



Cambridge International AS & A Level

CANDIDATE
NAME

CENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--



INFORMATION TECHNOLOGY

9626/32

Paper 3 Advanced Theory

May/June 2023

1 hour 45 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You may use an HB pencil for any diagrams, graphs or rough working.
- Calculators must **not** be used in this paper.

INFORMATION

- The total mark for this paper is 70.
- The number of marks for each question or part question is shown in brackets [].

This document has **12** pages. Any blank pages are indicated.

- 2 IP networks can be connected by switches and routers so that data can be exchanged between devices.

Compare the operations of switches and routers in networks. You must include similarities and differences.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

..... [8]

3 When data is transmitted across networks it needs to be protected from interception and eavesdropping.

(a) Explain how each of these network security protocols operates.

(i) Secure Shell (SSH)

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

(ii) Internet Protocol Security (IPsec)

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

(b) Explain why the use of Telnet for remote login may put data at risk.

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

4 Bluetooth and Wi-fi are wireless technologies used to exchange data between devices.

(a) Contrast Bluetooth with Wi-fi as methods of wireless communication.

.....
.....
.....
.....
.....
.....
.....
..... [4]

(b) Describe how a Bluetooth connection is established between two devices.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
..... [5]

6 The OSI and the TCP/IP reference models are used to describe communications in networks.

(a) Describe **three** similarities between these models.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [3]

(b) Describe **three** differences between these models.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [3]

8 Describe each of these project management terms.

(a) dependencies

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

(b) deliverables

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

(c) tasks

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

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 Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

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