MODULE H SOFTWARE · H4

Peripheral management, drivers and the user interface: mark scheme

20 marks · OCR J277 spec 1.5.1: the purpose and functionality of operating systems: user interface (features of a user interface); peripheral management and drivers (data is transferred between devices and the processor, and this process needs to be managed)

How to use. 1 mark per bullet up to the maximum shown. **/** separates alternative words; **//** separates alternative answers for the same mark. Words in (brackets) are not needed for the mark. NE = not enough. Credit any other valid answer that shows the same understanding.

QUESTION	ANSWER	MARKS	GUIDANCE
1(a) J277 1.5.1	Data is transferred between the peripherals and the processor: True The transfer … does not need to be managed: False A device driver is a piece of hardware fitted inside the printer: False The printer and the graphics tablet each need their own device driver: True	**4**	1 mark per correct row. 2 ticks in a row = 0 for that row.
2(a) J277 1.5.1	1 mark per bullet, max 2: (It is) software / a program … that allows the operating system to communicate with / control a (specific) hardware device / peripheral // allows the peripheral to communicate with the processor … translates (general) instructions / data from the operating system into commands / a form that the (specific) device understands … it is written for one specific device / model (of printer)	**2**	The "software" bullet alone scores 1; a second mark needs what it does. "Lets the printer work" alone = NE. Do not accept "hardware" or "a cable".
2(b) J277 1.5.1	1 mark per bullet, max 2: A device driver is specific to one device / type / model of hardware The graphics tablet is different hardware // uses different commands / data / instructions from the printer The printer driver translates into commands for the printer only // would not translate the tablet's data correctly The tablet is an input device (sends data to the processor) but the printer is an output device (receives data from the processor)	**2**	"They are different devices" alone = NE; the answer needs to link to the driver being specific or to different commands. Accept "each device has its own driver" for the first bullet.

QUESTION	ANSWER	MARKS	GUIDANCE
2(c) J277 1.5.1	1 mark for one of: To fix bugs / errors (in the old driver) To add new features / support new functions of the printer So the printer still works with / is compatible with an updated operating system To fix a security weakness / vulnerability To improve the performance / reliability of the printer	**1**	Mark the first answer only. "To make it better" alone = NE. "Faster" alone = NE; accept "prints faster" / "improves performance".
3(a) J277 1.5.1	1 mark per bullet, max 3: The operating system transfers / sends the data for the poster from the processor / memory to the printer It uses the printer's device driver ... ... to translate the data / instructions into commands the printer understands It manages the order of print jobs // holds the data in a (print) queue / buffer until the printer is ready It receives data / signals back from the printer, e.g. that it is ready / busy / out of paper / has an error It reports the printer's status / errors to the user (through the user interface)	**3**	"It manages the printer" / "it controls the printer" alone = NE (repeats the question). "It prints the poster" alone = NE. Accept "spooling" for the queue bullet.
4(a) J277 1.5.1	1 mark per bullet, max 2: Allows the user to communicate / interact with the computer / hardware / software Receives / takes input (commands) from the user Displays / gives output / feedback to the user, e.g. error messages Hides the complexity of the hardware from the user // lets the user use the computer without knowing how the hardware works	**2**	"Lets the user use the computer" alone = NE. "Makes it easy to use" alone = NE.
4(b) J277 1.5.1	1 mark each, max 2: Windows Icons Menus Pointer / mouse pointer / cursor Buttons Dialogue boxes, e.g. an Open file box Folders shown graphically // a file browser / explorer window Search box / bar Double-click // drag and drop // touch / tap on screen	**2**	Mark the first two answers only. Two answers that are the same feature = 1 mark. Accept "WIMP" for 1 mark only. Do not accept hardware alone, e.g. "mouse", "keyboard", "monitor". Do not accept "command line".

QUESTION	ANSWER	MARKS	GUIDANCE
5(a) J277 1.5.1	1 mark per bullet, max 4: The operating system has detected the scanner (but) does not have the driver for it Without the driver the operating system cannot communicate with / control the scanner ... the operating system's instructions cannot be translated into commands the scanner understands // the scanner's data cannot be understood by the operating system ... so data cannot be transferred (managed) between the scanner and the processor The correct / matching device driver for this scanner must be installed (before it can be used) e.g. downloaded from the scanner manufacturer's website // installed from a disc / download supplied with the scanner // found / installed automatically by the operating system The driver may need to be compatible with the computer's operating system (version) The message is the user interface giving feedback to the user (about the device)	**4**	Max 3 if the answer does not say that the correct driver must be installed. "It needs a driver" alone = 1 mark (the installing bullet); a reason is needed for further marks. Do not accept "the scanner is broken" or "the scanner needs to be restarted".

Total: 20 marks