

Surname	Centre Number	Candidate Number
Other Names		2



**GCE AS**

B500U10-1



**COMPUTER SCIENCE – AS component 1**  
**Fundamentals of Computer Science**

TUESDAY, 21 MAY 2019 – MORNING

2 hours

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1.	6	
2.	8	
3.	6	
4.	9	
5.	7	
6.	6	
7.	6	
8.	10	
9.	11	
10.	8	
11.	6	
12.	6	
13.	11	
<b>Total</b>	<b>100</b>	

**ADDITIONAL MATERIALS**

A calculator.

**INSTRUCTIONS TO CANDIDATES**

Use black ink or black ball point pen.

Write your name, centre number and candidate number in the space at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet.

If you run out of space, use the continuation page at the back of the booklet, taking care to number the question(s) correctly.

**INFORMATION FOR CANDIDATES**

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

You are reminded of the need for good English and orderly, clear presentation in your answers.

The total number of marks available is 100.

*Answer all questions.*

1. Name and describe the transmission method for each of the following:

(a) Using a parallel interface to send data to a printer. [2]

.....

.....

.....

.....

.....

.....

(b) Sending data input from a keyboard. [2]

.....

.....

.....

.....

.....

.....

(c) Sending data across a network using a switch. [2]

.....

.....

.....

.....

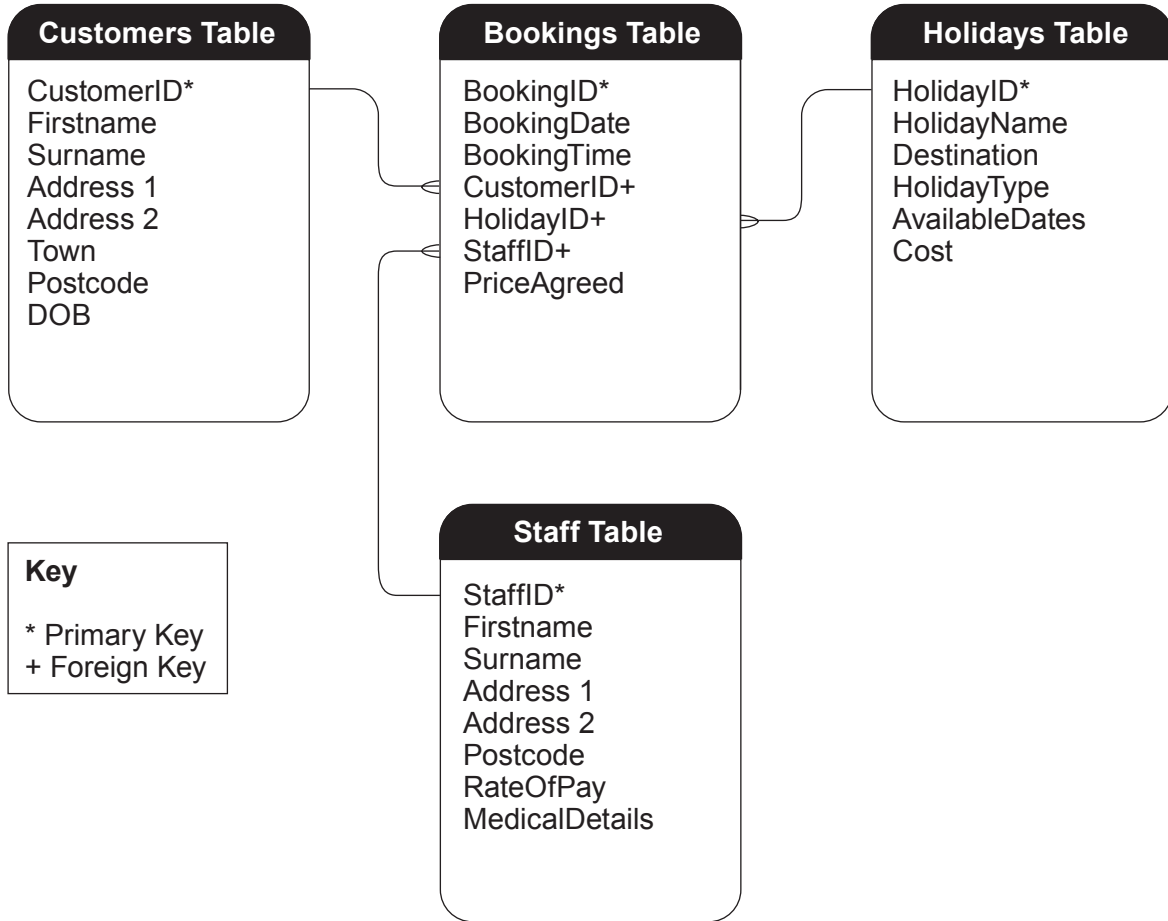
.....

.....





4. **Happy Hols** travel agents uses the following database structure to store details about its customers, holidays, bookings and staff.



(a) (i) Describe the features of this type of database structure.

[3]

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(ii) Describe the benefits and drawbacks of this type of database structure. [4]

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(b) Using an example from the structure on page 5, give **one** advantage of different users having different views of the data in this database. [2]

**Advantage** .....

.....

.....

.....

.....



A series of horizontal dotted lines for writing.









(b) Using the number  $11.10111_2$ , describe truncation and rounding to **two** binary places, and calculate their effect upon accuracy in terms of their absolute errors. [4]

Examiner  
only

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

9. A program written using a high-level programming language is intended to add five numbers that are input by a user. This program is to be compiled.

```

1  Start addProc
2  number is integer
3  a is integer
4  total is integer
5  a = 0
6
7  for i = 1 to 5
8      output "Please enter next number"
9      ipnut number
10     a = a + number
11 next i
12
13 total = a
14 output "The total = ", total
15
16 End addProc
    
```

- (a) Line 10 is split into the following tokens and all whitespace is removed:

Token
a
=
a
+
number

Name the compilation stage where this would occur.

[1]

.....

- (b) Identify the error that exists in this program and state at which stage of the compilation process it would be detected. [2]

.....

.....

.....

.....

.....

.....









12. (a) Identify **three** potential threats to computer systems.

[3]

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(b) Describe contingency planning for disasters which affect computer systems.

[3]

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....





