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

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Input devices for a gaming computer

Mice for gamers by: name

This is the fourth of our articles on building your "Crazy but Cool" computer. It may only be a fantasy, but in the first three articles, we explored choosing a motherboard and CPU for a maximum speed gaming machine. Then we looked at cases, power supplies and hard disk drive storage. This week we consider input devices suited to a gamer.

Many types of computer mouse have been designed since the mouse device was first developed. When user interfaces became more and more graphic based, the need for a mouse as a pointing device for input was desired by users. Up until the late 90s the mechanical mouse was the only type of mouse available. It had a ball that moved two rollers. One rotor moved the pointer along the x-axis, the other along the y-axis.

Crude prototypes of mouse-like pointing and navigating devices were developed and computer mouse types have evolved since then to become faster and more responsive and improve user experience. A lot of improvements have been made in the field of computer pointing devices, especially in the last decades. Computer mouse types started proliferating after the introduction of the optical mouse technology.

There are several computer mouse types available and the buyer can be overwhelmed with so many choices. There are mouse types suited to cater to several diverse applications. The optical mouse types were the first break from conventional mechanical technology. Now the mouse could be moved more freely and was not hampered by mechanical limitations of materials. This technology used a light emitting diode (LED) and sensors to detect movements of the mouse in relation to the underlying surface. This was a big improvement but more computer mouse types were to come. The inertial mouse and the gyroscopic mouse require minor movements for operation and can provide more ergonomic use, reducing the risk of Repetitive Strain Injury to the user.
Candidate name, Centre number, candidate number

An improvement over the optical mouse was the laser mouse. This device used an infrared laser instead of an LED light. This improves the resolution and makes the mouse more responsive, improving navigation capabilities. Apart from these, there are several specialised and novel computer mouse types. There are mice designed for gamers. They have extra buttons on the sides to help gamers have better control and quicker response over the interactive gaming atmosphere. In fact, one mouse takes it to the extreme by opening up as a clamshell and offering a fully-fledged joystick inside!

The development of the cordless mouse means you no longer have to wrestle with that irritating cord that always keeps getting in the way. The disadvantage is that you have to keep replacing the batteries. There are several different computer mouse types being developed by companies all the time. One of them is the tactile mouse, which allows the user to feel vibrations as the mouse is moved over certain areas, like over the boundary of a window frame.

You can find a computer mouse for just about any use. To figure out what kind of mouse would work best with your PC, you need to know your mouse options:

- Mechanical mouse: Houses a hard rubber ball that rolls as the mouse is moved. Sensors inside the mouse body detect the movement and translate it into information that the computer interprets.
- Optical mouse: Uses a sensor to detect tabletop movement and then sends off that information to the computer for processing.
- Infrared (IR) or radio frequency cordless mouse: With both these types, the mouse relays a signal to a base station wired to the computer's mouse port. The cordless mouse requires power, which comes in the form of batteries.
- A mouse with many buttons: The extra buttons can be programmed to do specific things, such as navigate the Web or turn pages when you’re reading a document. The typical programmable mouse has about five buttons.
- Stylus mouse: Another mouse mutation enjoyed by the artistic type is the stylus mouse, which looks like a pen and draws on a special pad.
- Cordless 3-D mouse: This kind of mouse can be pointed at the computer screen like a TV remote control.
Compare these three gaming mice and their features. One of them is bound to suit your needs!

<table>
<thead>
<tr>
<th>Make</th>
<th>Razer</th>
<th>Logitech</th>
<th>Alienware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Imperator</td>
<td>Gaming Mouse G700</td>
<td>TactX Mouse</td>
</tr>
<tr>
<td>Features</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6400dpi 4G Dual Sensor System</td>
<td></td>
<td>200-5700dpi</td>
<td>5000dpi laser Engine</td>
</tr>
<tr>
<td>Rubberised contoured thumbgrip for added control</td>
<td></td>
<td>Image processing: 12 megapixels/second</td>
<td>Smooth scrolling and movements</td>
</tr>
<tr>
<td>Ergonomic right handed design</td>
<td></td>
<td>十三teen programmable controls</td>
<td>Nine programmable buttons</td>
</tr>
<tr>
<td>Adjustable side buttons</td>
<td></td>
<td>Natural curves to fit the hand effortlessly</td>
<td>Dual vertical scroll modes</td>
</tr>
<tr>
<td>On-board memory</td>
<td></td>
<td>Dynamic coefficient of friction</td>
<td>Ergonomic design for long, comfortable play</td>
</tr>
<tr>
<td>Rapid acceleration</td>
<td></td>
<td>Acceleration 30G max up to 4.19m/second</td>
<td></td>
</tr>
<tr>
<td>Seven programmable buttons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-the-fly Sensitivity adjustment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zero-acoustic Ultra slick mouse feet</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table:**
- Table resized to fill page width: 1 mark
- Text inserted correctly in column 2: 1 mark
- Text inserted correctly in column 3: 1 mark
- Text inserted correctly in column 4: 1 mark
- Font matches body text (12pt serif): 1 mark
- Left column text bold: 1 mark
- Top two rows only shaded light grey: 1 mark
- All gridlines printed. Outside lines only thick e.g. 3 point: 1 mark
## Mark Scheme

**Order for new mice**

<table>
<thead>
<tr>
<th>Make</th>
<th>Model</th>
<th>Features</th>
<th>Connection</th>
<th>Buttons</th>
<th>Programmable</th>
<th>Gaming</th>
<th>Cost_Price</th>
<th>Stock</th>
<th>Reorder</th>
<th>Item_Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acer</td>
<td>Ferrari</td>
<td>Wireless</td>
<td>2</td>
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<td>5</td>
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<td>Wired</td>
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<td>No</td>
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<td>5</td>
<td>5</td>
<td>€129.95</td>
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<td>Dual</td>
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<td>5</td>
<td>5</td>
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<tr>
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<td>Wired</td>
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<td>5</td>
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<tr>
<td>Razer</td>
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<td>Wired</td>
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<td>3</td>
<td>5</td>
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<tr>
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<td>Wired</td>
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</tbody>
</table>

**Value of order**

€2,090.00

- **Report heading correct** 1 mark
- **Two records added with no errors** 2 marks
- **Stock less than 10** 1 mark
- **Sorted in ascending order of Make** 1 mark
- **All fields except Notes** 1 mark
- **All data and labels fully visible** 1 mark
- **Fits one page wide** 1 mark
- **Orientation is landscape** 1 mark
- **Name, Centre number, candidate number on left below report** 1 mark

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## Mice for Gamers

**Make:** Logitech  
**Model:** G700  
**Connection:** Wireless  
**Retail Price:** €107.99  
**Notes:** Candidate name, Centre number, candidate number

**Make:** Razer  
**Model:** Naga Epic  
**Connection:** Dual  
**Retail Price:** €65.99  
**Notes:** Features downloadable in-game addons for most MMO games.  
Candidate name, Centre number, candidate number

**Make:** Razer  
**Model:** The Old Republic  
**Connection:** Wireless  
**Retail Price:** €65.99  
**Notes:** The Old Republic Gaming Mouse will execute battle plans faster with 17 buttons at your fingertips.  
Candidate name, Centre number, candidate number

**Make:** Razer  
**Model:** Imperator  
**Connection:** Dual  
**Retail Price:** €65.99  
**Notes:** The Imperator is fitted with an ultra-precise 4G Dual Sensor system that makes use of both a laser and an optical sensor to enhance tracking precision.  
Candidate name, Centre number, candidate number

**Make:** Razer  
**Model:** Naga  
**Connection:** Wireless  
**Retail Price:** €65.99  
**Notes:** Candidate name, Centre number, candidate number

**Make:** Razer  
**Model:** Orochi  
**Connection:** Dual  
**Retail Price:** €41.99  
**Notes:** Bluetooth connectivity to most laptop computers.  
Candidate name, Centre number, candidate number

**Make:** Razer  
**Model:** Mamba  
**Connection:** Dual  
**Retail Price:** €40.79  
**Notes:** Unrivalled gaming grade wireless technology means the Razer mamba performs as well cordless as it does corded giving you utter freedom of motion whilst you win gloriously in games.  
Candidate name, Centre number, candidate number

**Make:** Razer  
**Model:** Ouroboros  
**Connection:** Wireless  
**Retail Price:** €31.19  
**Notes:** Interchangeable side panels make this suitable for left or right handed users. Adjustable size to suit different hands make for minimised fatigue and maximised comfort.  
Candidate name, Centre number, candidate number

---

**Selection Wireless or Dual and gaming** 1 mark  
**Retail Price calculated** 1 mark  
**Sorted on Retail Price descending order** 1 mark  
**Two labels side by side layout in portrait** 1 mark  
**Labels have heading in larger font** 1 mark  
**Five specified field contents** 1 mark  
**Appropriate field labels added** 1 mark  
**Candidate details at bottom of label** 1 mark

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Slide 1 title and subtitle layout 1 mark
Subtitle added 1 mark

Slides created from source file as titles and bullets 1 mark
Bullets consistent across slides 1 mark

Audience notes 6 per page 1 mark

Slide master
Two thick vertical lines drawn 1 mark
Name, Centre no, candidate no. bottom left 1 mark
Slide numbers bottom right 1 mark
No overlap master slide items or slide items 1 mark
Step 1 – Contact details stored in address book

Contacts added 1 mark

Step 2 – Email group

Group created 1 mark
Steps 4 and 5 - Page size and layout evidence

Paper size A4
Mark from screenshot

Margins setting and orientation evidence
Mark from screenshot
Step 28 – Database field structure

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make</td>
<td>Short Text</td>
</tr>
<tr>
<td>Model</td>
<td>Short Text</td>
</tr>
<tr>
<td>Features</td>
<td>Short Text</td>
</tr>
<tr>
<td>Connection</td>
<td>Short Text</td>
</tr>
<tr>
<td>Buttons</td>
<td>Number</td>
</tr>
<tr>
<td>Programmable</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Gaming</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Cost_Price</td>
<td>Currency</td>
</tr>
<tr>
<td>Stock</td>
<td>Number</td>
</tr>
<tr>
<td>Reorder</td>
<td>Number</td>
</tr>
<tr>
<td>Notes</td>
<td>Long Text</td>
</tr>
</tbody>
</table>

Fields as given with correct data types 1 mark
Min_Stock level field not imported 1 mark
Cost_Price field number / Currency 1 mark
Programmable and Gaming as Boolean 1 mark
Boolean fields displayed as
Yes/No or checkbox in report 1 mark
Notes text or memo (long text) 1 mark

Step 32 – Automatic calculation of the Value of order

Field calculation evidence

Value of order = Sum([item_value])

Step 42 – Transitions and animations evidence

Transitions evidence 1 mark
Animations evidence 1 mark
Step 46 – Email message

Message to design.h@cie.org.uk 1 mark
Copied to group 1 mark
Subject correct 1 mark
Attached file 1 mark
Message content 1 mark

Candidate name
Centre number
Candidate number

The document for your editorial comments is attached.