

# HCI Class Test 2023

Total points 19/30 ?

Final Exam

Email \*

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✓ HMD stands for?

1/1

- ☒ Head Mounted Display
- ☐ Head Masked Display
- ☐ Head Made Display
- ☐ Head Mounted Detection

✓

✓ If distance from eye to target is D and target size is S, which is the correct expression of visual angle 2/2

- ☒  $2 \arctan(S/2D)$
- ☐  $2 \arctan(D/2s)$
- ☐  $2 \arcsin(S/2D)$
- ☐  $2 \arctan(SD)$

✓



✗ What type of eye tracker will you prefer for accurately analyzing eye gaze in a smartphone. 0/1

- ☒ Screen mounted infra red based eye tracker
- ☐ Wearable eye tracking glasses
- ☐ Webcam based eye tracker
- ☐ All of the above

✗

Correct answer

- ☒ Wearable eye tracking glasses

✗ What is disadvantage of GOMS model

0/1

- ☒ Cannot predict task completion time
- ☐ Requires detailed parameter tuning
- ☐ Only model error free performance
- ☐ All of the above

✗

Correct answer

- ☒ Only model error free performance



✗ Which statement is true about Fitts' Law

0/1

- ☐ Predicts target width from movement
- ☐ Predicts movement time from target width and distance
- ☐ Predicts length of target from movement time
- ☒ All of the above



Correct answer

- ☒ Predicts movement time from target width and distance

✓ NASA TLX estimates

1/1

- ☒ Cognitive load
- ☐ Task completion time
- ☐ Number of errors
- ☐ All of the above



✓ Find Index of Performance for the following Fitts' Law study results in bits/sec. Link to data <https://tinyurl.com/2p8ht4tf>

5/5

Width	Distance	Movement Time (in msec)
45	80	2442
45	160	3265
45	240	2745
45	325	2998
55	80	2398
55	160	2750
55	240	2759
55	325	1899
65	80	1950
65	160	1603
65	240	2409
65	325	2885
75	80	2387
75	160	1830
75	240	1977
75	325	2027

- ☐ 0.02
- ☒ 0.87
- ☐ 0.44
- ☐ 0.50



✓ Chunking mechanism in SOAR cognitive architecture is related to

1/1

- ☒ Learning
- ☐ Predicting task completion time
- ☐ Both
- ☐ None



✗ When users are involved in complex tasks, the demand on \_\_\_\_\_ can be significant. 0/1

- ☐ short-term memory
- ☐ shortcuts
- ☐ objects that appear on the screen
- ☒ All of the mentioned

✗

Correct answer

- ☒ short-term memory

✓ Which body part has highest tactile spatial resolution 1/1

- ☒ Finger tip
- ☐ Palm
- ☐ Hair
- ☐ Chest

✓

✓ What type of visual search is faster 1/1

- ☒ Parallel Search
- ☐ Serial Search
- ☐ Both have same speed

✓



✓ What is the range of pupil dilation when eyes are open?

1/1

- ☒ 2 to 8 mm
- ☐ 12 to 18 mm
- ☐ 1 to 5 cm
- ☐ 0.1 to 1.5 mm



✓ What is the visual angle of a 2 mm vertical line from a distance of 65 cm

1/1

- ☐  $65 \arctan(2)$
- ☒  $\arctan(0.2/65)$
- ☐  $\arcsin(2/65)$
- ☐  $\arctan(65/0.2)$



✗ Stereoscopic displays are different from non-stereoscopic ones in terms of 0/2

- ☐ Resoluton
- ☐ Refresh Rate
- ☒ Motion Blur
- ☐ Depth Perception



Correct answer

- ☒ Depth Perception



✗ Video See Through Display using a laptop can be an example of

0/1

- ☐ Augmented Reality System
- ☐ Virtual Reality System
- ☐ Mixed Reality System
- ☒ All of the Above

✗

Correct answer

- ☒ Augmented Reality System

✓ Which statement is TRUE about Cognitive Walkthrough

1/1

- ☐ Evaluates Cognitive Load
- ☐ Predicts Task Completion time
- ☒ Experts simulates user interaction from high to low frequency tasks
- ☐ Predicts visual perception

✓



✗ Which statement(s) is(are) true about heuristic evaluation

0/1

- ☐ Easy to use
- ☐ Requires multiple evaluators
- ☐ Both Options 1 and 2
- ☒ Neither Option 1 nor 2

✗

Correct answer

- ☒ Both Options 1 and 2

Your Name \*

Saladi Pravallika

✓ What is mean and median of following set of numbers  
23,12,34,56,32,12,65,12

1/1

- ☐ 30.75, 23
- ☐ 30, 56
- ☐ 32.50, 32.50
- ☒ 30.75, 27.50

✓





✗ Which one is an example of 3D display

0/2

- ☐ iPhone
- ☐ Hologram
- ☐ Vuzix AR Headset
- ☒ COTS Automotive HUD

✗

Correct answer

- ☒ Hologram

✓ A Multi-Function Display (MFD) has the following advantage over analog displays in a cockpit 1/1

- ☐ Reduces information overload
- ☐ Occupies less space
- ☒ Both of the above options
- ☐ None of the options

✓



✗ What is accommodation vergance problem in the context of AR

0/1

- ☐ Less spatial resolution
- ☒ Less temporal resolution
- ☐ Motion blurr
- ☐ Adjusting perceived depth of synthetic objects with real objects

✗

Correct answer

- ☒ Adjusting perceived depth of synthetic objects with real objects

✓ What is a correct expression of Index of Difficulty in the context of Fitts' Law

1/1

- ☒  $\text{Log}(1 + 2 \times \text{Distance} / \text{Width})$
- ☐  $\text{Log}(1 + 2 \times \text{Width} / \text{Distance})$
- ☐  $\text{Distance} / \text{Width}$
- ☐ All of the above

✓

✓ Colour Blindness can be detected using

1/1

- ☐ Amsler Grid
- ☐ Snellen Chart
- ☒ Ishihara Plates
- ☐ Pelli Robson Charts

✓



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