

CANDIDATE
NAME

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APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY

9713/32

Paper 3

May/June 2017

1 hour 15 minutes

Candidates answer on the Question Paper.

No additional materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

Do not use staples, paper clips, glue or correction fluid.

You may use an HB pencil for any diagrams, graphs or rough working.

DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

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

The businesses described in this paper are entirely fictitious.

This document consists of **15** printed pages and **1** blank page.

Scenario 1**Questions 1, 2, 3, 4 and 5**

An engineering research department designs nuclear reactors for producing electricity. It uses computer-based simulations running on a super computer to help predict how the design will operate when built.

Project management software is used to plan the construction of the new reactor and associated buildings.

The environment around the new reactor will be continually monitored for radiation and other environmental variables. The people who live in the area (local residents) surrounding the new reactor are to be kept informed about the building progress. They will be sent individual letters created from a database of all the local residents.

1 Explain why computer simulations are used when designing the new reactor.

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2 (a) Discuss the benefits and drawbacks of using a super computer to create and run the simulations used in nuclear research.

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(b) Other than nuclear research, describe **two** different uses of super computers.

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3 Describe how displaying the construction project activities in a Gantt chart can assist in the project planning.

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4 Mail merge is used to produce the letters that will be sent to local residents.

(a) Explain why there must be 100% accuracy in the data entry process when creating the database of local residents.

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(b) (i) The database of local residents is a flat-file database.

Explain why a flat-file database would have been used rather than a relational database.

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(ii) It has been decided to send letters to every resident in the whole region.
The database is to be expanded to include more information about each resident.

Explain why a relational database would be preferred for the database.

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Scenario 2

Questions 6, 7 and 8

A multi-national company employs a number of representatives in its offices around the world.

The representatives must keep in regular contact with each other and the office staff to discuss confidential and urgent company matters.

The company provides Voice over Internet Protocol (VoIP) and video-conferencing systems for use by the representatives.

6 (a) One way of using VoIP is to use a purpose-built VoIP phone.

Describe **two** other ways that a representative could make a phone call using VoIP.

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(b) (i) Describe **four** benefits of the representatives using VoIP.

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(ii) Describe **four** drawbacks of the representatives using VoIP.

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7 (a) Describe the hardware and software required in a video-conferencing system.

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(b) Explain why echo-cancellation is important in video-conferencing.

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8 (a) Discuss reasons why the representatives use video-conferencing rather than using other methods of communication.

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(b) Explain why many people may prefer **not** to use video-conferencing.

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Scenario 3

Question 9

An international company owns and manages hotels in major cities all over the world.

It has a central reservation system (CRS) which enables prospective guests to access its website using a web browser to choose and pay for hotel rooms online.

Guests who regularly stay in the hotels can set up an account with a user ID (user name) and password so that the hotel holds their personal and payment details.

9 (a) Describe **four** items of information stored in a CRS about the hotels that a guest would require when making a booking.

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(b) Apart from the guest name and contact details, the user name (user ID) and password, describe **four** other items of information that the CRS might store about a guest who regularly stays in the hotels.

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(c) The CRS is able to produce reports for the hotel management.

Describe **three** reports that the CRS would be able to create.

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