Cambridge International AS & A Level

Cambridge International Examinations
Cambridge International Advanced Subsidiary and Advanced Level

CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER					

INFORMATION TECHNOLOGY **9626/32**

Paper 3 Advanced Theory **May/June 2017**

1 hour 45 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces at the top of this page.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

Any businesses described in this paper are entirely fictitious.

This document consists of **17** printed pages and **3** blank pages.

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1 Information Technology enables new methods of working.

(a) Define each of the following:

(i) Video-conferencing:

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(ii) Teleworking:

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(b) Describe the drawbacks to employers of teleworking.

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2 Companies must protect the data that is used and stored on their networks.

(a) Evaluate the use of a firewall in protecting the data on a company network.

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(b) Describe how a proxy server can help to protect a company network.

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3 A report about the computer system of a company is to be written. The activities to be carried out so that the report can be presented by the due dates are shown below:

Activity	Number of days allocated to activity
Evaluation of initial report	6
Initial research of the system	2
Interviewing users of the system	2
Writing the final report	4
Writing the initial report	3

Using the table below, create a Gantt chart to show a possible schedule of activities.

Clearly indicate which tasks are carried out in parallel and which tasks are carried out sequentially.

Initial report due

Final report due

Activity	Week beginning 4 September 2017					Week beginning 11 September 2017					Week beginning 18 September 2017				
	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F

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4 RockIT Limo Hire is a taxi company that has an online booking system. Customers can book a journey using a smartphone. When the company receives a booking request from a customer, it collects the following data:

- customer name and mobile telephone number
- how many passengers
- address from which journey will start
- address of destination
- date and time of journey.

RockIT Limo Hire's computer system checks its booking diary to see if the booking can be accepted.

If the booking can be accepted:

- the customer is informed by text (SMS) that the booking is confirmed
- the booking is added to the electronic diary.

If the booking cannot be accepted:

- the customer is sent a text (SMS) to state that the booking is refused
- the customer details are deleted from the system.

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In the box below, draw a Level 1 data flow diagram (DFD) to represent the RockIT Limo Hire booking system.

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5 An examination board uses mail merge to create letters to send to candidates by email.

The letter template showing the places to insert the candidate details is illustrated below:

Full name and address to go in this area.

Cambridge Assessment
Cambridge International Examinations
1 Hills Road
Cambridge
United Kingdom

Dear Title and Family name

We wish to inform you that this examination paper must be taken in June.

Yours sincerely,

Director

Cambridge International Examinations

Part of the data source of candidates is shown here:

Family name	First name	Title	Address line 1	Address line 2	City	ZIP/Postal code	Country	Email address
Smith	Harold	Mr	5 Duck Lane	Cherry Hinton	Cambridge	CB1 2FX	UK	harold@smith.co.uk
Bandhari	Chandrak	Mr	Tilak Nagar Rd		Lucknow	226004	India	chan@bandhari.in
Zhang	Jiao	Ms	Xinbei Rd	Miyun	Beijing	101500	China	jiao@zhang.cn
Johns	Helen	Mrs	PO Box 234	Palmerston Nth Central	Palmerston Nth	4412	New Zealand	Helen23@johns.nz

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(a) Explain how you would use the data given in the table to create the template shown.

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(b) Explain how you would produce the letters to all the candidates apart from those in New Zealand.

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6 Quick Response (QR) codes are used in marketing to convey information to users.

(a) Describe how a QR code stores information.

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(b) Describe the benefits to advertisers of using QR codes on their products.

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(c) Describe how a QR code may put the user at risk from malicious code.

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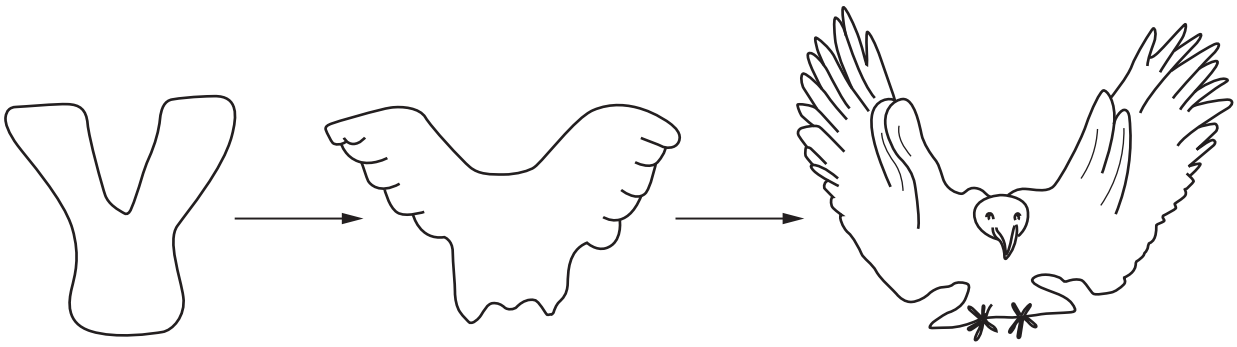
7 Animators create effects by ‘morphing’ images from one into another. An example of one image being morphed into another is shown in Fig. 1.



Original image Transition image Final image

Fig. 1

Explain how a smooth transition between these images is created by ‘morphing’.

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8 A software company produces games for use on smartphones. It uses the Rapid Application Development method to develop the games.

Discuss the advantages and disadvantages of the Rapid Application Development method.

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9 JavaScript is a programming language used in webpages.

Fig. 2 shows a table created with JavaScript in a webpage.

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100

Fig. 2

The code that created the table is shown below:

```
<html>
   <body>
      <script language="javascript">
         var tableout;
         tableout = "<table border='1' width='300' cellspacing='0'
         cellpadding='3'>"
         for (b = 1; b <= 10; b++) {
            tableout = tableout + "<tr>";
            for (g = 1; g <= 10; g++) {
               tableout = tableout + "<td>" + b * g + "</td>";
            }
            tableout = tableout + "</tr>";
         }
         tableout = tableout + "</table>";
         document.write (tableout);
      </script>
   </body>
</html>
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Explain how the loops in the code create the table.

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10 A country is considering launching a satellite to enhance its internet connectivity.

Evaluate the use of satellites for this purpose.

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11 A college department has a free Massive Open Online Course (MOOC) with access for its students via the World Wide Web.

Describe the benefits of a MOOC.

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