國立成功大學

114學年度碩士班招生考試試題

編　號：155

系　所：創意產業設計研究所

科　目：數位媒體與互動設計

日　期：0211

節　次：第 3 節

注　意：1.不可使用計算機
2.請於答案卷(卡)作答，於試題上作答，不予計分。

考生請注意：本試題不可使用計算機。請用英文於答案卷（卡）作答。用非英文（如中文）作答將斟酌扣分。於本試題紙上作答者，不予計分。Calculators are not allowed for this exam. Please answer in English on the answer sheet (or card). Answers written in languages other than English (e.g., Chinese) may result in point deductions. Responses written directly on the test paper will not be graded.

I. Smart Bus Stop (40%)

Imagine you are tasked by XYZ City to design a "smart bus stop," i.e., a non-conventional bus stop that incorporates sensors, digital displays, ICT (Information and Communication Technology), etc. They plan to install the bus stop in a heterogeneous urban area with residential housing, small business office buildings, miscellaneous stores, restaurants, etc. The bus stop is aimed to support and enhance the waiting experience for older adults (generally, people over 65 years of age).

Please propose your design for the smart bus stop without budgetary considerations.

1. Using user-centered design (UCD), please describe your design process. (15%)
2. Please use both textual and visual descriptions for your design and evaluation (e.g., how the bus stop works; how vehicles, pedestrians, and the environment interact with it; how to evaluate if or how it supports and enhances older adults' waiting experience). (25%)

II. A Virtual Calming Place (36%)

Undergraduate and graduate schoolwork can be mentally demanding. One way students can relieve stress is by going to a calming and soothing place. However, due to scheduling or spatial constraints, such places may not always be available or accessible. As a result, many designers and researchers have started exploring the use of Virtual Reality (VR) as a stress-relieving tool.

VR is a stereoscopic and immersive medium that users can interact with through bodily movements, gestures, voice, eye-tracking, or even physiological signals. In VR, users can experience a photorealistic replica of a physical space, an imaginative and fantastic new world, or a hybrid of both.

Please design a "Calming Place" VR experience for yourself.

1. What is the theme of the virtual calming place? (7%)
2. What type of VR is your design (headset, computer screen, or "CAVE" – an immersive room usually using wall projections)? (4%)
3. How does the VR experience work (content, functionality, interaction, etc.)? Please use both textual and visual description for your design (15%)
4. How do you evaluate if or how the VR calms you with stress-relieving effects? (10%)

III. Terminology (24%)

Here is a collection of important concepts in the areas of human-computer interaction (HCI), user experience (UX), and usability. These concepts are used to support, justify, and expand interaction design and media creation. They are rooted in empirical research and bridge design, computing, and cognition.

(A) Fitts' Law	(F) Flow Theory
(B) Hick's Law	(G) Miller's Law
(C) Mental Model	(H) Jakob's Law
(D) Gestalt Principles	(I) Serial Position Effect
(E) Double Diamond Model	(J) Gulf of Execution

In each question below, please provide the most appropriate concept's item code (A, B, C, D, etc.) as the answer. Please note: 1) Each question below has only ONE answer, i.e., you get the whole question wrong if you provide multiple answers for a question (even if the answers contain the one right answer); 2) It is possible that a concept might be used as the answer for more than one question. (Each question is worth 3%)

1. This suggests that decision-making time increases as the number of choices grows, explaining why simplifying webpages' menus or dropdown options enhances usability.
2. This predicts that the time required to move an object to a target (e.g., moving a mouse cursor to a button) is based on the distance to, and the size of the target. It explains why larger or closer buttons are quicker to select on webpages.
3. This describes a mental state of intense focus and immersion in a task, achieved when a user's skill level matches the difficulty level. It's often used to design engaging user experiences.
4. This suggests that users expect interfaces to function similarly to others they have used before. Hence, familiarity and consistency reduce cognitive load.
5. This cognitive bias suggests that users are more likely to recall the first and last items in a list. It influences where designers place important options in navigation menus.
6. This can explain why in Windows or Mac computers, task bars or menu bars are placed on an edge of the screen.
7. This design framework consists of 4 stages: discovering problems, defining problems, developing solutions, and delivering solution. The framework emphasizes iterative and user-centered design.
8. This concept highlights that people can usually only hold 7 (plus/minus 2) pieces of information in their working memory. Hence, it influences design decisions about menu items or chunks of interface content.