

Candidate Name _____

Centre Number

Candidate
Number

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UNIVERSITY OF CAMBRIDGE LOCAL EXAMINATIONS SYNDICATE

**Joint Examination for the School Certificate
and General Certificate of Education Ordinary Level**

COMPUTER STUDIES

7010/1

PAPER 1

OCTOBER/NOVEMBER SESSION 2001

2 hours 30 minutes

Candidates answer on the question paper.
No additional materials are required.

TIME 2 hours 30 minutes

INSTRUCTIONS TO CANDIDATES

Write your name, Centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided on the question paper.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets [] at the end of each question or part question.

FOR EXAMINER'S USE

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This question paper consists of 12 printed pages.

1 Explain, using examples, the meaning of these computer terms.

(a) robot
.....
.....[2]

(b) on-line processing
.....
.....[2]

(c) buffer
.....
.....[2]

(d) modem
.....
.....[2]

(e) simulation
.....
.....[2]

2 State four problems which may arise when converting a paper-based office to an electronic office.

1.
.....
2.
.....
3.
.....
4.
.....[4]

3 State two household appliances which contain a microprocessor and describe the purpose of the microprocessor in each appliance.

- 1.
.....
.....
- 2.
.....[4]

4 (a) Explain what is meant by a computer virus.

.....
.....
.....[2]

(b) Outline two precautions that a computer systems manager can take to reduce the effects of viruses.

- 1.
.....
- 2.
.....[2]

5 (a) State two advantages of using integrated software packages.

- 1.
.....
- 2.
.....[2]

(b) Explain, using an example, how an integrated package can be customised by using macros.

.....
.....
.....[2]

6 (a) What is the purpose of a graphical user interface?

.....
.....[1]

(b) Why is using a graphical user interface more popular than typing in command lines?

.....
.....
.....[2]

(c) Describe three tasks that an operating system does for the user.

1.
.....
2.
.....
3.
.....[3]

7 A large suite of software is on a desktop computer. Describe three advantages of installing this software from CD-ROM rather than from floppy disc.

1.
.....
2.
.....
3.
.....[3]

8 A student has decided to use the wide area network (Internet) to research information for science coursework.

(a) State two examples of information, other than plain text and pictures, that the student can receive on the Internet.

- 1.
.....
- 2.
.....[2]

(b) Describe how information from the Internet can be included in a piece of coursework.

.....
.....
.....[2]

(c) Explain how check sums are used in the transfer of data.

.....
.....
.....
.....[2]

9 A hotel wants to change from a manual booking system to a computerised one.

(a) Describe why first a feasibility study should be carried out.

.....
.....
.....
.....[2]

(b) Describe, using a data flow diagram or otherwise, the flow of data in the manual booking system.

.....
.....
.....
.....[3]

(c) Describe two benefits of using top-down design to develop this computer system.

1.
.....
.....
2.
.....
.....[2]

10 This algorithm grades candidates on marks out of ten.

```

1  input a Mark
2      case Mark of
3          0, 1, 2, 3 : Grade = Fail
4          4, 5 : Grade = Pass
5          6, 7 : Grade = Merit
6          8, 9, 10 : Grade = Distinction
7      otherwise Mark = -1
8  endcase
9  if Mark = -1 then
10     print 'Not a valid mark'
11 else output Grade, 'Grade'
```

(a) Dry run the algorithm for each of the following data and complete the table.

INPUT	OUTPUT
0	
5	
99	

[3]

(b) Write down two instructions which could be inserted between lines 1 and 2 to allow the algorithm to deal with marks out of 100.

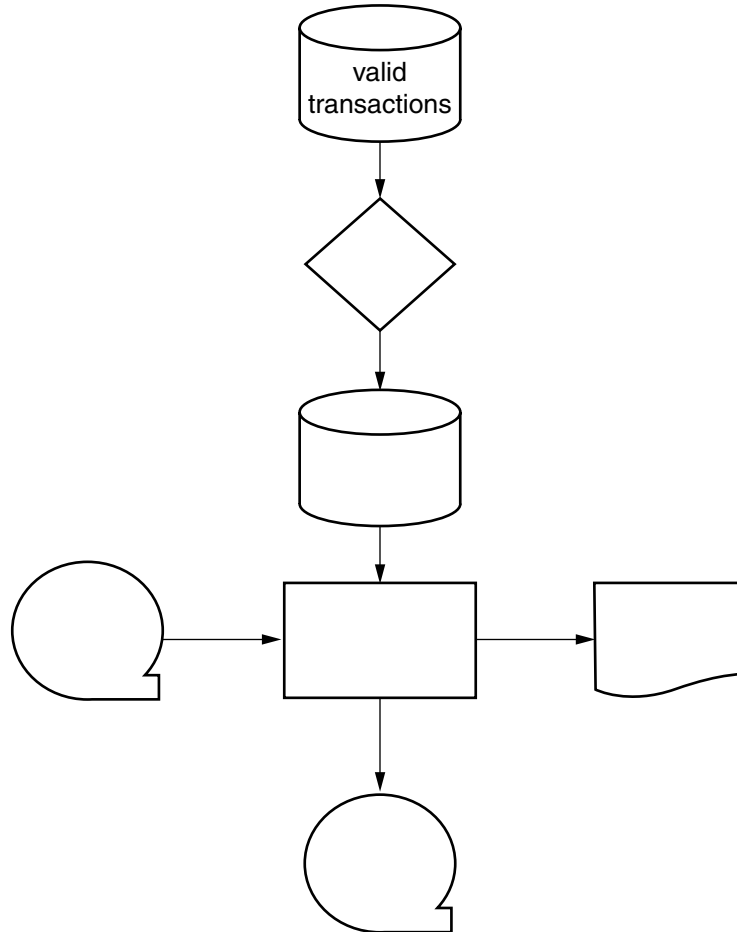
.....

 [2]

11 (a) The systems flow chart represents a batch update of a payroll master file stored on magnetic tape. Using the following words label the diagram below. You may assume that the transaction file has been validated.

- error report new master file old master file
- sort sorted transactions update

[4]



(b) Describe the consequences of systems failure of

(i) a real-time air traffic control system,

.....

.....

.....

(ii) the batch update of a sequential payroll master file.

.....

.....

.....

[4]

12 The following spreadsheet shows a student's expenses for four weeks.

	A	B	C	D	E	F
1	ITEMS	WEEK 1	WEEK 2	WEEK 3	WEEK 4	TOTAL
2	TRAVEL	4.50	3.60	1.80	6.30	
3	FOOD	29.00	32.00	25.00	33.00	
4	CLOTHES				15.00	
5	STATIONERY	5.20				
6	LEISURE	39.00	42.00	26.00	35.00	
7	TELEPHONE	2.20	2.50	2.50	2.50	
8						

- (a) Write down a **cell** reference which contains
- (i) a label,
 - (ii) a value. [2]
- (b) Write a formula that should be inserted into **F2** to calculate the total expenditure on travel for these four weeks. [2]
- (c) Describe how the formula in **F2** can be replicated to calculate the total expenditure for each item. [2]
- (d) Write a formula that should be inserted into **F8** to calculate the total expenditure for all items. [2]
- (e) A pie chart is needed to show the percentage spent on each item over the four weeks. On the spreadsheet, shade the cells needed to produce this chart. [2]

13 A publisher uses a database to keep details of the books in stock. Part of the database is shown below.

CATNO	TITLE	AUTHOR	PUBLISHED	SALES
B295	Buying a Boat	Smart I	1995	1437
I392	The Internet	Cheung L	1992	5612
C499	Your Computer	Patel M	1997	2172
S500	Swimming	Winship P	2000	475
M401	Multimedia	Sutton D	2001	1762
A301	Antique Cars	Brown M	2001	46

(a) State the name of a field that contains

- (i) numeric data,
 - (ii) alphanumeric data.
- [2]

(b) (i) State the name of the field that should be used as the key field.

-
- (ii) Explain the purpose of a key field.
-
-
- [2]

(c) The book file is to be linked to a customer file. Explain the contents of another field needed to link both files.

-
-[1]

(d) The records are sorted into descending order of **SALES**. The following search condition is then input.

(SALES < 3000) AND (PUBLISHED < 1998).

Write down the output using only the **CATNO** field in the correct sorted order.

-
-
-[3]

(e) State three validation checks that could be done on the **CATNO** field.

- 1.
- 2.
- 3.[3]

14 (a) State two advantages for a computer having several high-level languages.

- 1.
.....
- 2.
.....[2]

(b) State two reasons why assembly language is still used.

- 1.
.....
- 2.
.....[2]

(c) Using an example, or otherwise, show the difference between a

Repeat ...Until construct
and an
If ... then ... Else ... Endif construct.

Repeat ...Until

.....

If ... then ... Else ... Endif

.....

[4]

