說明：＊請以電腦打字命題，勿留間隔，以節省電子製版時間及用紙。
＊為避免造成監考教師之困擾，右表為考試時附加條件限制，如有需求請確認後
　以 ∨ 註記。

需答案紙		放大至 B4 紙	
可攜帶參考資料		可攜帶字典	
可使用計算機			

應 考 班 級	科　　　　　　目 試	別 考	試 日 期	考 試 時 間	命 題 者
資工一	程式設計進階	期中考	110 年 4 月	90 分鐘	趙于翔

班級：　　　　　　隨班附讀班級：　　　　　學生姓名：　　　　　學號：

一、　**Computer Test：(100%)**　　　　　　　P.S. All the program needs to prevent exceptions.

1.　【Marquee】Design four texts on the window, the texts are displayed as east, south, west and north, and the colors are red, green, blue and black. These texts are placed in order at the right, bottom, left and top.　Please complete the following things. (30%)
   A.　Designed a left-turn button. After button pressed, the texts (including color) rotate one step counterclockwise.
   B.　Designed a right-turn button. After button pressed, the texts (including color) rotate one step clockwise.
   C.　Designed a shuffle button. After button pressed, the texts (including color) randomly replace the positions.

2.　【Polynomial】Design the input boxes on the window. Please complete the following polynomial and calculate the answer y. (30%)
   A.　$x = \square$
   $$y = -\square x^5 + \square x^2 - \square x$$
   B.　$x = \square$
   $$y = \left| \frac{-\square x - \sqrt{4x}}{\square x} \right|$$

3.　【Password Strength】Design the input boxes and confirmation button on the window. The password coding conditions are as follows. After button pressed, if the password meets the following conditions, the message dialog will pop up and show pass, otherwise show invalid. (20%)
   A.　The password length must be at least 6 characters.
   B.　At least one upper case English character.
   C.　At least one lower case English character.
   D.　At least one number.

4.　【Guess Number】Design a program randomly generates a number from 1 to 100, and displays the answer range. After the player enters the guessed number and press the button, the answer range will change according to the guessed number. Please complete the following conditions. (20%)
   A.　When the guessed number within the answer range, updates the range.
   B.　When the guessed number exceeds the answer range, shows an error message and updates the range.
   C.　When the guessed number equals to the answer, shows a correct message and the number of guesses.

5.　【Cinema Ticket】The price of movie tickets for a certain movie theater is shown as the table below. Please complete the following things. (20%)
   A.　Design a program to calculate the movie ticket price. (The movie type and ticket type are both single-choices)
   B.　Design additional food purchase program. (The food can be multi-select)

Cinema

	2D	3D	ATMOS 3D
Full Ticket	290	350	360
VIP Ticket	270	330	340
Child Ticket	230	290	300
Disabled Ticket	145	175	180

Food

Coke	Popcorn	Hot Dog	Fried Food
30	50	70	120