

# 國立中山大學 109 學年度 碩士暨碩士專班招生考試試題

科目名稱：科技英文【機電系碩士班戊組】

## — 作答注意事項 —

考試時間：100 分鐘

- 考試開始鈴響前不得翻閱試題，並不得書寫、劃記、作答。請先檢查答案卷（卡）之應考證號碼、桌角號碼、應試科目是否正確，如有不同立即請監試人員處理。
- 答案卷限用藍、黑色筆(含鉛筆)書寫、繪圖或標示，可攜帶橡皮擦、無色透明無文字墊板、尺規、修正液（帶）、手錶(未附計算器者)。每人每節限使用一份答案卷，不得另攜帶紙張，請衡酌作答。
- 答案卡請以 2B 鉛筆劃記，不可使用修正液（帶）塗改，未使用 2B 鉛筆、劃記太輕或污損致光學閱讀機無法辨識答案者，其後果由考生自行負擔。
- 答案卷（卡）應保持清潔完整，不得折疊、破壞或塗改應考證號碼及條碼，亦不得書寫考生姓名、應考證號碼或與答案無關之任何文字或符號。
- 可否使用計算機請依試題資訊內標註為準，如「可以」使用，廠牌、功能不拘，唯不得攜帶具有通訊、記憶或收發等功能或其他有礙試場安寧、考試公平之各類器材、物品（如鬧鈴、行動電話、電子字典等）入場。
- 試題及答案卷（卡）請務必繳回，未繳回者該科成績以零分計算。
- 試題採雙面列印，考生應注意試題頁數確實作答。
- 違規者依本校招生考試試場規則及違規處理辦法處理。

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科目名稱：科技英文【機電系碩士班戊組】

題號：438002

※本科目依簡章規定「不可以」使用計算機(問答申論題)

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1. Please read the following article and answer the question below:

Virtual Reality (VR) is a computer generated environment that can simulate physical presence in places in the real world or imagined worlds. The user wears a headset and through specialized software and sensors is immersed in 360-degree views of simulated worlds.

Augmented Reality (AR) supplements the physical environment with computer-generated sensory input such as sound, video, graphics, or other useful information, essentially overlaying digital information on top of the physical world. Some consider the popular smartphone game “Pokémon Go” a form of consumer AR: It enables gamers to find digital characters in the real world.

Mixed Reality (MR or XR) attempts to combine aspects of both VR and AR. Through merging the real and virtual worlds, new environments and visualizations are generated wherein physical and digital objects co-exist and interact in real time. The virtual objects (holograms) are anchored to points in real space, making it possible for the user to treat them as real.

Please translate the following terms into Chinese (3% for each)

- |                     |                           |
|---------------------|---------------------------|
| (A) Virtual Reality | (F) digital character     |
| (B) environment     | (G) visualization         |
| (C) immersed        | (H) co-exist              |
| (D) simulated       | (I) anchor                |
| (E) physical world  | (J) interact in real time |

2. Translate the following two sentences into Chinese: (10% for each)

- (A) Mobile robots can examine cables and pipes underwater, snake through small pipes and sewers, fly along electricity transmission lines, and look for small defects in wind-turbine blades high off the ground—among other things.
- (B) With a drone, everything is recorded, time-stamped and geo-referenced, and that information is there as part of a permanent record of that facility.

3. Read the following article and fill in the correct “preposition” (介係詞) (3% for each)

In 2017, the New York investment firm Lazard released an analysis of grid-scale energy storage technologies, based (A) their levelized costs, which includes both capital and operational costs. Lazard focused on a subset of commercially available technologies capable (B) being deployed (C) a variety of settings, ruling out pumped hydroelectric and compressed air storage due (D) their dependence on specific geologies.

The analysis looked (E) peaker replacement with lithium-ion batteries as well as flow batteries, where charged electrolyte is stored in tanks. For grid-scale peaker replacement applications, Lazard found no technology to be a clear winner. Lithium-ion batteries had a levelized cost of storage of between \$282 and \$347 per MWh, with costs expected to decrease (F) around \$268 pr MWh (G) the end of this year. Flow batteries, both those using vanadium chemistry and those employing zinc, had a wider range of levelized costs—(H) \$209 to \$413 per MWh in replacing peak generation—which is a function (I) the lower degree of commercialization (J) the technology.

Lazard expects the cost of lithium-ion batteries to continue to drop by as much as 10 percent annually over the next five years.

4. Translate the following two sentences into English: (10% for each)

- (A) 微機電系統的發展源自於半導體製程技術，可以透過大量製造程序降低生產成本並提高元件性能。
- (B) 智能醫學就是將人工智慧用於醫學診斷，透過深度學習技術，讓電腦「學習」醫生的醫療知識並模擬醫生的診斷推理。

試題請隨卷繳回，請留意背面是否有題