

1.1 PROCESSORS, INPUT/OUTPUT AND STORAGE · 1.1.3

Input & output devices — Mark scheme

33 marks · spec 1.1.3(a)

AO key: AO1 = knowledge & understanding · AO2 = application · AO3 = reasoned judgements. Accept any valid alternative; do not award the same point twice. For "name + reason", award the device and the justification separately.

Q	ANSWER	AO	MARKS
1(a)	1 mark per valid input device, max 2 (e.g. keyboard, mouse, scanner, barcode reader, microphone, sensor, touchscreen). (2)	AO1	2
1(b)	1 mark per valid output device, max 2 (e.g. monitor, printer, speaker, actuator). (2)	AO1	2

Q	ANSWER	AO	MARKS
2(a)	Names a suitable sensor (1) and states what it measures, e.g. heart-rate / pulse (1); accept accelerometer (motion), temperature, GPS. (2)	AO2	2
2(b)	Names a suitable output device, e.g. (small) screen / vibration motor / speaker (1) with a valid reason, e.g. shows stats at a glance / silent alert (1). (2)	AO2	2
2(c)	It displays output (like a screen) and detects touch as input (1); so it both shows information and lets the user control the device (1). (2)	AO1	2

Q	ANSWER	AO	MARKS
3(a)	Names an input device (barcode scanner / touchscreen / weighing scale / card reader) (1) + how used, e.g. scans product barcodes to identify items (1). (2)	AO2	2
3(b)	Names an output device (screen / receipt printer / speaker) (1) + how used, e.g. prints a receipt / gives audio prompts (1). (2)	AO2	2
3(c)	1 mark per point, max 2: <ul style="list-style-type: none"> it is faster than typing each code (1) it is more accurate / reduces input errors (1) 	AO2	2

Q	ANSWER	AO	MARKS
4(a)	One suitable device: eye-tracking system / large single switch / sip-and-puff / voice input (microphone). (1)	AO1	1
4(b)	Describes how it gives control, e.g. eye movements move a cursor and a dwell/blink selects (1); allowing input without fine hand movement (1). (2) Answer must match the device named in (a).	AO2	2
4(c)	One valid limitation, e.g. slower than typing (1); can be tiring / less accurate / affected by lighting or background noise (1). (2)	AO2	2

Q	ANSWER	AO	MARKS
5(a)	A component that converts an electrical signal (from the computer) (1) into physical movement / action (1). (2)	AO1	2
5(b)	A valid control system (e.g. central heating / robot arm / automatic door) (1) + what the actuator does (e.g. opens the valve / moves the arm / opens the door) (1). (2)	AO2	2

Q	LEVELS-OF-RESPONSE MARK SCHEME	AO	MARKS										
6	<p>Mark using the levels descriptors below. AO1 (knowledge of devices), AO2 (application to the kiosk), AO3 (justified judgement for the environment).</p> <table border="1"> <thead> <tr> <th>LEVEL</th> <th>DESCRIPTOR</th> </tr> </thead> <tbody> <tr> <td>Level 3 (7–8)</td> <td>A range of suitable input and output devices, each clearly justified for a busy public museum (durability, ease of use, hygiene, no theft of peripherals, audio for videos). Balanced and well structured.</td> </tr> <tr> <td>Level 2 (4–6)</td> <td>Several suitable devices with some justification linked to the context. May lean to input or output only.</td> </tr> <tr> <td>Level 1 (1–3)</td> <td>Lists devices with little or no justification or link to the museum context.</td> </tr> <tr> <td>0</td> <td>Nothing creditworthy.</td> </tr> </tbody> </table> <p>Indicative content (credit any valid point):</p> <ul style="list-style-type: none"> • Input: touchscreen (intuitive, no separate keyboard/mouse to be stolen or damaged), possibly a camera or motion sensor; rugged, sealed surfaces for heavy public use and cleaning. • Output: screen for information and video; speakers or a directional/handset audio so sound does not disturb the gallery; headphone socket as an option. • Justification themes: durability, vandalism/theft resistance, hygiene, accessibility for all ages, and the noisy public environment. 	LEVEL	DESCRIPTOR	Level 3 (7–8)	A range of suitable input and output devices, each clearly justified for a busy public museum (durability, ease of use, hygiene, no theft of peripherals, audio for videos). Balanced and well structured.	Level 2 (4–6)	Several suitable devices with some justification linked to the context. May lean to input or output only.	Level 1 (1–3)	Lists devices with little or no justification or link to the museum context.	0	Nothing creditworthy.	AO1 ×3 AO2 ×3 AO3 ×2	8
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Total for paper: 33 marks