

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
A2 GCE
G063/01
INFORMATION AND COMMUNICATION
TECHNOLOGY
ICT Systems, Applications and
Implications
MONDAY 11 JUNE 2018: Morning
DURATION: 2 hours
plus your additional time allowance
MODIFIED ENLARGED 36pt

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|-------------------------------|--|------------------------------|--|
| Candidate forename | | Candidate surname | |
| Centre number | | | |
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Candidates answer on the Question Paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

None

READ INSTRUCTIONS OVERLEAF



INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the boxes on the front page. Please write clearly and in capital letters.

Use black ink. HB pencil may be used for graphs and diagrams only.

Answer ALL the questions.

Read each question carefully. Make sure you know what you have to do before starting your answer.

Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).

INFORMATION FOR CANDIDATES

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

The total number of marks for this paper is 120.

Your quality of written communication is assessed in the question marked with an asterisk (*).

SECTION A

Answer ALL the questions.

1 (i) Identify TWO characteristics of a multi-tasking operating system.

1 _____

2 _____

[2]

(ii) Identify TWO characteristics of a single-user operating system.

1 _____

2 _____

[2]

2 Natural language interfaces are becoming more common.

Explain TWO limitations of using a natural language interface.

1 _____

2 _____

[4]

3 The first two steps of the Model Human Processor are:

- 1. A user sees a message box on the screen.**
- 2. This visual stimulus is received by the visual processor.**

Describe TWO further steps.

1 _____

2 _____

[4]

4 Describe how a call made from a mobile phone in London is connected to a mobile phone in Birmingham.

[4]

5 Increased usage of mobile technology and mobile communications services allows employees who are out of the office to remain in contact with the workplace.

(a) Evaluate the impact on employees that this change is having. [6]

(b) Some staff use tablet computers. Describe TWO limitations of using tablet computers as portable devices.

1

2

[4]

6 A new school has decided to invest in library management software. The school management team (SMT) has selected an off-the-shelf package.

Justify the SMT's decision to use an off-the-shelf package for this application. [6]

7 A national chain of hotels has a distributed database that contains records of staff, customers and bookings. One method of distributing the database is horizontal partitioning.

(a) Identify and describe TWO OTHER methods that could be used to distribute the database. [6]

1 _____

2 _____

(b) Describe what is meant by data integrity in a database.

[2]

SECTION B

Answer ALL the questions.

Questions 8 to 13 concern Ambridge Manor. Ambridge Manor is a large hotel.

8 Ambridge Manor has a booking system that has been in use for many years. The system is undergoing a review.

Describe the planning that needs to occur for the review to take place.

[4]

9 Ambridge Manor has made a decision to invest in a new booking system.

(a) Observation is one of the ways in which staff could be involved in the investigation for the new system.

Explain TWO OTHER ways in which the Ambridge Manor staff could be involved in the investigation phase of the system life cycle.

1 _____

2 _____

[4]

(b) A systems analyst has been employed to investigate how bookings are taken. The following was observed:

customers can ring Ambridge Manor reception and a receptionist will answer. Booking details are entered into the system to check if there is availability. If a room is available a booking is recorded;

customers can complete a web-based booking form on Ambridge Manor's website. When bookings are submitted they are processed to see if there is availability. If a room is available a booking is recorded;

if a booking has been recorded a confirmation letter is created and sent to the customer.

Draw a Data Flow Diagram (DFD) to represent the information flows. Use the space opposite. [5]

(c) The designer will consider a number of factors relating to the user of the booking system when designing the interface for it. One factor that will be considered is the user's attention.

Identify and describe TWO OTHER factors that should be considered.

[6]

1 _____

2 _____

(d) Identify THREE responsibilities of a programmer who works on the implementation of the new booking system.

1 _____

2 _____

3 _____

[3]

- (e) The new booking system will include a Management Information System (MIS).**

Explain TWO ADVANTAGES to Ambridge Manor of having a MIS.

1 _____

2 _____

[4]

- (f) Ambridge Manor will consider a number of factors when managing the process of change from the old to the new booking system.**

Identify and describe TWO factors that should be considered.

1 _____

2 _____

[6]

(g) The new booking system may need corrective maintenance once it has been installed.

Explain why corrective maintenance may be required.

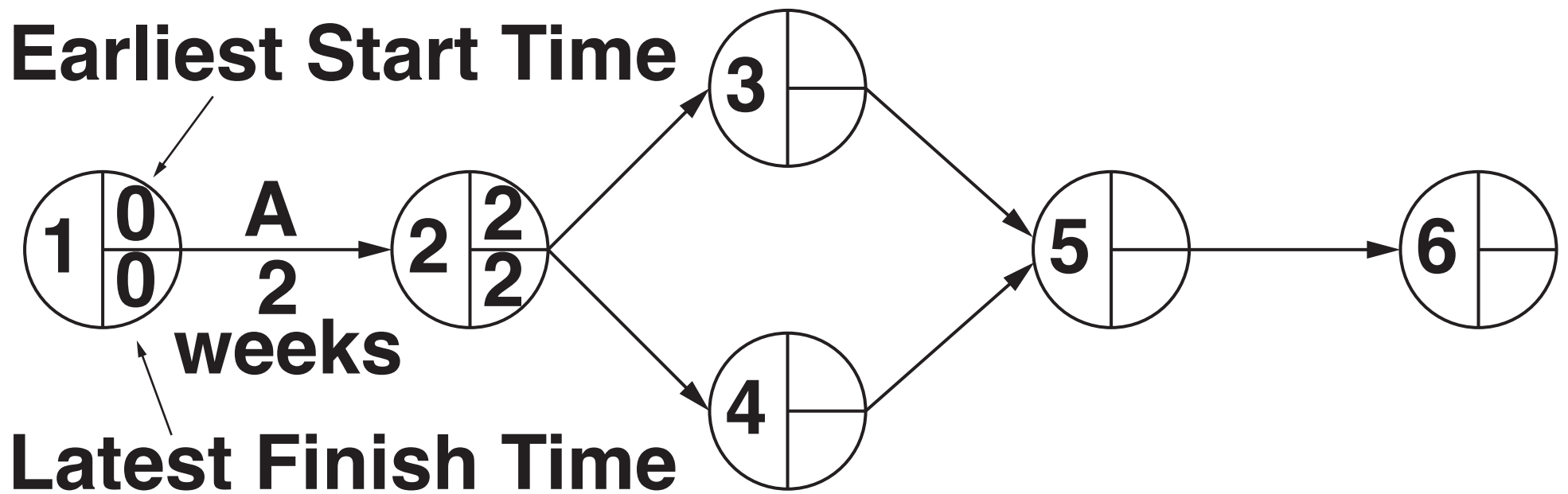
[2]

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10 Ambridge Manor is considering whether or not to install WiFi access for guests. It has decided to conduct some market research.

| Task | Description | Order | Duration |
|-------------|---|--|-----------------|
| A | Preliminary discussion | Completed first | 2 weeks |
| B | Prepare web-hosted questionnaire | Start when A is complete | 3 weeks |
| C | Prepare email survey | Start when A is complete | 2 weeks |
| D | Activate web-hosted questionnaire and wait for replies | Start when B is complete | 2 weeks |
| E | Send email survey and wait for replies | Start when C is complete | 4 weeks |
| F | Analyse results | Start when D and E are complete | 3 weeks |

(a) Use the information in the table above to complete the Critical Path Analysis (CPA) diagram. [3]



(b) Identify the task order that represents the critical path.

[1]

(c) Identify the shortest length of time it can take to complete the research.

[1]

11 Ambridge Manor has decided to improve the connectivity available to both staff and guests. It has installed a leased line broadband connection. It plans to run two separate WiFi networks, one for staff and one for guests.

(a) Describe ONE advantage and TWO disadvantages to Ambridge Manor of installing a leased line. [6]

Advantage _____

Disadvantage 1 _____

Disadvantage 2 _____

Justify Ambridge Manor's decision to install a dedicated file server.

[illegible]

(c) Ambridge Manor wants to make sure that its customer data remains secure.

Explain TWO SOFTWARE measures that should be taken to ensure customer data remains secure.

1 _____

2 _____

[4]

(d) Compare the characteristics of the staff WiFi intranet and the guest WiFi internet connection.

[4]

- (e) Ambridge Manor's staff have company email accounts which they use to send and receive emails.**

Describe TWO OTHER facilities of email software that will assist productive communication between staff within the business.

1 _____

2 _____

[4]

12 Ambridge Manor is rebranding its house style. This will be applied to letters to customers, presentations and the website.

Describe THREE DIFFERENT ways that the house style can be efficiently applied. [6]

1 _____

2 _____

3

13* Identify ONE hardware or ONE software development that could impact on guests staying at the Ambridge Manor hotel.

Discuss how the development you have identified above could impact on guests staying at the Ambridge Manor hotel.

The quality of written communication will be assessed in the answer to this question. [11]

Chosen hardware or software

development _____

END OF QUESTION PAPER

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