OCR
Oxford Cambridge and RSA

Tuesday 23 June 2015 – Morning

A2 GCE INFORMATION AND COMMUNICATION TECHNOLOGY

G063/01 ICT Systems, Applications and Implications
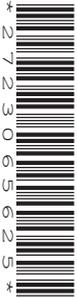

Candidates answer on the Question Paper.

OCR supplied materials:
None

Other materials required:
None

Duration: 2 hours

Candidate forename		Candidate surname	

Centre number		Candidate number	

INSTRUCTIONS TO CANDIDATES

*   Write your name, centre number and candidate number in the boxes above. 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).
*   Do **not** write in the bar codes.

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 (*).
*   This document consists of **16** pages. Any blank pages are indicated.

OCR is an exempt Charity

Turn over

2

SECTION A

Answer **all** the questions.

1 A systems analyst could use interviews or questionnaires to investigate a system during the system life cycle.

Identify and describe **two other** methods that a systems analyst could use.

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[6]

2 When a company installs a new system, the employees who are going to use the new system may receive training in a number of different ways.

Compare the use of online tutorials with video conferencing.

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3 A system may require maintenance as part of its life cycle. Corrective maintenance is one type of maintenance.

Identify **two other** types of maintenance. For each type of maintenance explain why it is required.

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[6]

4 Satellite communication systems are used in the transmission of television programmes.

Explain **two advantages** of using satellites for this purpose.

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[4]

5   Digital television networks offer a range of services.

Evaluate the impacts that offering a range of digital television services has had on **television companies**.

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6   A family has a number of computing devices including tablets, laptops and desktops. The family has created a peer-to-peer network within their home.

(a) Evaluate the family's decision to create a home network.

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(b) Describe **two advantages** to the family of using a peer-to-peer network instead of a client-server network.

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[4]

7 Employees in a multinational company use video conferencing to communicate with employees in a different country.

(a) Identify and describe a suitable transmission medium for video conferencing.

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(b) Describe why video conferencing needs a high bandwidth.

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SECTION B

Answer **all** the questions.

Questions 8 to 19 concern Promote-U. Promote-U is a multinational advertising agency that has offices throughout the world.

8   Promote-U has an employee code of conduct that all of its employees are asked to sign.

Justify Promote-U's decision to ask its employees to sign the code of conduct**.**

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9 Promote-U allows employees to use social networking applications within the workplace.

Evaluate Promote-U's decision to allow employees to do this.

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10 Promote-U has a client management database system that has been in operation for a number of years.

Describe **three** factors that Promote-U should consider when making a decision about whether or not to upgrade the client management database system.

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[6]

Turn over

8

11 Promote-U has decided to design and implement a new client management database system.

(a) The user interface for the system will use a range of controls including text boxes and buttons.

Identify **two other** types of control. For each type of control give a reason why it should be used.

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[4]

(b) Describe **two** ways in which the user interface could be made more accessible to users with a visual impairment.

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(c) Describe how mental models could be applied to the design of the user interface for the client management database system.

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(d) Explain why it is important the client management database system closely matches the user's mental model.

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Turn over

12 Employees will be required to log in to the client management database system with a User ID and password.

- A login screen will be displayed. The screen will contain a 'Forgot Password?' button.
- If the 'Forgot Password?' button is clicked, a check will be performed to see if the system recognises the User ID.
- If the User ID is recognised, a security question will be asked.
- If the User ID is not recognised, an error message will be displayed. The user will be returned to the login screen.
- The user's response to the security question will be checked. If the user gives the correct answer, an email containing the password will be sent to the user's email address. If an incorrect answer is given, the user will be given an error message and will be returned to the login screen.

Design a *flowchart* for this process. **[5]**

13 The database is normalised to third normal form (3NF).

Explain **two advantages** of normalising the database.

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[4]

14 Testing will take place during the development of the client management database system. Tests may use normal, extreme or erroneous test data.

Define what is meant by each of these terms.

Normal: ....

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Extreme: ....

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Erroneous: ....

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[3]

Turn over

15 Promote-U will install the client management database system in one of its offices. It could use direct or parallel changeover.

Compare direct changeover with parallel changeover for the installation of the client management database system in one office.

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.... **[4]**

16 The client management database system is distributed between Promote-U's different offices.

(a) (i) Describe **two advantages** of using horizontal partitioning as a method for distributing the database between the different offices.

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(ii) Identify and describe **one other** method that could be used to distribute the database.

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(b) Explain why standards are important to allow communication between devices in Promote-U's different offices.

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17 One type of internal resource that Promote-U has is human.

Describe **two other** types of internal resource that Promote-U has.

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[4]

Turn over

18 The UK Government may make changes that could affect Promote-U.

   (i) Identify **one** change the UK Government may introduce that would have an impact on Promote-U.

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   .... [1]

   (ii) Explain the impact that this change would have on Promote-U.

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19* **Discuss** developments in computer technology that might impact on Promote-U's ICT security.

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

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END OF QUESTION PAPER

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PLEASE DO NOT WRITE ON THIS PAGE