FAISAL CHUGHTAI
www.FaisalChughtai.com

Cambridge International AS & A Level

Cambridge International Examinations
Cambridge International Advanced Subsidiary and Advanced Level

CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER				

9050436710

INFORMATION TECHNOLOGY **9626/32**

Paper 3 Advanced Theory **February/March 2018**

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** the 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 **18** printed pages and **2** blank pages.

DC (KN/SW) 152617/3
© UCLES 2018

CAMBRIDGE International Examinations

[Turn over

1 A website designer can use bitmap or vector images in web pages.

Explain the characteristics of bitmap images that make them suitable for use on web pages that advertise items for sale.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[4]

2 Analyse the impact of network bandwidth on video-conferencing.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[8]

3 Fig. 1 shows a diagram of interconnected computer networks that use internet protocol (IP) to communicate. A file is being sent as six data packets from network A to network H. Nodes B to G are routers used to connect the networks.

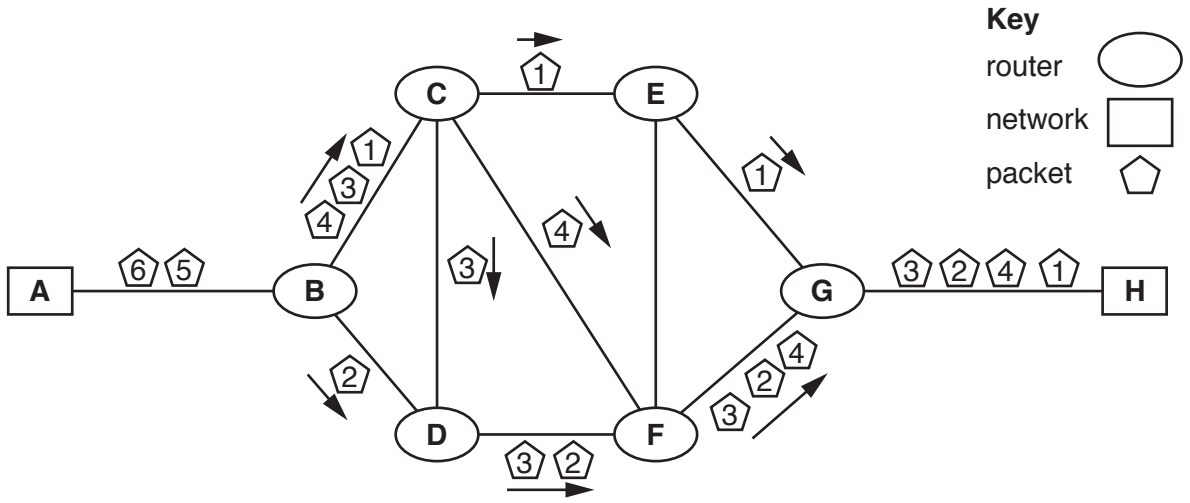


Fig. 1

(a) Explain why the packets arriving at network H are in a different order from when they were sent by network A.

.....

.....

.....

.....

.....[2]

(b) Explain the role of the routers B to G in sending the packets from network A to network H.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[5]

4 A building project has a number of activities, F, G, H, I, J and K, that need to be carried out between the stages A, B, C, D and E. Fig. 2 shows a Project Evaluation and Review Technique (PERT) chart for the building project.

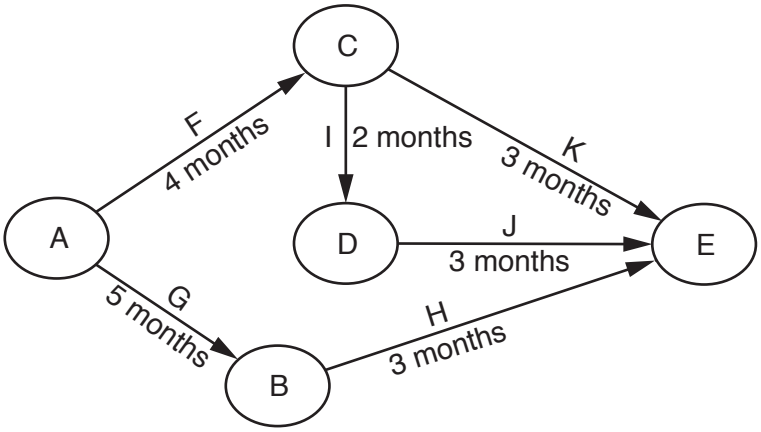


Fig. 2

(a) The building project has a series of milestones to help the managers monitor the progress of the project.

Identify the first two milestones in this project.

.....

.....[1]

(b) Describe the critical path through this project.

.....

.....

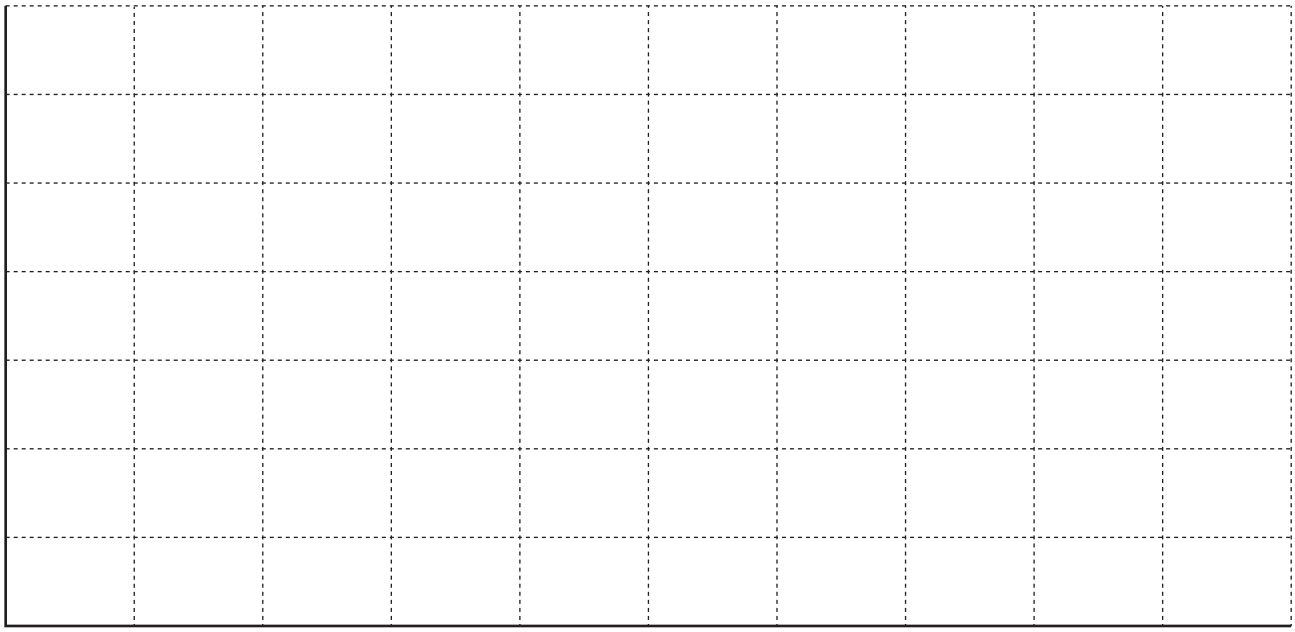
.....

.....

.....[2]

To create the PERT chart, managers first produced a Gantt chart.

(c) On the grid below, draw and label the Gantt chart from which the PERT chart in Fig. 2 would have been derived.



[5]

5 A global company has many managers in cities around the world. A mail merge document is being created to invite each manager to a training event.

The section of the data source file storing the managers' details for the mail merge is:

Invite?	Title	First Name	Family Name	Address1	Address2	City	Country	Postcode
Yes	Mr	Harold	Johnson	The Beeches	12a Bury St	Manchester	UK	M3 4EN
Yes	Mr	Ahmed	Molokya	El Gezira St	Dokki	Cairo	Egypt	12311
Yes	Ms	Rowena	Cobb	PO Box 27	Sunshine Drive	Auckland	New Zealand	1010
Yes	Mr	Vihann	Sardana	1257	SM Mandir	Mumbai	India	400083
No	Mr	Sam	Wick	4 The Avenue	Attwood	Hume	Australia	3000
Yes	Mrs	Rethebile	Pillay	127	Farnworth	Cape Town	South Africa	7760
Yes	Miss	Charlene	Foster	15 Stirling Highway	Melbourne Terrace	Melbourne	Australia	3205
No	Mr	Daniel	Cross	64 Cherry Rd	Hinton	Cambridge	UK	CB1 4EF

Managers in the UK and Egypt will be invited to the event in London while all others will be invited to the event in Hong Kong. Managers who are not being invited are marked as 'No' in the source file.

A first draft of the mail merge template for the letter is shown here:

```
<<Title>> <<Family Name>>
<<Address1>>
<<Address2>>
<<City>>
<<Country>>
<<Postcode>>

Dear <<Title>> <<Family Name>>

The company is holding a training event for you on 1 July 2019 in <<City>> and you
are invited to attend.

All expenses for travel from your home city of <<City>> and accommodation at the
meeting will be paid by the company.

Yours sincerely

Managing Director
```

(a) Explain how the mail merge may be set up to create letters only to those who are invited.

.....

.....

.....

.....

.....

.....

.....

.....

.....[4]

(b) Explain how the mail merge template, shown on page 8, must be altered to ensure that the managers who receive an invitation are asked to the correct event.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[8]

6 Drivers who are 16 years of age or older can apply for a driving licence online.

The government web page code requires applicants to enter their age and then checks if they are old enough to apply.

The following code captures the applicant's age. When the applicant clicks the 'Check now' button the age is first checked to ensure that it is numeric. The age is then checked to see if the applicant is old enough. Suitable messages are displayed as a result of the checks.

Complete the code for the function ***CheckAgeFunction*** that checks the age entered by the applicant and displays an appropriate response.

```
<html>
<body>
<p>You can apply for a licence to drive when you are 16 years old.</p>
<p>To check if you are old enough to drive, input your age and click
the button:</p>
<input id="AgeNow" value="16" />
<button onclick="CheckAgeFunction()">Check now</button>
<p id="AgeCheck"></p>
<script>
       function CheckAgeFunction() {
```

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[8]

```
    }
    document.getElementById("AgeCheck").innerHTML = CanApply;
}
</script>
</body></html>
```

7 Describe how wearable computers can enhance health care.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[8]

8 Describe the advantages of evolutionary prototyping compared to throw-away prototyping.

.....

.....

.....

.....

.....

.....

.....

.....

.....[4]

9 There are a number of different types of protocols.

(a) PPP is a network protocol.

Describe what is meant by PPP.

.....

.....

.....

.....

.....[2]

(b) Email is used to send and retrieve messages between email clients and email servers. One network protocol in common use for email access is Internet Message Access Protocol (IMAP).

Describe the features of IMAP that make it suitable for email access on smartphones.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[8]

10 Evaluate the use of asymmetric-key and symmetric-key cryptography when encrypting data for electronic transmission between two people.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[8]

11 Analyse the impact of the introduction of high definition television systems.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[5]

12 Discuss the impact on society of online banking.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[8]

BLANK PAGE

BLANK PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cie.org.uk after the live examination series.

Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.

© UCLES 2018