

Answer Sheet

Name: _____

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COMPSCI 111 SIC

History of Computers (10 marks)

1. Each new generation of computers has been associated with a particular advance in technology. Name the technology advance for each of the five computer generations, as well as the pre-computer period.

Technologies to choose from:

<i>Automobile</i>	<i>Transistor</i>	<i>Mainframes</i>	<i>Mechanical Machines</i>
<i>Vacuum Tube</i>	<i>The Wheel</i>	<i>Super Computers</i>	<i>Microchips</i>
<i>Integrated Circuits</i>	<i>Unknown as yet</i>	<i>Quantum Computing</i>	<i>Artificial Intelligence</i>

Pre-Computer Period:

Mechanical Machines

1st Generation:

Vacuum Tube

2nd Generation:

Transistor

3rd Generation:

Integrated Circuits

4th Generation:

Microchips

5th Generation:

Unknown As Yet

*NB: Marks were deducted if multiple INCORRECT answers were given.
(e.g. placing "the wheel" at 3rd generation)*

(6 marks)

2. VisiCalc was a very important piece of software for Macintosh, and in fact the whole computing industry. What exactly was VisiCalc and why was it so important to the success of Macintosh during the late 70's and 80's?

It was a spreadsheet.

Only Macs could run it, so people bought a mac to use this program

(2 marks)

3. The IBM PC architecture was very successful, so successful that we still use it today. Although they made a lot of money in the beginning, IBM ended up losing a lot of money and left the PC market. What was it that caused this loss? What was it about their *architecture design* that allowed this to happen?

They used an open architecture. Clone PCs ended up being cheaper and then better than IBM PCs

(2 marks)

CONTINUED

Hardware and Software (10 marks)

4. An operating system is an example of system software. All operating systems contain at least the components listed below. **Briefly describe in one sentence** what each of these does.

Marked VERY easily...

Supervisor or Kernel:

Controls processes/CPU time allocation

User Interface:

The graphical or command-line interface that the user uses to control the computer

Memory Manager:

De/Allocates memory blocks for use. Controls virtual memory.

I/O Control Drivers (Device Drivers):

Interfaces with the hardware of the computer

(4 marks)

5. Name three different types of data storage. (They can be primary or secondary storage) For each one, describe either **one advantage or disadvantage** when using that memory.

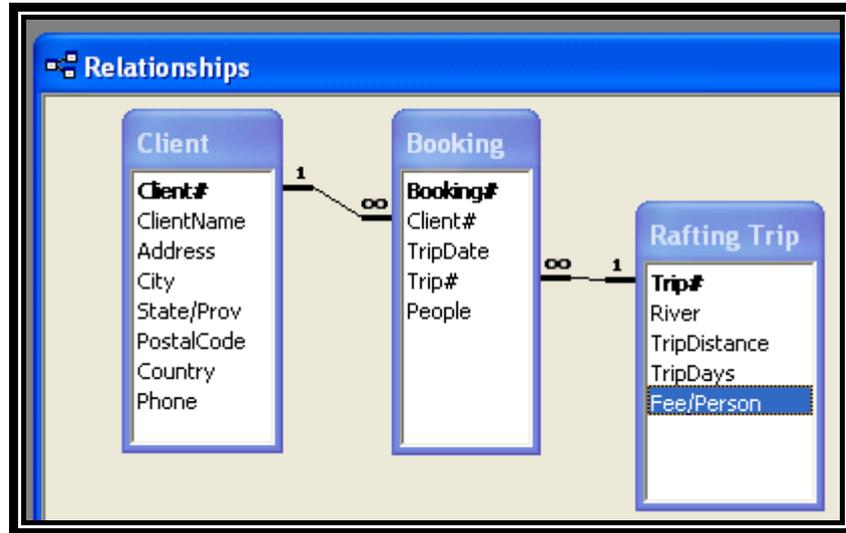
NB: The advantage/disadvantage should be specific to the memory you have listed. "Good for storing files" is not good enough as an answer!

Far too many to list. Read your notes...

(6 marks)

Database (20 marks)

Use the following relationship diagram to answer the following database questions.



6. For each table, list the primary key and any foreign keys that may exist. Make sure you *clearly label* which are the primary and foreign keys. (e.g. "P" or "F" will do.)

```

Client:
Client# - P

Booking:
Booking# - P
Client# - F
Trip# - F

Rafting Trip:
Trip# - P
    
```

(10 marks)

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Client : Table								
	Client#	ClientName	Address	City	State/Prov	PostalCode	Country	Phone
+	303	Student Name	11 Tajlea Road	Denver	CO	80201	USA	303-764-9174
+	304	Forsythe, Dianne	460 Griffin Blvd.	Boulder	CO	80301	USA	720-331-8176
+	308	Barry, Paul	1043 Main Street	Denver	CO	80210	USA	720-766-0113
+	322	Fritz, Emma	397 Warren Avenue	Denver	CO	80210	USA	720-765-3932
+	323	Boisvert, Daniel	9 Heywood Road	Casper	WY	82601	USA	307-742-1008

7. Given the client information above, write the result of the following SQL query:

```
Select      ClientName, City, [Client#]
FROM        Client
WHERE       City = 'Denver'
ORDER BY   ClientName;
```

<i>Barry, Paul / Denver / 308</i> <i>Fritz, Emma / Denver / 322</i> <i>Student Name / Denver / 303</i>
--

(10 marks)

Networks and the Internet (5 marks)

8. The concept for the Internet (originally called Arpanet) was developed by military and academic institutions. It enabled computers, which were separated by vast distances, to communicate easily.

What was the primary reason for developing this system?

<i>Cold war/threat of nuclear war. Needed a system that could survive parts going offline</i>

(2 marks)

9. Data on the Internet can travel through many different mediums. An example would be the copper telephone cable you connect your modem at home to. Name **two** other mediums that can be used to transfer data to and from the Internet.

<i>Sattelite/fibre optic cable/microwave/etc</i>
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(3 marks)

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COMPSCI 111 S1C

Spreadsheets (20 marks)

Functions that *might* be helpful for this section:

If(logical, true_value, false_value)

Sum(Cell Range)

Average(Cell Range)

Max(Cell Range)

Min(Cell Range)

Count(Cell Range)

And(boolean_1, boolean_2)

Or(boolean_1, boolean_2)

Not(boolean_1)

**Vlookup(lookup_value, Cell Range,
index, approximate match <true/false>**

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	A	B	C	D	E	F
1	Number of Albums	Rating		Artist Name	Albums Sold	Rating
2	0	Void		Tavish Fraser	150	Small Fry
3	10	Loser		Elvis	2000000	Super Star
4	100	Small Fry		Jono Teutenberg	5	Void
5	10000	Silver		Bic Runga	200000	Platinum
6	50000	Gold		Shane Paul	60000	Gold
7	100000	Platinum		Scribe	95	Loser
8	500000	Super Star				

10. Above is a spreadsheet of recording artists and the number of albums they have sold. Each artist is given a rating based on how many albums they sell. This table is located on the left hand side of the spreadsheet. The results of using this table as a lookup are shown in column F.

The creators of this spreadsheet typed the formula in once in cell F2 and **filled down** column F to produce the remaining results.

With this in mind, what vlookup formula might they have used in cell F2 (the highlighted one)?

F2: =
`=VLOOKUP(E2,A$2:B$8,2,true)`

(6 marks)

11. In the above answer, you should not have used IF statements. Assuming that the only ratings we are now interested in are **Void, Gold and Platinum**, write a formula for cell F2 that determines which of these **three ratings** should be applied to each artist.

You must use the IF function, which will have to be nested.

F2: =
`=IF(E2<10000,"Void",IF(E2<100000,"Gold","Platinum"))`

(5 marks)

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Name: _____

	A	B	C	D
1	Income		Expense	
2	Name	Amount	Name	Amount
3	Savings	\$150.00	Alcohol	\$500.00
4	Friends	\$200.00	Balloons	\$5.50
5	Selling Car	\$200.00	Cake	\$39.95
6			"Dancers"	\$150.00
7		\$550.00		\$695.45
8				
9			Balance:	-\$145.45

Billy-Joe is trying to work out how to fund his next party. After working out the cost of all the essentials, and his current income, he finds he is short by around \$150. The spreadsheet automatically totals his **income** and **expense** columns in cells B7 and D7 respectively. It also works out the balance (D9) of his bank account after the party.

12. What formulae may he have used in the following cells?

B7:
=sum(B3:B6)

D7:
=sum(D3:D6)

D9:
=B7-D7

(9 marks)

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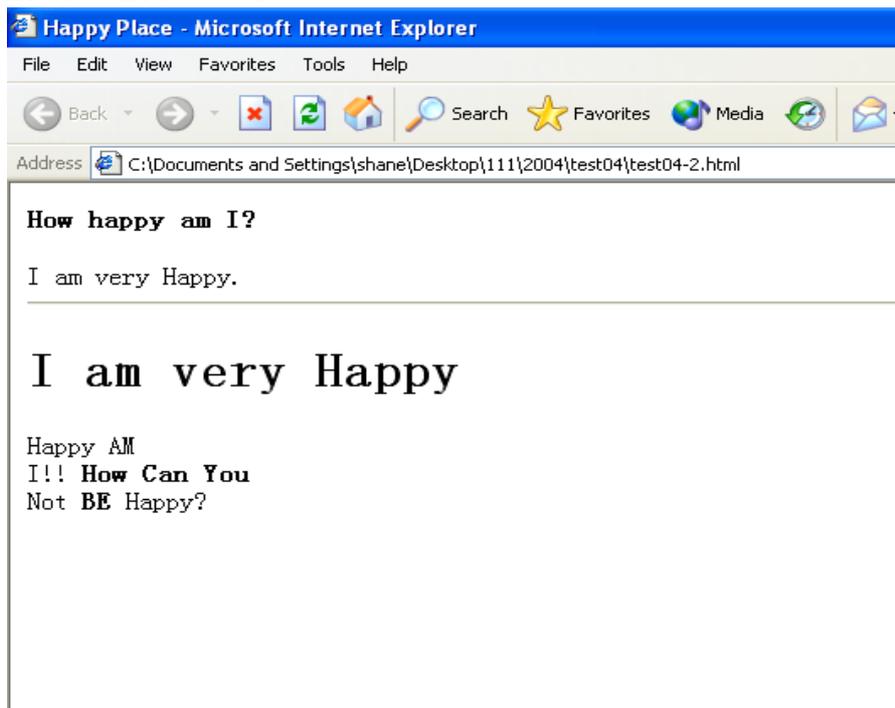
COMPSCI 111 S1C

HTML (30 marks)

```
<HTML>
<HEAD>
  <TITLE>
    Happy Place
  </TITLE>
</HEAD>
<BODY>

  <H4>How          happy am I?</H4>
  I am very Happy.
  <HR>
  <!-- Very, Very Happy -->
  <H1> I am very Happy </H1>
  Happy AM<BR> I!!
  <STRONG>How          Can You</STRONG> <BR>
  Not
  <B>BE</B>
  Happy?
</BODY>
</HTML>
```

13. Above is a listing of the source code for an HTML page. You are to draw the output of this page in the window below.



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14. To the right is a screenshot of a table from an html page. Write html code that would result in this table being produced. Skeleton code has been provided to get you started. Make sure you indent your code correctly.

Brand	Model	<i>Price</i>
Ibanez	JEM HAM90	5800
Gibson	Les Paul	5000

NB: The border around the table is set to "2".

```
<HTML>
  <HEAD>
    <TITLE>
      My Guitar Page
    </TITLE>
  </HEAD>
  <BODY>

    <table BORDER=2 WIDTH="100%">
      <TR>
        <TD><b>Brand</b></TD>
        <TD><b>Model</b></TD>
        <TD><i>Price</i></TD>

      </TR>
      <TR>
        <TD>Ibanez</TD>
        <TD>JEM HAM90</TD>
        <TD>5800</TD>

      </TR>
      <TR>
        <TD>Gibson</TD>
        <TD>Les Paul</TD>
        <TD>5000</TD>

      </TR>
    </table>

  </BODY>
</HTML>
```

(13 marks)

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COMPSCI 111 S1C

Graphics (5 marks)

Listed below are 5 different scenarios in which images can be used. For each, list the best format for the scenario described.

Your options are:

JPEG (low compression)

JPEG (high compression)

GIF

BITMAP

VECTOR GRAPHICS

15. An advertiser is making an image to be used on a billboard, which will be about 2 stories high. The image is mostly made up of text and basic shapes.

Vector graphics

(1 Mark)

16. A family is designing an online photo album of their digital photo collection. While they would like the images to be less than 3 megabytes each, they want them to be relatively high quality, without too much visual distortion.

Jpeg Low

(1 Mark)

17. A graphic designer is storing photographic images in an image library for later use. He has enormous amounts of storage space and wants the images stored so they look as close to the originals as possible, without any reduction in the quality of the image.

Bitmap

(1 Mark)

18. A web designer has designed a very nice looking title graphic for their website. It is made up of text and a few basic colours for maximum impact.

GIF

(1 Mark)

19. An Internet user is trying to place a few photos on the web. Unfortunately they are using a free web-hosting site that limits its users to only 1 megabyte of storage space for the whole site.

JPEG HIGH

(1 Mark)

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