GCE AS/A Level

1241/01

S17-1241-01

INFORMATION AND COMMUNICATION TECHNOLOGY – IT1
Information Systems

MONDAY, 5 JUNE 2017 – MORNING

2 hours 15 minutes

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Answers should be written in the spaces provided. Where the space is not sufficient for your answer use a continuation sheet, taking care to number the continuation correctly.

The intended marks for questions or part questions are given in brackets [ ]. You are advised to divide your time accordingly. The total number of marks available is 80.

You are reminded of the necessity for good written communication and orderly presentation in your answers.

Quality of written communication will be assessed in question **8**.

Make sure you hand in your spreadsheet with this booklet at the end of the examination.

SECTION A

*Answer **all** questions.*

1. There is a fundamental relationship between *information and knowledge*. By using **two** different examples, demonstrate the relationship between *information and knowledge*. [2 × 2]

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2. Having a good interface is vital for the user. A *touch sensitive interface* and *game playing device* are both examples of Human Computer Interfaces (HCI). For **each** HCI, name a suitable device, state its appropriate use and describe a different advantage and a different disadvantage.
[2 × 3]

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3. **Other than** *spotting trends*, describe **two** ways up-to-date, accurate and complete information can add value to an organisation to aid decision making. [2 × 2]

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4. There are a number of costs involved in gaining good quality information at different stages of the information handling process. Describe **three** different costs for **three** different stages of the process, highlighting both the stage and the cost. [3 × 2]

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5. *(a)* A hospital uses word processing software for many of its administration tasks. Describe, to a new employee, what each of the following features are and explain the benefit of each to the hospital.

template   mailmerge   macros   [3 x 2]

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(b) Describe the differences between the functions found in home DTP software and large-scale professional DTP software. [4]

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6. Explain what is meant by data validation and describe **two** sensible validation methods that
could be used in home online banking systems, giving the type of errors that each method is
meant to prevent. [5]

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7. In the UK, there are a number of Acts covering the use of computers. Describe **three** of these Acts, giving examples of the malpractice or crimes that they are trying to control. [7]

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8. ICT plays a major role in the Health sector.

(a) (i) When patients visit hospitals, one or more of their body functions could be monitored. **Other than** temperature and blood pressure, give **four** other physical quantities that are measured by sensors. [2]

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(ii) Sensors allow patients to be constantly monitored (24/7). Describe **two** other advantages of using sensors to monitor patients. [2]

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(iii) Computers are used for control in other situations in a hospital. **Other than** *heating and lighting*, describe **three** other situations when ICT is used for control in the hospital. [3]

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(b) MRI and CAT scanners are devices that provide vital information in the diagnosis of many illnesses. Discuss the similarities and differences between MRI and CAT scanners.　　[5]

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(c) **Other than** what has been mentioned in *(a)* or *(b)*, describe **three** recent and future developments of the use of ICT in medicine.　　[3 × 2]

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SECTION B

*Answer **all** questions.*

9. There are thousands of weather stations around the world measuring land, air and sea temperatures, as well as satellites, ships and aircraft that also take measurements. These measurements are the data which is processed to produce the simulation models used in weather forecasting.

    Describe the hardware requirements needed to run simulation models. **Other than** *temperature*, describe **two** measurements used in weather forecasting models. Describe **two** advantages of using simulation modelling for forecasting the weather. [4]

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YOU MUST REFER TO YOUR OWN SPREADSHEET TO ANSWER THE FOLLOWING QUESTION.

IF NO SPREADSHEET EVIDENCE IS SUBMITTED THEN NO MARKS CAN BE AWARDED.

MAKE SURE THAT YOU SHOW IN YOUR ANSWER WHERE THE FUNCTIONS/FORMULAS CAN BE FOUND IN YOUR SPREADSHEET.

10. *(a)* Describe the purpose of **one** function from each of the lists below, which you have used in your spreadsheet. [2 × 2]

    A: COUNT, MAX, MIN, AVERAGE, RAND
    B: SINGLE IF, MULTIPLE IF, ROUND

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(b) Describe the purpose of the *startup user interface* you have used in your spreadsheet.
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(c) Describe **two** other techniques that you used to simplify data entry in your spreadsheet.

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(d) Describe the purpose of:

   (i)   a sort, you used in your spreadsheet; [2]

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   (ii)   a search, you used in your spreadsheet; [2]

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   (iii)   absolute cell referencing, you used in your spreadsheet. [2]

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**ENSURE YOU ATTACH THE PRINTOUTS OF YOUR SPREADSHEET TO YOUR
EXAMINATION ANSWER PAPER.**

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END OF PAPER