

_____

_____

(1 mark)

(d) The canteen soon expands its spreadsheet to include other sales. Here is the expanded sheet:

	A	B	C	D	E
1	**WEEK ONE**	**ITEMS SOLD**			
2	**DAY**	**PEANUTS**	**PIES**	**BONGOS**	**CHIPS**
3	**Mon**	25	8	15	29
4	**Tue**	40	4	13	35
5	**Wed**	38	10	14	26
6	**Thu**	17	13	12	43
7	**Fri**	24	9	16	39
8	**TOTAL**	144			
9	**AVERAGE**				
10					

(i) Explain why the numbers shown in the spreadsheet are formatted with zero decimal places.

_____

(1 mark)

(ii) The formula

=max($B$3:$B$7)

is entered into cell B10. It is then spread across to cell E10. What **value actually appears** in cell E10?

_____

(1 mark)

(iii) Write down the correct formula that should have been placed in **cell B10** in the first instance.

_____

(1 mark)

(iv) Explain the difference between **absolute cell references** and **relative cell references**.

_____

_____

_____

_____

(1 mark)

(e) The canteen calculates its profit for the week by entering some calculations at the bottom of the spreadsheet. These are shown in the diagram below.

	A	B	C	D	E
1	**WEEK ONE**	**ITEMS SOLD**			
2	**DAY**	**PEANUTS**	**ROLLS**	**BONGOS**	**CHIPS**
3	**Mon**	25	8	15	29
4	**Tue**	40	4	13	35
5	**Wed**	38	10	14	26
6	**Thu**	17	13	12	43
7	**Fri**	24	9	16	39
8	**TOTAL**	144			
9	**AVERAGE**				
10					
11	**Profit per sale**	$0.13	$0.54	$0.35	$1.05
12	**Weekly Profit**	= B8*B11			
13					

The formula

= B8 * B11

is entered into cell B12, as shown. This is then spread to cell E12.

(i) On the spreadsheet on page 18 draw **one rectangular box** around **all** the cells that should be **formatted as currency**.

(1 mark)

(ii) What format has been applied to the **labels** in the spreadsheet?

_____

(1 mark)

(iii) Suppose the profit on each sale of peanuts can be increased by 2 cents if a different supplier is used. Describe how the canteen could run a **what-if analysis on their spreadsheet** to find the new weekly profit.

_____

_____

(1 mark)

(iv) Describe how the canteen could use the spreadsheet to create a **pie graph** showing how each product contributes to the weekly profit.

_____

_____

_____

_____

(1 mark)

16

QUESTION FIVE

A school in the South Pacific buys a new computer to help run the school.

The Head of Science puts information about the Science Department's equipment into a **database** on the computer.

The table on this page is a **small part** of the information in the database of Science Department equipment.

Room	Subject	Item	Quantity	Date purchased
9	Physics	Tickertimer	5	1 Feb 85
10	Physics	Spring	10	12 May 94
10	Chemistry	Test-tube	148	2 Mar 98
9	Biology	Scalpel	5	6 Jul 84
8	Chemistry	Boiling Flask	24	15 Nov 89
8	Biology	Aquarium	3	30 Apr 90
10	Biology	Hand Lens	16	3 May 98
9	Chemistry	Bunsen Burners	7	12 Jun 79
8	Physics	Trolley	2	9 Oct 96

(a) (i) Describe **one advantage** in using a database for such a task.

_____

_____

(1 mark)

(ii) On the table above draw a rectangle around any **one complete record**.

(1 mark)

(iii) Based on the table above what size should the **Subject** field be?

_____

(1 mark)

(iv) What type of field is the **Quantity** field?

_____

(1 mark)

(v) If the **Date Purchased** field is sorted in ascending order which **Item** appears at the top of the Item field?

_____

(1 mark)

(b) (i) The Head of Science wants a hard copy of all Physics equipment listed in alphabetical order. Describe the three steps needed to achieve this.

1. _____

2. _____

3. _____

(3 marks)

(ii) Use only the information given in the table on page 20. Write down **one** possible way the report of question 4 (b) (i) could look.

_____

_____

_____

_____

_____

_____

(1 mark)

(c) The Head of Science wants to find all the **Chemistry equipment** that is stored in Room 9. To do this she applies these conditions to the database:

Subject = "Chemistry" AND Room = "9"

(i) Explain what the **logical AND statement** does in this situation.

_____

_____

(1 mark)

(ii) How many records **from the table shown on the previous page** are selected by this query?

_____

(1 mark)

(d) The Head of Science wants to know if any equipment is older than 15 years. **Describe** in general how this could be done using the database she made.

_____

_____

_____

(1 mark)

(e) The Head of Science needs to find all the equipment purchased in 1998. She gets an appropriate **report** from the database. This is what the report looks like:

EQUIPMENT PURCHASED IN 1998

ROOM	ITEM	QUANTITY
10	Test tubes	100
10	Hand Lens	15

(i) Explain why the report has **only three fields** in it.

_____

_____

(1 mark)

(f) Databases can be useful in many real-life situations.

.(i) **Name** one database program.

_____

(1 mark)

(ii) Give **one example** where a database would be a useful tool to employ.

_____

_____

(1 mark)

(iii) Explain **why** it is important to keep data in a database **up to date**.

_____

_____

_____

_____

(1 mark)

16

Candidate Code					

ANSWER SHEET
MULTIPLE CHOICE

Remember you are to write the letter of the correct answer only.

Marker Use Only

1 .		11.	
2.		12.	
3.		13.	
4.		14.	
5.		15.	
6.		16.	
7.		17.	
8.		18.	
9.		19.	
10.		20.	

estion Nc	Mark
1	16
2	16
3	16
4	16
5	16
M/C	20
TOTAL	100