MARK SCHEME for the October/November 2014 series

0417 INFORMATION AND COMMUNICATION TECHNOLOGY

0417/11 Paper 1 (Written), maximum raw mark 100

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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1 A optical disc drive   B USB ports
   C memory card slot   D on/off button   [4]

2 **Two** from:
Bridge
Hub
Switch
Router
<u>Proxy</u> server
Network card   [2]

3

Look away from the screen from time to time	✓	[1]
Use a keyboard instead of a mouse		
Position your chair so that you are looking straight at the screen.	✓	[1]
Work without a break.		
Keep the screen as bright as you can		
Grip the mouse tightly		

4

	Hardware	Software	
Spreadsheet		✓	[1]
Digital camera	✓		[1]
Bar code reader	✓		[1]
Web page authoring program		✓	[1]

5 **Two** from:
Control
Measuring
Spreadsheet   [2]

6   RIGHT   90

      PENDOWN [1]

      REPEAT   8 [1]

      FORWARD   50 [1]

      LEFT   45 [1]

      END REPEAT [1]

PENDOWN **and** REPEAT 8 **are interchangeable.**

7   **(a) Four** from:

    (i)   4 [1]

    (ii) Engine size [1]

    (iii) Make [1]

    (iv) Maximum speed [1]

  (b) Engine size   **Make**

     Maximum speed   ⟨**Registration number**⟩ [1]

  (c) It is the only unique field [1]

  (d) Two from:
    Parallel running
    Direct changeover
    Phased implementation
    Pilot running [2]

8   **(a) Two** from:
    Temperature sensor
    Light sensor
    pH sensor
    O_2 sensor
    CO_2 sensor [2]

  (b) Two from:
    There are no output control devices
    The computer is not acting as a result of the input
    The output has no effect on the input [2]

(c) Spreadsheet/database [1]

(d) DTP/Word processing/Presentation/web authoring software/database [1]

(e) **Four** from:
Sensors are placed in the river
The sensors feedback/sends data to computer
Data is converted from Analogue to Digital/sent through an ADC
Graphs are <u>automatically</u> produced by computer…
Graphs/charts are plotted against time [4]

9 **Two** from:
Do not download software/music/games from unknown/untrusted sources/(only) download files
from reputable sources
Do not open email (attachments) from unknown/untrusted sources
Do not use media from unknown sources [2]

10 (a) (i) **Two** from:
LAN is a Local Area Network
LAN covers a small area/one building
A school network is a LAN [2]

   (ii) **Two** from:
WAN is a wide area network
WAN covers a large geographical area/worldwide
The Internet is a WAN
A WAN consists <u>of connected</u> LANs [2]

(b) Router/modem/cable [1]

11 (a) **Three** from:
Animation such as cartoons/moving text
Sound such as voiceovers/special sound effects/music
Hyperlinks/hotspot to move between pages/sites
Video such as moving images/reasonable example
Rollovers to change images
Search box to find items on that site quickly [3]

(b) (i) **Two** from:
It is a copy of data
Leaving the original intact
Stored away from the original [2]

    (ii) **Two** from:
       Data could be corrupted on original medium
       Data could be accidentally amended/overwritten on original medium
       Data could be accidentally deleted from original medium
       Data could be maliciously deleted/edited from original medium   [2]

12 (a) (i) Joyce Alonzo and Aftab Ali   [1]

    (ii) Maria Jones   [1]

    (iii) David Senior   [1]

  (b) Visual verification/visually comparing data entered with original   [1]
     Double data entry/entering data twice and the computer compares them   [1]

  (c) (i) Range (check)/lookup (check)   [1]

    (ii) (Invalid) character (check)/type (check)   [1]

    (iii) Length (check)   [1]

13 **Three** from:
  In the event of a crash – safer, no loss of life/injuries
  In the event of a crash – don't have to pay for replacement vehicle/repairs
  Can simulate situations which don't often occur in real life
  Can train even in extreme conditions   [3]

14 **Three** from:
  Can monitor continuously/readings can be taken more frequently
  Nurses can get tired and forget to take readings/nurses are so busy they might not be able to take readings regularly
  Computer readings are more accurate/human errors are reduced/Computers are more accurate
  More than one variable can be measured at any one time
  Results/data can be analysed automatically/Charts are produced automatically
  Automatic warnings can be generated/faster to react
  Nurses are free to do other tasks
  Reduces chances of nurses being exposed to contagious diseases
  Reduced cost of wage bill   [3]

15 **Five** from:
  Data is gathered/collected from experts
  Knowledge base is designed/created
  A structure to relate each item in the knowledge base is created
  An interrogation technique to access the data is created
  A user interface/method of displaying the results/method of inputting data/input screen/output screen is designed/created
  The inference engine is designed/created
  The rules base is designed/created
  The system is tested   [5]

16 (a) **Two** from:
(Cannot) deposit cash
(Cannot) withdraw cash
(Cannot) deposit cheques with most banks [2]

(b)

What is the name of the fourth planet from the Sun?	
What is your favourite place?	✓
How many miles is it from New York to Washington?	
What is your mother's maiden name?	✓
Who is the prime minister of Australia?	
What is the capital of France?	

[1]

[1]

(c) **Two** from:
Initial cost of hardware/software (is expensive)
Need to retrain staff
Loss of customers/more difficult to sell other services – due to lack of personal touch
System maintenance may be/is expensive/cost of system maintenance [2]

(d) **Three** from:
Causes data to be scrambled/encoded
Requires an encryption key/software to encrypt
Requires a decryption key/encryption/key/software to decrypt
Results in data which is not understandable/readable
Protects sensitive data…
… from being understood if it falls in to the wrong hands [3]

17 **Five** from:
Adequate space for response/individual character boxes
Fonts/font size should be easy to read
Instructions how to complete form/clearly labelled field names
Logical order of questions
Questions spaced out/group relevant fields together
Not too much text
Sensible colour scheme
Use of tick boxes
Strikethroughs
Appropriate white space/fills the page [5]

18 Six from:

Fax
Personal data more likely to be intercepted by another office worker
Quicker to receive message than using post
Document with signature is legally acceptable via fax
Documents can be lower quality when received

Email
Personal data less likely to be intercepted by another office worker
No need to do printouts therefore more secure
Attached documents are better quality in attachment
Email is more environmentally friendly
Email attachments can be edited by recipient easier than fax/post
Multimedia attachments can be sent by email
Quicker to receive message than using post
You can send from anywhere there is an internet connection by email
Easier to send to several recipients at the same time using email
Has a lower running cost such as paper/ink than fax
More people have access to email than fax machines
You cannot send solid objects by email

Post
Received more slowly by recipient
Attached documents are better quality in post
Multimedia documents can be sent by post
Solid objects can be sent by post
You can send from anywhere
Document with signature is legally acceptable
Don't have to worry about equipment being faulty
More people have access to post than fax machines

One mark can be awarded for a reasoned conclusion [6]

19 Six from:
Internet is not regulated
Danger of accessing inappropriate websites.
Can take long time to find required information
Have to have internet connectivity/computer/phone line/modem
Internet tends to be up to date
Internet has vast amounts of information/wide range of information
Can access biased/inaccurate/unreliable websites
Lack of expertise can lead to inefficient searching
Easy to plagiarise information [6]

20 **Two advantages** from:
Can reach more people
Easier to update
Can have multimedia which would attract more customers/eye-catching [2]

Two disadvantages from:
More expensive to start up/pay programmers/developers
More expensive to maintain
Need specialist equipment to start with
May not reach target audience [2]