**Study Results of four components: Single variable-single answer (out of 3)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **pid** | **ca-bubble** | **ca-grid** | **vsup-bubble** | **vsup-grid** |
| 1 | 3 | 3 | 2 | 3 |
| 2 | 3 | 3 | 3 | 3 |
| 3 | 3 | 2 | 3 | 3 |
| 4 | 3 | 3 | 3 | 2 |
| 5 | 3 | 3 | 3 | 3 |
| 6 | 3 | 2 | 3 | 2 |
| 7 | 3 | 2 | 2 | 2 |
| 8 | 3 | 3 | 3 | 1 |
| 9 | 2 | 3 | 2 | 3 |
| 10 | 2 | 3 | 3 | 2 |
| 11 | 3 | 3 | 2 | 3 |
| 12 | 3 | 3 | 3 | 3 |
| 13 | 2 | 2 | 3 | 2 |
| 14 | 3 | 3 | 3 | 2 |
| 15 | 3 | 3 | 3 | 3 |
| 16 | 3 | 2 | 3 | 2 |
| 17 | 3 | 3 | 3 | 3 |
| 18 | 3 | 3 | 2 | 3 |
| 19 | 3 | 3 | 3 | 3 |
| 20 | 2 | 3 | 3 | 3 |
| 21 | 3 | 3 | 2 | 3 |
| 22 | 2 | 2 | 2 | 3 |
| 23 | 3 | 3 | 3 | 3 |
| 24 | 3 | 2 | 2 | 3 |
| 25 | 3 | 3 | 3 | 3 |
| 26 | 2 | 2 | 2 | 3 |
| 27 | 3 | 2 | 3 | 3 |
| 28 | 3 | 2 | 3 | 3 |
| 29 | 2 | 2 | 2 | 3 |
| 30 | 3 | 3 | 3 | 3 |
| 31 | 3 | 3 | 3 | 3 |
| 32 | 2 | 2 | 3 | 2 |
| **Avg** | 2.8 | 2.6 | 2.7 | 2.7 |

**Study Results of four components: Single variable-all answers (out of 2)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **pid** | **ca-bubble** | **ca-grid** | **vsup-bubble** | **vsup-grid** |
| 1 | 1 | 0 | 0 | 0 |
| 2 | 2 | 0 | 1 | 0 |
| 3 | 1 | 2 | 0 | 0 |
| 4 | 2 | 2 | 2 | 1 |
| 5 | 2 | 1 | 1 | 0 |
| 6 | 1 | 0 | 2 | 0 |
| 7 | 1 | 1 | 1 | 0 |
| 8 | 2 | 0 | 1 | 0 |
| 9 | 1 | 2 | 0 | 0 |
| 10 | 1 | 1 | 0 | 0 |
| 11 | 2 | 2 | 2 | 1 |
| 12 | 1 | 1 | 0 | 0 |
| 13 | 0 | 1 | 1 | 0 |
| 14 | 1 | 0 | 0 | 0 |
| 15 | 1 | 1 | 1 | 2 |
| 16 | 1 | 1 | 1 | 1 |
| 17 | 2 | 0 | 1 | 1 |
| 18 | 1 | 0 | 0 | 0 |
| 19 | 2 | 2 | 1 | 1 |
| 20 | 0 | 1 | 0 | 0 |
| 21 | 1 | 1 | 0 | 0 |
| 22 | 0 | 0 | 0 | 0 |
| 23 | 2 | 1 | 2 | 1 |
| 24 | 1 | 2 | 1 | 0 |
| 25 | 2 | 2 | 1 | 0 |
| 26 | 1 | 1 | 1 | 0 |
| 27 | 1 | 1 | 1 | 0 |
| 28 | 2 | 2 | 1 | 0 |
| 29 | 0 | 0 | 0 | 0 |
| 30 | 1 | 1 | 1 | 0 |
| 31 | 2 | 0 | 2 | 1 |
| 32 | 1 | 0 | 1 | 0 |
| **Avg** | 1.2 | 0.9 | 0.8 | 0.3 |

**Study Results of four components: Single variable total (out of 5)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **pid** | **ca-bubble** | **ca-grid** | **vsup-bubble** | **vsup-grid** |
| 1 | 4 | 3 | 2 | 3 |
| 2 | 5 | 3 | 4 | 3 |
| 3 | 4 | 4 | 3 | 3 |
| 4 | 5 | 5 | 5 | 3 |
| 5 | 5 | 4 | 4 | 3 |
| 6 | 4 | 2 | 5 | 2 |
| 7 | 4 | 3 | 3 | 2 |
| 8 | 5 | 3 | 4 | 1 |
| 9 | 3 | 5 | 2 | 3 |
| 10 | 3 | 4 | 3 | 2 |
| 11 | 5 | 5 | 4 | 4 |
| 12 | 4 | 4 | 3 | 3 |
| 13 | 2 | 3 | 4 | 2 |
| 14 | 4 | 3 | 3 | 2 |
| 15 | 4 | 4 | 4 | 5 |
| 16 | 4 | 3 | 4 | 3 |
| 17 | 5 | 3 | 4 | 4 |
| 18 | 4 | 3 | 2 | 3 |
| 19 | 5 | 5 | 4 | 4 |
| 20 | 2 | 4 | 3 | 3 |
| 21 | 4 | 4 | 2 | 3 |
| 22 | 2 | 2 | 2 | 3 |
| 23 | 5 | 4 | 5 | 4 |
| 24 | 4 | 4 | 3 | 3 |
| 25 | 5 | 5 | 4 | 3 |
| 26 | 3 | 3 | 3 | 3 |
| 27 | 4 | 3 | 4 | 3 |
| 28 | 5 | 4 | 4 | 3 |
| 29 | 2 | 2 | 2 | 3 |
| 30 | 4 | 4 | 4 | 3 |
| 31 | 5 | 3 | 5 | 4 |
| 32 | 3 | 2 | 4 | 2 |
| **Avg** | 4 | 3.5 | 3.5 | 3 |

**Study Results of four components: Double variables (out of 3)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **pid** | **ca-bubble** | **ca-grid** | **vsup-bubble** | **vsup-grid** |
| 1 | 2 | 1 | 2 | 2 |
| 2 | 2 | 2 | 1 | 3 |
| 3 | 3 | 3 | 2 | 2 |
| 4 | 3 | 1 | 3 | 2 |
| 5 | 2 | 1 | 1 | 3 |
| 6 | 2 | 3 | 2 | 3 |
| 7 | 1 | 0 | 1 | 1 |
| 8 | 2 | 2 | 3 | 3 |
| 9 | 3 | 3 | 3 | 2 |
| 10 | 1 | 1 | 1 | 3 |
| 11 | 3 | 1 | 3 | 3 |
| 12 | 2 | 3 | 2 | 1 |
| 13 | 1 | 1 | 1 | 2 |
| 14 | 3 | 2 | 1 | 2 |
| 15 | 2 | 2 | 3 | 1 |
| 16 | 2 | 1 | 3 | 2 |
| 17 | 3 | 3 | 3 | 3 |
| 18 | 2 | 1 | 1 | 2 |
| 19 | 2 | 3 | 2 | 3 |
| 20 | 3 | 3 | 2 | 2 |
| 21 | 2 | 3 | 3 | 3 |
| 22 | 3 | 2 | 2 | 0 |
| 23 | 3 | 3 | 3 | 3 |
| 24 | 3 | 3 | 3 | 3 |
| 25 | 2 | 2 | 3 | 3 |
| 26 | 2 | 2 | 3 | 1 |
| 27 | 2 | 2 | 1 | 2 |
| 28 | 3 | 2 | 3 | 1 |
| 29 | 3 | 2 | 1 | 3 |
| 30 | 3 | 2 | 3 | 3 |
| 31 | 3 | 3 | 2 | 3 |
| 32 | 1 | 3 | 2 | 1 |
| **Avg** | 2.3 | 2.1 | 2.2 | 2.2 |

**Study results of four components (all questions, out of 8):**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **pid** | **ca-bubble** | **ca-grid** | **vsup-bubble** | **vsup-grid** |
| 1 | 6 | 4 | 4 | 5 |
| 2 | 7 | 5 | 5 | 6 |
| 3 | 7 | 7 | 5 | 5 |
| 4 | 8 | 6 | 8 | 5 |
| 5 | 7 | 5 | 5 | 6 |
| 6 | 6 | 5 | 7 | 5 |
| 7 | 5 | 3 | 4 | 3 |
| 8 | 7 | 5 | 7 | 4 |
| 9 | 6 | 8 | 5 | 5 |
| 10 | 4 | 5 | 4 | 5 |
| 11 | 8 | 6 | 7 | 7 |
| 12 | 6 | 7 | 5 | 4 |
| 13 | 3 | 4 | 5 | 4 |
| 14 | 7 | 5 | 4 | 4 |
| 15 | 6 | 6 | 7 | 6 |
| 16 | 6 | 4 | 7 | 5 |
| 17 | 8 | 6 | 7 | 7 |
| 18 | 6 | 4 | 3 | 5 |
| 19 | 7 | 8 | 6 | 7 |
| 20 | 5 | 7 | 5 | 5 |
| 21 | 6 | 7 | 5 | 6 |
| 22 | 5 | 4 | 4 | 3 |
| 23 | 8 | 7 | 8 | 7 |
| 24 | 7 | 7 | 6 | 6 |
| 25 | 7 | 7 | 7 | 6 |
| 26 | 5 | 5 | 6 | 4 |
| 27 | 6 | 5 | 5 | 5 |
| 28 | 8 | 6 | 7 | 4 |
| 29 | 5 | 4 | 3 | 6 |
| 30 | 7 | 6 | 7 | 6 |
| 31 | 8 | 6 | 7 | 7 |
| 32 | 4 | 5 | 6 | 3 |
| **Avg** | 6.3 | 5.6 | 5.7 | 5.2 |

**Study Results: ca vs vsup (averaged from four components)**

|  |  |  |
| --- | --- | --- |
| **pid** | **ca** | **vsup** |
| 1 | 5.0 | 4.5 |
| 2 | 6.0 | 5.5 |
| 3 | 7.0 | 5.0 |
| 4 | 7.0 | 6.5 |
| 5 | 6.0 | 5.5 |
| 6 | 5.5 | 6.0 |
| 7 | 4.0 | 3.5 |
| 8 | 6.0 | 5.5 |
| 9 | 7.0 | 5.0 |
| 10 | 4.5 | 4.5 |
| 11 | 7.0 | 7.0 |
| 12 | 6.5 | 4.5 |
| 13 | 3.5 | 4.5 |
| 14 | 6.0 | 4.0 |
| 15 | 6.0 | 6.5 |
| 16 | 5.0 | 6.0 |
| 17 | 7.0 | 7.0 |
| 18 | 5.0 | 4.0 |
| 19 | 7.5 | 6.5 |
| 20 | 6.0 | 5.0 |
| 21 | 6.5 | 5.5 |
| 22 | 4.5 | 3.5 |
| 23 | 7.5 | 7.5 |
| 24 | 7.0 | 6.0 |
| 25 | 7.0 | 6.5 |
| 26 | 5.0 | 5.0 |
| 27 | 5.5 | 5.0 |
| 28 | 7.0 | 5.5 |
| 29 | 4.5 | 4.5 |
| 30 | 6.5 | 6.5 |
| 31 | 7.0 | 7.0 |
| 32 | 4.5 | 4.5 |
| **Avg** | 5.9 | 5.5 |

**SUS Questions:**

A picture containing text

Description automatically generated

**CA Results (SUS):**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Participant # | Q#1 | Q#2 | Q#3 | Q#4 | Q#5 | Q#6 | Q#7 | Q#8 | Q#9 | Q#10 |
| 1 | 4 | 1 | 5 | 2 | 5 | 2 | 5 | 1 | 5 | 2 |
| 2 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 |
| 3 | 3 | 4 | 5 | 4 | 4 | 4 | 2 | 4 | 5 | 3 |
| 4 | 5 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 1 |
| 5 | 4 | 2 | 4 | 2 | 5 | 2 | 5 | 1 | 5 | 2 |
| 6 | 5 | 1 | 5 | 1 | 5 | 1 | 5 | 1 | 5 | 1 |
| 7 | 3 | 3 | 4 | 3 | 5 | 4 | 4 | 4 | 4 | 4 |
| 8 | 2 | 4 | 2 | 4 | 3 | 2 | 2 | 4 | 3 | 4 |
| 9 | 3 | 4 | 4 | 4 | 4 | 3 | 5 | 3 | 4 | 2 |
| 10 | 5 | 1 | 5 | 5 | 5 | 5 | 5 | 1 | 5 | 5 |
| 11 | 4 | 3 | 4 | 5 | 4 | 5 | 4 | 3 | 4 | 4 |
| 12 | 3 | 5 | 4 | 2 | 2 | 4 | 2 | 3 | 5 | 5 |
| 13 | 3 | 2 | 3 | 4 | 4 | 3 | 4 | 3 | 4 | 5 |
| 14 | 5 | 1 | 4 | 1 | 4 | 1 | 5 | 1 | 5 | 2 |
| 15 | 4 | 3 | 2 | 2 | 2 | 4 | 5 | 2 | 4 | 2 |
| 16 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 17 | 2 | 2 | 4 | 4 | 3 | 4 | 2 | 4 | 4 | 3 |
| 18 | 5 | 2 | 4 | 5 | 3 | 5 | 4 | 5 | 5 | 4 |
| 19 | 5 | 1 | 5 | 3 | 5 | 1 | 5 | 1 | 5 | 1 |
| 20 | 2 | 2 | 4 | 3 | 4 | 3 | 4 | 5 | 5 | 4 |
| 21 | 4 | 2 | 4 | 4 | 3 | 4 | 3 | 2 | 4 | 2 |
| 22 | 4 | 2 | 5 | 4 | 5 | 2 | 5 | 2 | 5 | 3 |
| 23 | 2 | 3 | 3 | 4 | 5 | 5 | 4 | 3 | 4 | 2 |
| 24 | 2 | 4 | 2 | 3 | 4 | 4 | 2 | 4 | 3 | 2 |
| 25 | 5 | 1 | 5 | 5 | 5 | 1 | 5 | 1 | 4 | 5 |
| 26 | 4 | 2 | 4 | 2 | 4 | 3 | 4 | 4 | 3 | 4 |
| 27 | 4 | 3 | 2 | 4 | 4 | 4 | 5 | 5 | 2 | 4 |
| 28 | 4 | 4 | 5 | 2 | 5 | 4 | 3 | 3 | 3 | 3 |
| 29 | 2 | 4 | 3 | 4 | 4 | 2 | 4 | 1 | 2 | 5 |
| 30 | 4 | 4 | 1 | 5 | 3 | 2 | 5 | 5 | 5 | 3 |
| 31 | 4 | 2 | 5 | 2 | 5 | 4 | 4 | 5 | 5 | 2 |
| 32 | 4 | 3 | 3 | 2 | 4 | 1 | 1 | 2 | 3 | 5 |
| **Avg** | 3.7 | 2.7 | 3.8 | 3.3 | 4.1 | 3.1 | 3.9 | 3 | 4.1 | 3.2 |

**VSUP Results (SUS):**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Participant # | Q#1 | Q#2 | Q#3 | Q#4 | Q#5 | Q#6 | Q#7 | Q#8 | Q#9 | Q#10 |
| 1 | 3 | 2 | 2 | 2 | 5 | 4 | 3 | 4 | 2 | 4 |
| 2 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 |
| 3 | 5 | 1 | 3 | 2 | 4 | 1 | 4 | 2 | 2 | 3 |
| 4 | 4 | 2 | 4 | 2 | 2 | 2 | 4 | 1 | 2 | 1 |
| 5 | 4 | 2 | 4 | 2 | 5 | 1 | 2 | 1 | 5 | 2 |
| 6 | 5 | 1 | 5 | 1 | 5 | 2 | 4 | 2 | 5 | 1 |
| 7 | 4 | 3 | 4 | 5 | 4 | 5 | 4 | 4 | 5 | 4 |
| 8 | 5 | 2 | 5 | 2 | 5 | 2 | 5 | 2 | 5 | 1 |
| 9 | 4 | 4 | 3 | 4 | 4 | 3 | 5 | 3 | 2 | 4 |
| 10 | 5 | 5 | 1 | 5 | 5 | 5 | 5 | 1 | 5 | 5 |
| 11 | 5 | 4 | 5 | 5 | 4 | 4 | 5 | 3 | 5 | 5 |
| 12 | 4 | 2 | 3 | 2 | 4 | 2 | 4 | 2 | 4 | 2 |
| 13 | 2 | 3 | 3 | 2 | 4 | 2 | 4 | 3 | 5 | 5 |
| 14 | 3 | 4 | 2 | 4 | 3 | 2 | 4 | 2 | 3 | 3 |
| 15 | 2 | 2 | 5 | 4 | 4 | 4 | 1 | 5 | 5 | 2 |
| 16 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 3 | 5 |
| 17 | 4 | 1 | 2 | 1 | 4 | 5 | 5 | 1 | 5 | 5 |
| 18 | 3 | 5 | 4 | 4 | 5 | 5 | 4 | 5 | 5 | 5 |
| 19 | 5 | 2 | 5 | 3 | 5 | 1 | 5 | 1 | 5 | 1 |
| 20 | 4 | 4 | 1 | 2 | 4 | 3 | 2 | 2 | 4 | 2 |
| 21 | 2 | 1 | 5 | 5 | 5 | 5 | 4 | 3 | 5 | 4 |
| 22 | 2 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 |
| 23 | 1 | 2 | 1 | 3 | 5 | 2 | 3 | 4 | 3 | 1 |
| 24 | 4 | 2 | 4 | 1 | 4 | 2 | 4 | 2 | 5 | 2 |
| 25 | 2 | 3 | 5 | 5 | 5 | 1 | 5 | 1 | 4 | 5 |
| 26 | 5 | 4 | 5 | 4 | 5 | 3 | 4 | 3 | 4 | 4 |
| 27 | 4 | 2 | 3 | 3 | 5 | 3 | 4 | 5 | 2 | 5 |
| 28 | 5 | 3 | 4 | 3 | 4 | 4 | 5 | 2 | 4 | 5 |
| 29 | 4 | 4 | 4 | 3 | 5 | 3 | 2 | 3 | 3 | 5 |
| 30 | 4 | 3 | 5 | 1 | 4 | 3 | 4 | 1 | 3 | 4 |
| 31 | 1 | 2 | 4 | 5 | 4 | 2 | 3 | 2 | 3 | 4 |
| 32 | 5 | 1 | 5 | 4 | 5 | 1 | 1 | 2 | 3 | 5 |
| **Avg** | 3.7 | 2.8 | 3.7 | 3.1 | 4.3 | 2.9 | 3.8 | 2.6 | 3.8 | 3.5 |

**Nasa-Tlx Questions:**

Timeline

Description automatically generated with medium confidence

**CA Results (NASA-TLX):**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Participant #** | **Q#1** | **Q#2** | **Q#3** | **Q#4** | **Q#5** | **Q#6** |
| 1 | 3 | 2 | 1 | 4 | 8 | 3 |
| 2 | 13 | 9 | 9 | 12 | 14 | 14 |
| 3 | 19 | 1 | 18 | 4 | 17 | 17 |
| 4 | 17 | 0 | 13 | 16 | 15 | 1 |
| 5 | 11 | 1 | 3 | 20 | 3 | 3 |
| 6 | 19 | 10 | 15 | 17 | 13 | 6 |
| 7 | 16 | 15 | 18 | 18 | 17 | 19 |
| 8 | 16 | 13 | 6 | 8 | 17 | 14 |
| 9 | 16 | 6 | 12 | 19 | 16 | 6 |
| 10 | 21 | 21 | 0 | 21 | 21 | 21 |
| 11 | 16 | 3 | 10 | 18 | 15 | 5 |
| 12 | 17 | 11 | 12 | 7 | 10 | 11 |
| 13 | 11 | 14 | 11 | 12 | 7 | 6 |
| 14 | 4 | 2 | 4 | 18 | 3 | 1 |
| 15 | 4 | 7 | 18 | 17 | 19 | 16 |
| 16 | 21 | 21 | 21 | 21 | 21 | 21 |
| 17 | 15 | 4 | 15 | 5 | 14 | 3 |
| 18 | 20 | 21 | 20 | 21 | 21 | 20 |
| 19 | 19 | 0 | 1 | 20 | 1 | 0 |
| 20 | 10 | 7 | 11 | 12 | 16 | 7 |
| 21 | 9 | 18 | 2 | 16 | 13 | 18 |
| 22 | 11 | 8 | 7 | 14 | 16 | 10 |
| 23 | 17 | 5 | 12 | 6 | 19 | 16 |
| 24 | 10 | 4 | 5 | 10 | 11 | 2 |
| 25 | 19 | 11 | 11 | 10 | 4 | 3 |
| 26 | 11 | 11 | 12 | 12 | 12 | 9 |
| 27 | 17 | 0 | 1 | 19 | 17 | 17 |
| 28 | 16 | 7 | 17 | 15 | 15 | 14 |
| 29 | 12 | 7 | 8 | 12 | 6 | 1 |
| 30 | 4 | 5 | 13 | 7 | 10 | 11 |
| 31 | 15 | 18 | 15 | 14 | 9 | 17 |
| 32 | 20 | 3 | 13 | 13 | 5 | 8 |
| **Avg** | 14 | 8.3 | 10.4 | 13.7 | 12.7 | 10 |

**VSUP Results (NASA-TLX):**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Participant #** | **Q#1** | **Q#2** | **Q#3** | **Q#4** | **Q#5** | **Q#6** |
| 1 | 19 | 18 | 19 | 17 | 10 | 18 |
| 2 | 13 | 9 | 9 | 12 | 14 | 15 |
| 3 | 3 | 1 | 3 | 16 | 17 | 4 |
| 4 | 1 | 0 | 6 | 11 | 8 | 1 |
| 5 | 11 | 1 | 3 | 20 | 3 | 3 |
| 6 | 20 | 10 | 15 | 18 | 14 | 5 |
| 7 | 13 | 17 | 9 | 18 | 19 | 7 |
| 8 | 4 | 3 | 16 | 18 | 5 | 6 |
| 9 | 20 | 8 | 14 | 17 | 19 | 7 |
| 10 | 0 | 0 | 0 | 21 | 21 | 21 |
| 11 | 14 | 2 | 9 | 20 | 18 | 2 |
| 12 | 13 | 11 | 13 | 12 | 15 | 8 |
| 13 | 13 | 14 | 10 | 12 | 7 | 2 |
| 14 | 12 | 6 | 7 | 10 | 9 | 8 |
| 15 | 17 | 13 | 2 | 13 | 17 | 5 |
| 16 | 21 | 21 | 21 | 21 | 21 | 21 |
| 17 | 14 | 20 | 21 | 19 | 20 | 8 |
| 18 | 20 | 21 | 20 | 21 | 21 | 20 |
| 19 | 19 | 0 | 1 | 20 | 0 | 0 |
| 20 | 1 | 1 | 3 | 18 | 6 | 3 |
| 21 | 4 | 6 | 17 | 20 | 19 | 13 |
| 22 | 14 | 8 | 10 | 9 | 10 | 15 |
| 23 | 19 | 6 | 10 | 14 | 21 | 20 |
| 24 | 1 | 1 | 2 | 17 | 1 | 1 |
| 25 | 19 | 11 | 11 | 10 | 4 | 3 |
| 26 | 10 | 11 | 12 | 13 | 14 | 8 |
| 27 | 15 | 0 | 1 | 19 | 15 | 19 |
| 28 | 19 | 1 | 20 | 20 | 20 | 20 |
| 29 | 19 | 11 | 6 | 9 | 8 | 6 |
| 30 | 17 | 15 | 18 | 21 | 21 | 10 |
| 31 | 4 | 8 | 9 | 19 | 4 | 8 |
| 32 | 18 | 2 | 15 | 16 | 5 | 4 |
| **Avg** | 12.7 | 8 | 10.4 | 16.3 | 12.7 | 9.1 |

**Time in minutes: Single variable-single answer (3 questions)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| pid | ca-bubble | ca-grid | vsup-bubble | vsup-grid |
| 1 | 1.3 | 1 | 0.9 | 1.2 |
| 2 | 0.6 | 1.1 | 1.6 | 1.3 |
| 3 | 1.3 | 1.1 | 1 | 1.4 |
| 4 | 1.3 | 1.3 | 0.9 | 1.4 |
| 5 | 1 | 1.1 | 0.5 | 1 |
| 6 | 0.3 | 1.5 | 1.1 | 0.6 |
| 7 | 0.5 | 0.8 | 3.3 | 1 |
| 8 | 1.5 | 0.5 | 0.7 | 1.3 |
| 9 | 1.2 | 0.9 | 1.3 | 1.7 |
| 10 | 1.2 | 1.3 | 2 | 1.4 |
| 11 | 0.9 | 1.2 | 1.5 | 1.8 |
| 12 | 1.4 | 0.9 | 0.5 | 2.2 |
| 13 | 1.2 | 1 | 0.8 | 0.8 |
| 14 | 0.3 | 1.6 | 0.7 | 1.3 |
| 15 | 0.8 | 1.1 | 1.8 | 0.6 |
| 16 | 0.9 | 0.6 | 0.6 | 1.1 |
| 17 | 1.5 | 1.5 | 1.5 | 1.3 |
| 18 | 0.4 | 1.4 | 0.5 | 0.3 |
| 19 | 1.4 | 1.2 | 1.8 | 0.7 |
| 20 | 0.2 | 1.6 | 2.3 | 0.5 |
| 21 | 1 | 0.9 | 0.6 | 1.9 |
| 22 | 0.6 | 1.9 | 0.9 | 0.4 |
| 23 | 1.3 | 1.1 | 1.4 | 1.4 |
| 24 | 0.9 | 0.8 | 1.1 | 1.4 |
| 25 | 1.2 | 1.1 | 1.9 | 1.6 |
| 26 | 0.5 | 1.5 | 0.5 | 0.6 |
| 27 | 0.8 | 0.8 | 1.9 | 1.1 |
| 28 | 1 | 1.6 | 1.1 | 2.1 |
| 29 | 0.7 | 0.3 | 0.4 | 0.8 |
| 30 | 1.2 | 1.2 | 1 | 1.7 |
| 31 | 1 | 1.1 | 1.7 | 1.4 |
| 32 | 0.8 | 1 | 1.3 | 1.4 |
| **Avg** | 0.9 | 1.1 | 1.2 | 1.2 |

**Time in minutes: Single variable-all answers (2 questions)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| pid | ca-bubble | ca-grid | vsup-bubble | vsup-grid |
| 1 | 1.5 | 1.3 | 1.7 | 1.8 |
| 2 | 1.6 | 1.5 | 1 | 1.1 |
| 3 | 1.7 | 1.6 | 1.3 | 1.6 |
| 4 | 2 | 2.2 | 2.1 | 2.4 |
| 5 | 1.4 | 1.1 | 0.8 | 1.3 |
| 6 | 0.4 | 1.4 | 0.4 | 0.4 |
| 7 | 0.6 | 0.9 | 1.1 | 0.5 |
| 8 | 1 | 0.6 | 0.5 | 0.3 |
| 9 | 1.7 | 2.9 | 2.2 | 2.6 |
| 10 | 1.6 | 2.9 | 1.4 | 1.4 |
| 11 | 1.6 | 1.8 | 2.6 | 1.4 |
| 12 | 1.1 | 0.4 | 0.5 | 1.8 |
| 13 | 1.6 | 0.9 | 1.5 | 2.3 |
| 14 | 0.2 | 0.4 | 0.4 | 2.4 |
| 15 | 0.8 | 0.7 | 1.9 | 0.8 |
| 16 | 1.1 | 0.4 | 1.6 | 1.2 |
| 17 | 2.3 | 2 | 2.9 | 2.4 |
| 18 | 0.5 | 1.3 | 0.6 | 0.3 |
| 19 | 2.3 | 2 | 4.6 | 1.2 |
| 20 | 0.4 | 2.1 | 0.5 | 0.6 |
| 21 | 1.3 | 0.9 | 1.2 | 1.4 |
| 22 | 0.5 | 1.5 | 1.1 | 0.4 |
| 23 | 2.5 | 1.9 | 2.8 | 2.9 |
| 24 | 0.9 | 0.8 | 0.5 | 1.7 |
| 25 | 2.8 | 2.4 | 3.9 | 3.3 |
| 26 | 0.6 | 0.8 | 0.8 | 1 |
| 27 | 1.4 | 1.4 | 2.5 | 1.6 |
| 28 | 1.6 | 2.4 | 3.1 | 3.5 |
| 29 | 1.1 | 0.6 | 0.3 | 0.4 |
| 30 | 1.5 | 1.7 | 2.6 | 2.9 |
| 31 | 1.4 | 2.6 | 1.5 | 1.6 |
| 32 | 1.4 | 1.4 | 0.8 | 1.4 |
| **Avg** | 1.3 | 1.5 | 1.6 | 1.6 |

**Time in minutes: Double variable (3 questions)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| pid | ca-bubble | ca-grid | vsup-bubble | vsup-grid |
| 1 | 2.8 | 2.2 | 1.7 | 3 |
| 2 | 1.5 | 2.1 | 2.5 | 1.7 |
| 3 | 1.1 | 1.5 | 2.4 | 1.8 |
| 4 | 1.9 | 2.2 | 2 | 2.2 |
| 5 | 1.7 | 1.5 | 1.5 | 1.6 |
| 6 | 1 | 1.3 | 1.3 | 1.3 |
| 7 | 0.4 | 1.6 | 1.8 | 1 |
| 8 | 2.3 | 1.4 | 2.3 | 1.4 |
| 9 | 2 | 1.9 | 1.2 | 2.2 |
| 10 | 1.8 | 2.3 | 1.9 | 1 |
| 11 | 1.8 | 2.7 | 2.1 | 2.3 |
| 12 | 1.4 | 1.3 | 1.6 | 2.9 |
| 13 | 4 | 2.5 | 1.9 | 2.7 |
| 14 | 0.8 | 1.1 | 0.8 | 1.7 |
| 15 | 1.5 | 3.4 | 3.8 | 2.5 |
| 16 | 1.9 | 1.9 | 1.5 | 5.4 |
| 17 | 1.8 | 1.7 | 2.3 | 2.3 |
| 18 | 0.9 | 0.7 | 0.8 | 0.7 |
| 19 | 4.1 | 2.9 | 2.3 | 2.9 |
| 20 | 1.7 | 1.8 | 1.5 | 1.5 |
| 21 | 2.4 | 1.9 | 2.5 | 2.9 |
| 22 | 1.4 | 2.8 | 1.3 | 1 |
| 23 | 2.2 | 1.8 | 2.3 | 2.8 |
| 24 | 2.6 | 2.7 | 2.3 | 2.3 |
| 25 | 2.1 | 1.9 | 3 | 2.7 |
| 26 | 1.4 | 1.3 | 1.2 | 1.4 |
| 27 | 1.6 | 1.9 | 1.8 | 1.2 |
| 28 | 2 | 2 | 2 | 2.8 |
| 29 | 1.3 | 0.7 | 1 | 1.1 |
| 30 | 2.1 | 2.1 | 2.1 | 2.7 |
| 31 | 2 | 2.5 | 2 | 2.7 |
| 32 | 3.5 | 2 | 3.2 | 2.8 |
| **Avg** | 1.9 | 1.9 | 1.9 | 2.1 |

**Total time in minutes: All 8 questions**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| pid | ca-bubble | ca-grid | vsup-bubble | vsup-grid |
| 1 | 5.6 | 4.5 | 4.3 | 6 |
| 2 | 3.7 | 4.7 | 5.1 | 4 |
| 3 | 4.1 | 4.2 | 4.7 | 4.8 |
| 4 | 5.2 | 5.8 | 5 | 6 |
| 5 | 4.2 | 3.7 | 2.8 | 4 |
| 6 | 1.6 | 4.2 | 2.8 | 2.3 |
| 7 | 1.6 | 3.3 | 6.1 | 2.4 |
| 8 | 4.8 | 2.5 | 3.4 | 3 |
| 9 | 4.9 | 5.7 | 4.7 | 6.5 |
| 10 | 4.5 | 6.5 | 5.4 | 3.8 |
| 11 | 4.2 | 5.7 | 6.2 | 5.5 |
| 12 | 3.9 | 2.6 | 2.6 | 7 |
| 13 | 6.8 | 4.3 | 4.2 | 5.9 |
| 14 | 1.3 | 3.1 | 1.8 | 5.4 |
| 15 | 3.2 | 5.1 | 7.6 | 3.9 |
| 16 | 3.9 | 2.9 | 3.7 | 7.7 |
| 17 | 5.6 | 5.2 | 6.6 | 6 |
| 18 | 1.8 | 3.4 | 2 | 1.4 |
| 19 | 7.8 | 6.1 | 8.7 | 4.8 |
| 20 | 2.3 | 5.6 | 4.3 | 2.7 |
| 21 | 4.7 | 3.7 | 4.3 | 6.2 |
| 22 | 2.5 | 6.2 | 3.3 | 1.9 |
| 23 | 5.9 | 4.8 | 6.5 | 7.1 |
| 24 | 4.4 | 4.4 | 3.8 | 5.3 |
| 25 | 6 | 5.5 | 8.8 | 7.5 |
| 26 | 2.5 | 3.5 | 2.4 | 3 |
| 27 | 3.8 | 4.1 | 6.1 | 3.9 |
| 28 | 4.5 | 6 | 6.3 | 8.3 |
| 29 | 3 | 1.6 | 1.7 | 2.3 |
| 30 | 4.8 | 5 | 5.7 | 7.3 |
| 31 | 4.3 | 6.2 | 5.1 | 5.7 |
| 32 | 5.7 | 4.4 | 5.4 | 5.7 |
| **Avg** | 4.1 | 4.5 | 4.7 | 4.9 |