COMPUTER APPLICATIONS TECHNOLOGY: PAPER II

MARKING GUIDELINES

Time: 3 hours   150 marks

These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.

The IEB will not enter into any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.

SECTION A

QUESTION 1

1.1   1.1.1   B

       1.1.2   C

       1.1.3   B

       1.1.4   B

       1.1.5   C

       1.1.6   C

       1.1.7   D

1.2   1.2.1   CAPTCHA

       1.2.2   Conditional formatting

       1.2.3   Patches

       1.2.4   Combo box

       1.2.5   Operating system

QUESTION 2

2.1   2.1.1   J

       2.1.2   K

       2.1.3   N

       2.1.4   B

       2.1.5   I

       2.1.6   A

       2.1.7   M

       2.1.8   F

2.2   2.2.1   SSL

       2.2.2   OCR

       2.2.3   CPU

       2.2.4   EULA

       2.2.5   RFID

SECTION B

QUESTION 3   SYSTEM TECHNOLOGIES

3.1

Question number	Name of hardware/ software	Main function
3.1.1	Braille keyboard	Special type of keyboard, usually featuring raised dots, that is **used by visually impaired people to enter data into the computer**. **OR** Is a specialist input device that **allows the user to type and enter text or instructions for the computer in Braille**. **(Any suitable answer that mentions a keyboard used by visually impaired people)**
3.1.2	Sound Card	Generating sounds (function as a synthesiser), **OR** Function as a MIDI interface. **OR** Function as analog-to-digital conversion (used, for example, in recording sound from a microphone). **OR** Function as digital-to-analog conversion (used, for example, to reproduce sound for a speaker).
3.1.3	UTP cable/ network cable	UTP cables are used for short to medium distances to transfer data and audio signals. **OR** Used to transfer data at low speeds. **OR** Used as Ethernet cables and telephone wires. **(Any suitable answer that indicates that it is used in a network for connection)**
3.1.4	**External** CD/DVD player or Burner	Allows you to use CDs, DVDs, and Blu-ray discs to listen to music or watch a movie. **OR** Most drives also allow you to read data from a disc and to write data to a disc. **(Any suitable answer that explains the use of a optical drive)**

3.2   2 TB

3.3
- Some hardware components are damaged
- Operating system error (accept changes to CMOS/BIOS settings)
- Software faulty (do not accept if only the word 'software' is given – reason must be included, e.g. corruption or new installation)
- Power surge/fluctuation
- Problems caused by malware (e.g. viruses, etc.)
- Hard drive/CPU and RAM failure, etc.

(Note to marker: There should be different reasons under each bullet point. Do not accept the failure of non-critical components, e.g. 'fan does not work', 'changed software settings', etc)

3.4
- Allows owner to do some work at home/mobility/no cables
- Takes up less space/smaller
- Can use battery power for limited period of time, etc.
- Contributes to green computing/uses less electricity
- Mobile Internet connectivity

3.5   3.5.1   Bluetooth and Infrared

3.5.2   Range of pick-up: Bluetooth has a longer range compared to infrared
Line of sight: Bluetooth does not need to be in line of sight whereas infrared needs to be in line of sight

3.5.3   The device has TWO operating systems installed.

3.5.4   (a)   Output

(b)   Output

3.6   3.6.1   Disk Defragmentation:
- Reorganises/rearranges data on the hard drive
- Connects fragmented parts of files so that access to files is faster

3.6.2   Disk Cleanup:
- It will remove temporary files
- It will empty the Recycle Bin
- It will remove unnecessary system files

QUESTION 4   INTERNET AND NETWORK TECHNOLOGIES

4.1   4.1.1   Wi-Fi – no cables wireless (electromagnetic wave)
                Router – cable – copper/fibre optic cables (wiring)

       4.1.2   Wi-Fi – move around in area covered by signal (footprint)
                Router – cable – move around in area limited by cable length

4.2   4.2.1   • Provide all users with passwords/encryption
                • Install a firewall
                • Set/restrict access rights
                • Biometric device, etc

       4.2.2   • Use both upper- and lower-case letters
                • Use a combination of numbers, letters and other characters
                • Do not use easily identifiable information, for example, name, ID numbers, etc.
                • Make the password longer than 8 characters

       4.2.3   • Power failure
                • Power surges
                • Hardware failure/disk crash, etc. (Accept specific examples)

4.3   A search engine is part of a webpage/application/an Internet program that allows a user to find other webpages based on keywords.

       A webpage is an interactive document that is displayed on the World Wide Web/Internet.

4.4   • Chatbots do not possess proficient language processing skills
       • Chatbots will not remember the conversation if it is broken or interrupted
       • Chatbots are programmed with a set of rules and limited decision-making
       • Chatbots are not as 'intelligent' as virtual/digital assistants
       • Virtual/digital assistants use a dynamic flow method and are always on track whereas chatbots need to be updated

QUESTION 5   INFORMATION MANAGEMENT

5.1
- Accurate
- Up to date/Current
- Valid
- Correct/verified
- Relevant
- Complete
- Correct format

5.2 **INPUT:**
Information is gathered from the customers regarding the booking

PROCESSING:
The system will check the availability of the booking

OUTPUT:
Confirmation of the booking will be sent/viewed

5.3 The < and > signs were swopped
Any number less than zero or greater than 12 can be entered

The OR should be replaced with AND
The numbers won't be restricted within a range

5.4
- Computers help to collect information
- Computers help to make calculations
- The server keeps all customer information/information regarding bookings
- Computers can analyse and manipulate information
- Help keep information secure

Accept any relevant answer regarding the use of computers for handling information.

QUESTION 6   SOCIAL IMPLICATIONS

6.1   • Social networking/constantly checking messages
       • Checking profiles of others
       • Online gaming
       • Watching inappropriate content
       • Online shopping
       • Watching YouTube videos
       • Online dating

6.2   Passive digital footprint:
       • Data left behind without knowing when using the Internet
       • Cookies that capture users' Internet browsing history
       • Location tracking on a mobile phone
       • History of spending habits via a retailer's website/app

       Active digital footprint:
       • Social networking/constantly checking messages and commenting
       • Checking profiles of others
       • Online gaming
       • Online forum making comments
       • Online purchases
       • Signing up for coupons or creating an account
       • Registering for newsletters
       • Downloading and using shopping apps

6.3   • Check the source
       • Check the author
       • Check the date
       • Verify the news on substantiating sources
       • Read more about the topic

6.4   Reasons if candidate agreed:
       • The use of proxy servers
       • Cleaning browsing history
       • Encryption
       • The use of a VPN
       • Browser options such as 'Incognito' mode and Do Not Track (DNT), etc.

       AND/OR

       Reasons if candidate disagreed:
       • Cookies
       • Logging of IP addresses
       • Location-based services
       • Targeted advertising
       • Data surveillance, etc.

6.5

Way	Impact
– deskilling	– software has removed the need for some of the more traditional skills, e.g. using CAD
– (re-)training	– work practices have changed; need to learn how to use the new software/computer
– redundancy	– new technology allows work to be completed by fewer staff/outsourced to 'cheaper' work forces in foreign countries
– work from home (etc.)	– use of emails, VoIP, videoconferencing, instant messaging, etc. allow working away from the office
– nicer/safer workplace	– quieter (no noisy typewriters) and safer (no heavy filing cabinets)
– health (& safety)	– RSI, headaches, backaches; use of GPS technology e.g., direction

6.6
- Dangerous objects can easily be replicated.
- Copyright issues.
- Disruption of formal manufacturing sector.
- Loss of jobs.

QUESTION 7   SOLUTION DEVELOPMENT

7.1   Spreadsheet – calculations/invoices/orders/statements of accounts, financial statements, etc.
Word processing – correspondence, contracts, minutes of meetings, etc.
Database – employee data, stock data, suppliers'/debtors'/creditors' data, etc.
E-mail – communication
Web browser – internet searches

(Note to marker: Marks are not allocated for the applications but for the use of the application. Accept any valid response related to a small business.)

7.2
- Author
- Subject
- Company
- Dates created and modified
- Size
- Pages
- Words
- Title
- Tags
- Comments
- Template
- Status
- Categories, etc.

7.3   7.3.1   Bold
Text Wrapping
Centred horizontally and vertically

(Note to marker: In no particular order)

7.3.2   FIND/SEARCH

7.3.3   To be able to separate the name and surname using text functions

OR

To check that a space has been added to distinguish between the name and surname.

7.4   7.4.1   Hours

7.4.2   Square brackets are used around a field name

Round brackets are used for mathematical calculations/Force correct order of evaluation

SECTION C

QUESTION 8   INTEGRATED SCENARIO

8.1   8.1.1   Many devices are connected to the Internet and can be controlled through the Internet/without human to device interaction/communicate with each other.

       8.1.2   • IoT allows objects to be sensed and/or controlled remotely across an existing network infrastructure.
- IoT creates opportunities for more direct integration of the physical world into computer-based systems.
- IoT improves efficiency, accuracy and economic benefit.

8.2
- Update content regularly
- Use catchy titles/informal style
- Ask for and respond to feedback/criticism/comments
- The text should be easy to read/correct spelling
- Use an attractive template/design
- Consistent design/formatting
- Choose a URL that is easy to remember
- Make it possible to sign up for RSS
- Write concisely/use short sentences/paragraphs/bulleted lists
- Check quality/quantity/relevance of graphics
- All links should work

8.3
- Will be able to see each other/pick up gestures/body language.
- Many participants simultaneously.
- Holistic communication experience.

8.4
- Webinar
- Video call/video chat

8.5
- Google Hangouts
- Adobe Connect
- TeamViewer
- Zoom
- Microsoft Teams
- Cisco WebEx
- GoToMeeting

8.6   8.6.1   • To increase the speed of processing.
- To increase temporary storage/more volatile memory.

8.6.2   8.6.2.1   • Set up data projector to laptop with screen.
- Set up overhead projection facilities.
- Set up a big screen TV.
- Set up multiple big screen TVs.

8.6.2.2 High definition

Importance of port:
- For transmission of digital signals/no need to convert analogue signals.
- Faster transmission.
- Clearer/higher quality pictures.
- Audio and video simultaneously.
- Newest technology/compatible with latest devices (TVs and projectors).

8.6.3   • Microphone
- Speakers
- Web camera/video camera

8.6.4   So that different memory cards (CF, SD or MMC) can be read.

8.7   Definition
It is a term used to describe the pain caused by repeated movement of parts of the body

Solution:
- Take regular breaks
- The use of ergonomic design equipment
- Maintaining of good posture/adjust your chair and desk height
- Exercise regularly
- Don't stretch for the hard-to-reach keys (shift, ctrl, backspace, enter, etc.)

8.8   • Use devices with low energy consumption.
- Set devices to go into sleep mode when not in use.
- Recycling the components when computers are discarded.
- Older computers can be donated.
- Old printer cartridges can be refilled and reused.
- Less paper can be used when deciding what to print and how it should be printed
- Manufacturers can use fewer toxic chemicals in the manufacturing of equipment

8.9   • Stresses and other conditions affecting the real fruits around them.
- Temperature of fruit
- Pressure that was put on the fruit
- Weather conditions
- Location at specific time
- Distance travelled
- Time travelled.

QUESTION 9   INTEGRATED SCENARIO (continued)

9.1   9.1.1 • higher quality photos
             • when 'blown up' less likely for photo to 'pixelate'

       9.1.2 • uses more memory (on card)
             • takes longer to upload/download a photo
             • file will be bigger

       9.1.3 • solid state memory
             • flash drive
             • non-volatile

       9.1.4 • no moving parts (so more robust)
             • can be removed from camera and retain its contents
             • can erase contents and reuse memory card

       9.1.5   (pic)ture (el)ement

       9.1.6 • auto flash
             • anti (hand) shake facility
             • easy deletion of unwanted photos
             • ability to 'manipulate' images after they have been taken/special effects
             • 'smart' operation e.g. automatically pick out objects, faces, etc.
             • auto capture

9.2   9.2.1 A smartphone is a cellphone or mobile phone with an operating system.
             Smartphones can function as a cellphone, a camera and an Internet browser.
             Smartphones combine the functions of other mobile devices such as cellphones, cameras, Personal Digital Assistants (PDAs), mobile sensors, mobile payments and Internet computers.

       9.2.2 • Smaller/Lighter/More Compact
             • (Long/longer/better) Battery life
             • 3G (connectivity)/always connected
             • Can make voice calls, SMS, MMS, check diary

9.2.3
- Can navigate using mapping software
- Some apps require location finding in order to run
- Some apps will use location for services such as weather/shopping
- If an app needs the location feature, it is already switched on
- If the smartphone (or Christo) is missing, it (he) can be located

9.3   9.3.1 Save the file in RTF **OR** TXT format **OR** .doc format

9.3.2
- It marks a place that you want to find easy.
- Quickly navigate to a specific location.
- It saves time to not search through a document.
- Needed to create hyperlinks within the document etc.

9.3.3 A citation is a reference to the source used in a specific instance and is found in the text immediately after the piece of information being referred to.

9.3.4 Section breaks

9.4
- First row should be set to field names
- Missing field/device name in the third row/other data in wrong columns for row 2/3
- Wrong delimiter used/data is not separated into columns in the last row

9.5   9.5.1 6

9.5.2 Number

9.6   <td rowspan = 2>Cell 1</td>

Add the attribute rowspan and value 2 to the <td> tag

Total: 150 marks