所	f 別:各所			
秄	十 目:英文			
作	※答注意事項:			
11	- 合工心事気・ 1.本試題共 4 <i>7</i>	L蛨・艹1百。		
	, , ,		然。归应由穷跖	다
	, ,	可不按題目次序作		<b>派。</b>
	3.	答,違者不予計分	0	
	· > Vocabulary a	nd Phrases:(20 分)	)	
	vocabalary an	id i mases (20 )	,	
Qs	s 1-5:			
1.	The police develo	oped as a mechanism	to do justice by appr	rehending offenders and
	holding them			
	(A)admirable	(B)accountable	(C)appreciable	(D)affluent
2.	Since their prima	ry practical goal was	to reduce crime	, police long
	believed that they	were in the business	of crime prevention	l.
	(A)ventilation	(B)vicinity	(C)victimization	(D)viscosity
3.	Efforts to concen	trate police enforceme	ent efforts in high-ri	sk places, commonly
	known as hot spo	t policing, have been	found to be	in controlling
	crime.			
	(A)effective	(B)edible	(C)enclose	(D)excavate
4.	Police responses	to crime problems car	n be greatly	by securing
	productive partne	rships with communi	ty members.	
	(A)emigrated	(B)enigma	(C)estate	(D)enhanced
5.	A police focus on	controlling disorder	has been hypothesiz	ed to be an important
	way to reduce mo	ore serious crimes in		
	(A)narvas	(R)neighborhoods	(C)narratives	(D)nomads

# Qs 6-10: Fill in each of the blanks with a proper word to make the statement complete. The initial and final letters of the word are given as hints.

6. The procedure for the surrender of an alleged criminal by one state to another
having <u>i</u> to try the charge is called extradition.
7. Preventive <u>d</u> <u>n</u> allows the judges to imprison anyone who they have good
reason to believe may commit a further crime.
8. If a person is convicted of robbery and sentences to eight years in prison, he or she
will be put behind <u>b</u> s and serve the jail term.
9. The study clearly demonstrates the link between child abuse and juvenile dynamics y
10. A voluntary confession is a confession that is given out of a suspect's own free will
and has not been obtained by force, coercion, or <u>i</u> <u>n</u> .
二、Translation:(30分)

### Translate the following short passages from Chinese to English or the other way around.

- 1. 舉凡酒駕的稽查取締、陳抗事件的處置因應、非法槍彈及毒品的查緝防制、跨國詐欺犯罪的打擊遏阻、乃至網路科技犯罪的偵防情蒐等,均為國人關切的治安議題。
- 2. Law enforcement agencies should establish a culture of transparency and accountability in order to build public trust and legitimacy. This will help ensure decision making is understood and in accord with stated policy.

### 三、Reading Comprehension: (20分)

#### Os 1-5:

1. When a defendant claims that the presence of blood sprinkles on his clothing is due to the fact that he has touched such clothing with bloody hands, one can immediately conclude that he is lying.

The fact upon which this conclusion is based is *most nearly* that

- (A) nothing absorbs blood.
- (B) blood does not sprinkle.
- (C) fingerprints would have been left by the defendant if he had touched the clothing.
- (D) bloody hands will not leave the described mark.

2. The large number of fatal motor-vehicle accidents renders necessary the organization of special units in the police department to cope with the technical problems encountered in such investigations.

The generalization which can be inferred *most directly* from this statement is that

- (A) large problems require specialists.
- (B) technical problems require specialists.
- (C) many police problems require special handling.
- (D) many policemen are specialists.
- 3. In examining the scene of a homicide one should not only look for the usual, standard traces fingerprints, footprints, etc. but should also have eyes open for details which at first glance may not seem to have any connection with the crime.

The *most* logical inference to be drawn from this statement is that

- (A) in general, standard traces are not important.
- (B) sometimes one should not look for footprints.
- (C) usually only the usual, standard traces are important.
- (D) one cannot tell in advance what will be important.
- 4. Officer Chang didn't eat anything but small pieces of bread and butter.

The sentence that is *closest in meaning* to the one given above is that

- (A) He ate small pieces of bread and butter but didn't like them.
- (B) He only ate some small pieces of bread and butter.
- (C) He didn't eat anything, not even the bread and butter.
- (D) He didn't touch the bread and butter, but he ate other things.
- 5. After failing a doping test at the Beijing Olympics, John Peterson was stripped of his gold medal.

The sentence that is *closest in meaning* to the one given above is that

- (A) At the Beijing Olympics, John Peterson and many others were disqualified after failing a doping test.
- (B) If John Peterson hadn't been tested positive for doping at the Beijing Olympics, he wouldn't have lost his gold medal.
- (C) Since John Peterson confessed having used doping, his gold medal was taken back.
- (D) Although John Peterson failed the doping test, he wasn't disqualified from the Beijing Olympics.

#### Qs 6-10:

Since the early 1	990s, the police have	e become much mo	ore interested in a broader
idea of prevention an	d the use of a wide ra	ange of crime prev	ention <u>6</u> . The search
for greater citizen	satisfaction, increas	ed legitimacy an	d more effective crime
prevention7 to	the traditional tactic	s used by most pol	ice departments led to the
development of prob	olem-oriented policing	ng and hot-spots J	policing. The operational
paradigms of many	modern police de	partments have s	teadily <u>8</u> from a
"professional" model	of policing to a co	ommunity-oriented	, problem-solving model.
Growing community	dissatisfaction and a	series of research s	tudies that questioned
the 9 of the pro	fessional model's bas	sic tenets served as	catalysts for the <u>10</u> .
6. (A) tension	(B) trash	(C) tactics	(D) timber
7. (A) abuses	(B) alternatives	(C) abstracts	(D) amazements
8. (A) evolved	(B) enclosed	(C) estimated	(D) eroded
9. (A) walkout	(B) effectiveness	(C) incitement	(D) turbulence
10.(A) distort	(B) assignment	(C) hostility	(D) shift

## 四、Essay:(30分)

## Write an essay on the topic: Combatting Fraud

Fraud has been one of the fastest growing crimes in recent decades. The current epidemic in fraud has been attributed to the rapid growth of the Internet and digital finance, the vast expansion of mobile phones, and the limited response of law enforcement agencies. Please describe your opinion about the strategy against fraud.

所 别:防災研究所

科 目:氣候變遷與災害

## 作答注意事項:

- 1. 本試題共4題,每題各占25分;共3頁。
- 2. 不用抄題,可不按題目次序作答,但應書寫題號。
- 3. 禁用鉛筆作答, 違者不予計分。

### 一、名詞釋義

- (一)生物累積(Bioaccumulation)
- (二)一般性汙染物(Conventional Pollutants)
- (三) 真實進步指標 (Genuine Progress Index)
- (四)京都議定書(Kyoto Protocol)
- (五)巴黎協定(Accord de Paris)
- 二、您為某縣市之消防局承辦防災相關業務的公務員,您所在局處目前 正推行防災社區的發展與營造。公所遴選的社區,其里長透過公所 承辦人員跟您表達想與某鄰近學校一同進行防災演練的意願,請問 您應以何種正式管道聯繫相關單位、NGO並傳達里民的意願給學校 管理人員,以達成此一演練任務?
- 三、圖 1 為 1989-2013 年臺灣歷史災害點位分布,請說明其最可能的災害類型為何?並分析此災害類型的空間分佈特徵為何?以及分別從減災、整備、應變、復原觀點來擬定具體因應策略。

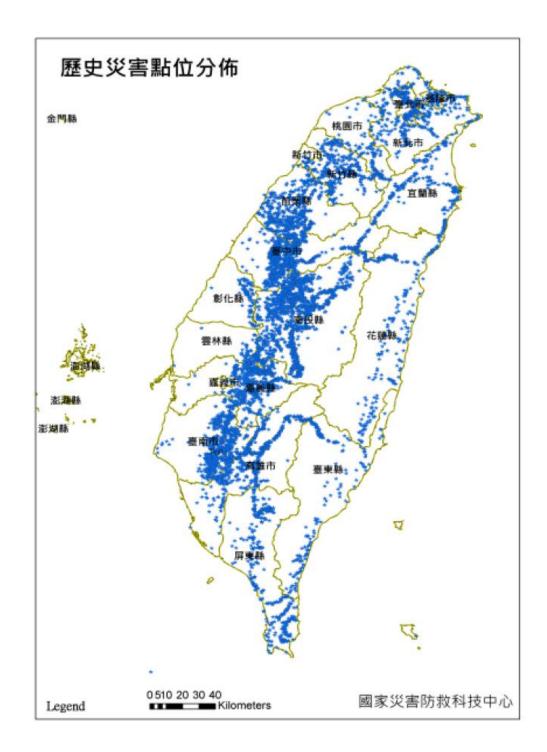


圖 1:臺灣歷史災害點位分布(1989-2013 年)(臺灣氣候變遷科學報告, 2017)

四、圖 2 為 1987 - 2012 年全臺極端降雨之年發生次數,請依據圖中資訊, 簡要說明短延時、長延時空間分佈特徵為何?並依據此空間分佈特徵, 說明其對各地區可能造成的災害衝擊為何?以及各地區該如何因應災害與調適?

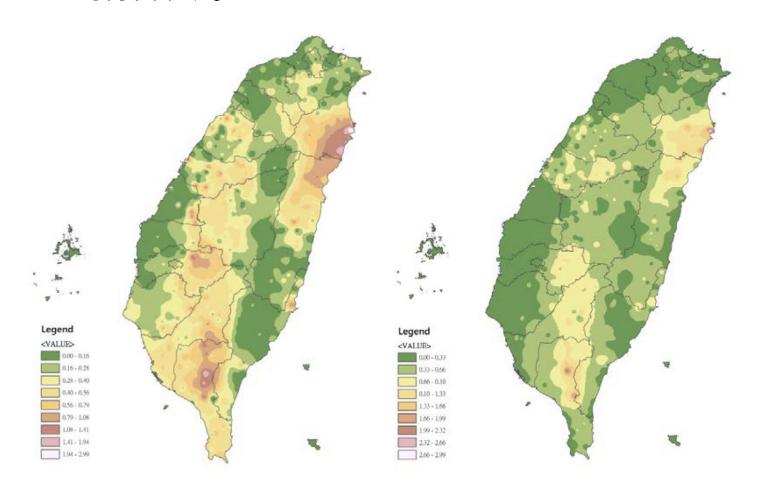


圖 2:1987-2012 年全臺極端降雨之年發生次數: (左圖) 短延時; (右 圖) 長延時(臺灣氣候變遷科學報告,2017)

所 别:防災研究所

科 目:災害分析與統計

- 1. 本試題共4題,每題各占25分;共4頁。
- 2. 不用抄題,可不按題目次序作答,但應書寫題號。
- 3. 禁用鉛筆作答, 違者不予計分。
- 一、(選擇題每題5分,均需列出算式或說明)
  - (一)假設臺北市某區某政黨的支持率為 60%,若隨機問 10 個該區居 民,剛好有 4 個支持該政黨的機率為\_\_\_\_。
    - (A) 11%
    - (B) 89%
    - (C) 16%
    - (D) 84%
  - (二)研究者從母體抽選樣本,n=250,若母體的平均為25,標準差為25,則樣本平均的期望值為\_\_\_。
    - (A) 0
    - (B) 25
    - (C)  $25/\sqrt{250}$
    - (D)  $\sqrt{25/250}$
  - (三)有關 t 分配的描述,\_\_\_\_之描述<u>有誤</u>。
    - (A)如果是小樣本,只有母體變異數未知且為常態分配下,μ 的信賴區間估計才採t分配
    - (B) t 分配曲線是以 0 為中心的對稱分配
    - (C) t 分配曲線較常態分配的分散度大
    - (D) 隨著自由度的減少, t分配曲線會越接近常態分配曲線

- (四)從兩獨立母體分別抽出  $15 \times 13$  個樣本。兩母體為常態分配,平均為  $\mu_1 \times \mu_2$ ,有相同的變異數  $\sigma^2$ 。從這些資料得到  $\mu_1 \cdot \mu_2$  的  $90\% \times 95\% \times 98\% \times 99\%$  信賴區間分別為  $(-14.01, -2.99) \times (-15.14, -1.86) \times (-16.51, -0.49) \times (-17.48, 0.48)$ 。基於上列資訊,你判斷檢定  $\mu_1 = \mu_2$  的 p 值為\_\_\_\_。
  - (A) p > 0.1
  - (B)  $0.05 \le p \le 0.10$
  - $(C) 0.02 \le p < 0.05$
  - (D)  $0.01 \le p < 0.02$
- (五)有關 ANOVA, \_\_\_\_的描述有誤。
  - (A) 若進行多個母體平均數比較,其組間差異越大,F值越大
  - (B) 當用在簡單線性迴歸時,其迴歸變異的自由度一定為1
  - (C) 當用在迴歸,其虛無假設為迴歸方程式具解釋力
  - (D) ANOVA 採F檢定

- 二、志明認為行政轄區內建築物結構耐震需補強數目與轄區內人口多寡有密切關係。假設志明運用全臺縣市資料,以人口數為自變項,建築物結構耐震需補強數目為依變項,進行簡單迴歸分析,獲得模型配適度、變異數分析表(局部的,部分數字未呈現)、迴歸係數表如下。
  - (一) 寫下此簡單迴歸模型之方程式(需包含變項、係數等內容)。
  - (二) 迴歸方程式β(斜率)是?其為0的機率為多少?
  - (三) 志明的主張為何?有哪些證據可支持(或反對) 志明的主張?
  - (四)在ANOVA表中,A、B、C、D的值各為何?

#### **Model Summary**

			<u> </u>	
Model	R	R Square	Adjusted R	Std. Error of
			Square	the Estimate
1	.931	.867	.860	5134.04591

#### **ANOVA**

	Model	Sum of Squares	df	Mean Square	F	Sig.
	Regression	3423721449.957	1	3423721449.957	129.891	.000
1	Residual	$\mathbf{A}$	В	C		
	Total	D	21			

a. Dependent Variable: 建築物結構耐震需補強數目

b. Predictors: (Constant), 縣市人口

#### Coefficients

_	Model	Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		Beta Std. Error		Beta		
1	(Constant)	-2503.405	1532.420		-1.634	.118
1	縣市人口	.011	.001	.931	11.397	.000

a. Dependent Variable: 建築物結構耐震需補強數目

三、韌性社區是本(第三)期災害防救深耕計畫推動的重點之一。在推 動社區防災工作時,專業團隊應對社區進行哪些自然環境與社會環 境分析?為何需進行這些分析? 四、發生大規模災害後,政府須提供短期避難安置(公設收容場所)服務協助受災居民。不過,地震後不久,主管單位尚不及進行詳細調查,需透過其他災情資料進行需求推估。在進行短期避難安置需求推估時,需掌握哪些資料?如何運用這些資料進行需求推估?(提示:常見的推估方法在第一階段推估離家戶數,第二階段推估前往公設收容所的人數)

所 别:防災研究所

科 目:災害管理

- 1. 本試題共4題,每題各占25分;共1頁。
- 2. 不用抄題,可不按題目次序作答,但應書寫題號。
- 3. 禁用鉛筆作答, 違者不予計分。
- 一、災害應變是災害發生後須立即啟動之災害管理循環之一。請以某山 區部落遭遇颱風豪雨土石流事件為例,說明災害應變的目的與主要 活動內容為何。
- 二、減災是災害前十分重要的管理工作之一。請說明災害發生前,為降低關鍵基礎設施的災害風險,對於關鍵基礎設施的減災措施主要應 考慮的因素有哪些?
- 三、當民眾有身陷災害險境之虞,正確且及時的災害示(預)警,不僅可說服民眾確信可能身陷危害之中,更可提醒如何正確因應以確保身家安全。試以臺灣常見的颱風為例,有效的災害示警訊息,至少應有哪些資訊(及建議)?
- 四、何謂「災害次文化(Disaster Subcultures)」?試述類似的概念,在 防災社區營造的過程中,可以發揮什麼具體的作用?

所 別:各所科 目:英文

## 作答注意事項:

- 1.本試題共4大題;共4頁。
- 2.不用抄題,可不按題目次序作答,但應書寫題號。
- 3.禁用鉛筆作答,違者不予計分。

## ─ · Vocabulary and Phrases: (20 分)

1.	Establishing the p	oint at which to	arrest someone is a	n important factor in
	determining the	of	evidence.	
	(A) admissibility	(B) interpretation	(C) condition	(D) execution
2.	If you keep backbit	ing me, I'll definitel	y sue you for	·
	(A) deception	(B) defamation	(C) exploitation	(D) persecution
3.	A	should be ordered or	prostitution.	
	(A) restitution	(B) clampdown	(C) stereotype	(D) getaway
4.	The young boy was	caught	a scooter.	
	(A) rolling back	(B) raking up	(C) ripping off	(D) ripping up
5.	The purpose of tra	affic control is two-	fold, that is, to	traffic and to
	eliminate potential	traffic conflicts.		
	(A) deter	(B) congest	(C) approach	(D) expedite
6.	Officers are instruct	ted not to act	towards citize	ens in the line of duty.
	(A) professionally	(B) courteously	(C) prudently	(D) condescendingly
7.	Many people believ	ved that the murder	suspect's actions and	his continued threat to
	public safety would	keep him	for life.	
	(A) incarcerated	(B) impounded	(C) inundated	(D) engulfed
8.	Report has it that a	senior staffer of a	leading law firm wa	s accused of
	billions of dollars in	n stock from an Ame	rican corporate clien	t.
	(A) bedazzling	(B) embezzling	(C) exerting	(D) luring

9. If you use other pe	ople's research resul	ts without mentionin	g the original authors, it
is thought to be cop	oyright	·	
(A) arraignment	(B) infrastructure	(C) infringement	(D) moratorium
10. Even after they v	vere arrested, the cr	riminals prided then	nselves on and bragged
about their advance	ced technology in A	ΓM device	es and counterfeit credit
cards.			
(A) bugging	(B) preying	(C) banning	(D) tending
二、Translation:	(30 分)		
(一)中翻英(15分	<b>}</b> )		
警察機關位於	?刑事司法體系的最	前線,不僅選擇將作	可種類型的犯罪人送入
刑事司法程序	5,而且還決定將多	少數量的犯罪人送。	入刑事司法程序,顯見
位居刑事司法	5.體系守門者角色的	重要性。	
(二)英翻中(15分	<u>~ )</u>		
		departments to deal	effectively with crime.
•		•	•
	•		artments whose primary
		ers, so society cou	ıld hold law breakers
accountable ic	or their crimes.		
三、Reading Com	prehension: (20	分)	
(一)請依下文回答	第1題至第5題:		
Police research dem	onstrated the need f	for agencies to evalu	uate the <u>1</u> of their
responses. Both quar	ntitative and 2	data should be used	as a basis for evaluation
and change. Police	departments need t	o know more abou	t what their <u>3</u> are
doing. Agencies are	e 4 to find end	ough resources for	performing crime trend
analyses; most also	do not conduct pro	per workload analys	ses to know how much
uncommitted time is	5 to their office	ers.	
1. (A) extradition	(B) effectiveness	(C) exile	(D) episode
2. (A) illegal	(B) scanning	(C) qualitative	(D) vandalism
3. (A) officers	(B) factories	(C) corporations	(D) income
4. (A) preventive	(B) struggling	(C) approaching	(D) peacemaking
5. (A) detective	(B) perspective	(C) reductive	(D) available

### (二)請依下文回答第6題至第10題:

The key to understanding organized crime is to recognize that, like corporations and other businesses, it exists for a single purpose: to make a profit in a capitalist economy. The key difference between organized crime and "legitimate" businesses is that organized crime often makes much of its profit from illicit goods and services and organized crime is prepared to use illegal means and practices, including violence, to achieve its profit-making goals. Like legal businesses, organized crime also seeks to gather and harness political power to assist in the conduct of its business. Once again, however, organized crime is prepared to pursue that goal, if necessary, through recourse to illegal methods. Actual violence is rare in organized crime activities, and is usually related to street-level activities. While violence is bad for business, the potential for violence is often enough to give organized crime networks a distinct advantage in the marketplace.

- 6. According to the passage, the author discusses
  - (A) illicit enterprise and profit-making.
  - (B) organizational strategy of a legitimate corporation.
  - (C) violent interactions among corporations.
  - (D) organizational structure of organized crime groups.
- 7. Based on the passage, which statement is correct?
  - (A) There is no difference between organized crime and legal businesses.
  - (B) Actual violence is usually used by organized crime networks to occupy market.
  - (C) Political power can help organized crime to pursue illegal profits.
  - (D) Organized crime will use political power to pursue benefits, but corporation won't.
- 8. Organized crime often makes much of its profit from
  - (A) charity.
  - (B) loan-sharking, gambling and pornography.
  - (C) big data analysis of market.
  - (D) state-run businesses.

- 9. According to the passage, which statement is incorrect?
  - (A) Making a profit is the purpose for organized crime.
  - (B) Making a profit is the purpose for legal corporation.
  - (C) Even violence is not good for business, it is still helpful to organized crime networks.
  - (D) Organized crime attempts to accumulate and use political power, by legal approaches, to assist in the conduct of its business.
- 10. The word "advantage" in the last sentence most nearly means
  - (A) handicap.
  - (B) hindrance.
  - (C) burden.
  - (D) benefit.

## 四、Essay: (30 分)

Write an essay on the following topic. The length of the essay should be <u>no less than</u> 100 words and <u>no more than 250 words</u>.

#### The Use of Police Force

The use of force is a double-edged sword for the police. Used properly, force can help bring criminals to justice. On the contrary, excessive or poor force use may lead to the criticisms of state violence or public servants' inertia. What are the keys to a reasonable and justifiable use of force? Write an essay on this issue.

所 别:防災研究所

科 目:災害分析與統計

- 1. 本試題共4題,每題各占25分;共3頁。
- 2. 不用抄題,可不按題目次序作答,但應書寫題號。
- 3. 禁用鉛筆作答, 違者不予計分。
- 一、(單選題)首先對每一小題,請選出一個正確或適當的答案;其次 就每一小題的每一問項,說明或改正之,可望酌給分。
  - (一)王教授擬進行臺灣消防人員的家庭經營狀況評估,在同樣的顯 著水準下,當樣本數增加,\_\_\_。
    - (A) 誤差將增加
    - (B) 研究所需的時間、人力、經費等成本將增加
    - (C) 母體的標準差將增加
    - (D) 樣本的標準差將減小
  - (二)有兩個研究者在民國 108 年進行年齡資料的蒐集,一個使用民國年來登錄年齡(出生年,YOB,year of birth),但另一個使用歲數(age),則有關 YOB和 age 在機率分配上的關係,\_\_\_\_ 正確。
    - (A) E (YOB) = E (age) -1991
    - (B) V (YOB) = V (age)
    - (C) SD (YOB) = SD (age) \* 108
    - (D) E (YOB) = E (age) + 108

- (三)運用變異數分析進行5個母體平均數比較時,試問\_\_\_\_正確。
  - (A) 總樣本數越多,其組間變異的自由度越大
  - (B)進行統計檢定時,若來自5個母體的樣本均超過30個, 則可運用Z檢定
  - (C) 其統計檢定之對立假設為 5 個母體的平均數,兩兩比較都不相等
  - (D) 選取 MSF/MSE (因子變異數/隨機變異數)為檢定統計 量
- (四)下列敘述中,\_\_\_\_正確。
  - (A) 信賴區間是在一個既定的信賴水準下所構成的一個區間
  - (B) 區間估計是指對樣本統計量估計出一個上下限的區間, 指出其包含樣本統計量的可靠度
  - (C) 信賴水準是指信賴區間包含樣本統計量的信心
  - (D) 信賴水準越高,區間估計的區間越小
- (五)有關簡單迴歸分析與相關分析中判定係數 R<sup>2</sup>的敘述,\_\_\_\_正 確。
  - (A) R<sup>2</sup> 等於 X, Y 的相關係數  $r_{xv}$
  - (B) R<sup>2</sup>介於-1 到1之間
  - (C) R<sup>2</sup>代表迴歸模型中 X 所能解釋的變異
  - (D) 變異數分析中 F 值越大,則 R<sup>2</sup>越小

## 二、請計算下列問題:

(一)依據某研究報告指出,臺灣家戶在決定疏散避難後,需要 100 分鐘來整理需攜帶的文件、物品,及確保家中的安全(如緊閉門窗、拔除電源等),且其疏散避難準備時間呈常態分配。春 嬌隨機抽樣屏東縣霧臺鄉 25 個家戶,發現平均疏散準備時間 為 88 分鐘,標準差為 20 分鐘。當顯著水準為 0.01 時,霧臺鄉 居民的疏散準備時間,是否比臺灣的平均來得少?(可能用到 資訊: z<sub>0.025</sub>=1.96, z<sub>0.01</sub>=2.33, t<sub>24,001</sub>=2.492, t<sub>24,0005</sub>=2.797。)(15 分) (二)設隨機變數 X 之機率函數為: (10 分)

$$f(x) = \frac{1}{6\sqrt{\pi}}e^{\frac{-(x-3)^2}{36}}$$
,  $-\infty < x < \infty$ 

隨機變數 Y 之機率函數為:

$$f(y) = \frac{1}{\sqrt{2\pi}} e^{\frac{-y^2}{2}} , -\infty < y < \infty$$

若 X, Y 互相獨立,Z = 3X + 2Y,則:

 $1 \cdot Z$  的分配特性、 $E(Z) \cdot V(Z)$  各為何?

2、E(Z<sup>2</sup>)為何?

- 三、請以「調查研究法」為基礎,試擬一份與災害分析有關的研究計畫 。在計畫中請註明研究題目、研究目的、研究發問等,並交代研究 的取樣方法、研究架構、研究步驟與研究的預期成果。
- 四、請說明以「災害分析」為主題的研究中,其量化研究與質性研究的 差別與使用的時機為何?並舉例說明。

所 别:防災研究所

科 目:災害管理

- 1. 本試題共4題,每題各占25分;共1頁。
- 2. 不用抄題,可不按題目次序作答,但應書寫題號。
- 3. 禁用鉛筆作答, 違者不予計分。
- 一、建立災害整備文化(Creating a Culture of Preparedness)是推動全民 防災的重要基石。有哪些因素可能會影響災害整備文化的型塑?
- 二、作為災害治理的專業人員,在推動相關防減災工作時,如何闡釋「以社區為取境(Whole community approach)」的災害治理模式?
- 三、事故現場指揮系統(ICS)是災害現場管理的重要工具,請說明此 一管理系統的運用可協助現場指揮官解決哪些問題?採用此系統又 可發揮哪些功能?
- 四、科技對於災害管理有不同的影響及作用,請說明地理資訊系統 (GIS) 在災害管理循環的各階段中具有的功能為何?

所 别:防災研究所

科 目:氣候變遷與災害

- 1. 本試題共4題,每題各占25分;共2頁。
- 2. 不用抄題,可不按題目次序作答,但應書寫題號。
- 3. 禁用鉛筆作答, 違者不予計分。
- 一、為減緩氣候變遷幅度,降低溫室氣體排放顯得相當重要。IPCC AR5 指出,溫室氣體排放減量應從各行業、能源供給、能源終端使用等面向著手。請就下列能源供給的技術創新與應用:風力發電、太陽能發電、核能、天然氣/燃氣複循環發電、發電的碳捕捉與封存(CCS, carbon capture and storage),說明其內容、降低溫室氣體排放的助益以及可能之限制。
- 二、交通運輸是能源終端使用部門之一,約占能源終端使用部門溫室氣體排放總量 27% (IPCC AR5 WG III, 2015),對未來氣候變遷的趨勢有重大影響。請說明在交通運輸部門,可採取哪些措施以降低溫室氣體之排放。
- 三、氣候變遷不僅是自然科學議題,更是人與環境衝突及土地利用問題等環境變遷的一環。試從全球、區域、地方尺度,論述人口、環境變遷、氣候變遷與災害之關係。

四、行政院於 2012 年核定之「國家氣候變遷調適政策綱領」中,分析了臺灣氣候變遷情況及未來情境推估,並參考世界各國的調適作為及考量臺灣環境的特殊性與歷史經驗,就災害、維生基礎設施、水資源、土地使用、海岸、能源供給及產業、農業生產及生物多樣性與健康等八個領域,提出各領域受氣候變遷的衝擊與未來挑戰,並提出因應調適策略,希望能達成「提升及健全臺灣面對氣候變遷的調適能力,以降低臺灣的脆弱度」的政策目標,期「建構能適應氣候風險的永續臺灣」。試論述該政策綱領所關注的八個領域,具體如何建構其面對氣候變遷的調適能力。

所 別:各所

科	目:英文			
作名	答注意事項:			
1	.本試題共4大	題,總分100分	; 共 4 頁。	
2	不用抄題,可	不按題目次序作	答,但應書寫題	號。
3	3.禁用鉛筆作答	,違者不予計分	0	
_	<ul> <li>Vocabulary</li> </ul>	and Phrases: (2	0分)	
1. (	Generally, law e	enforcement must	obtain a search _	to conduct a
S	earch of a perso	on or premise with	out their consent.	
(	A) prosecution	(B) conviction	(C) warrant	(D) baton
c	events, criminal luring and after	activities, and lothe crime.	ogical predictions	ining the sequence of about what occurred  (D) experiment
C	organization. We		carefully before	the prospect for the making the decision.  (D) hallucinate
i S	ndependence, is overeignty prod		ance to the Ojibwion.	ne cost of economic e tribe. It's a:
	_	-	-	-
		•		tion. His normal smile
	•			ol is marked
		a steady, confident		
(	A) demeanor	(B) aurora	(C) avarice	(D) deposition

6.	. The cookbook contains a wonderful		for roa	st chicken.
	(A) system	(B) spell	(C) vehicle	(D) recipe
7.	Before Sally and	John divorced, the	y tried a	_•
	(A)widow	(B) wedding	(C) sequence	(D) separation
8.	to your	goals and never gi	ve up.	
	(A) Stall	(B) Stink	(C) Stand	(D) Stick
9.	The local hospital kind and friendly.		nd all the	_ members are very
	(A)staff	(B) stuff	(C) private	(D) personal
10	).Two important s from worry.	secrets for a long	life are regular ex	ercise and
	(A) hope	(B) happiness	(C) freedom	(D) fear

### 二、Translation: (30 分)

- 1. Citizens call the police department for many reasons crime report, fire, alarm, assault, prowler, suspicious circumstances, suspected child abuse, domestic disturbance, noise complaint, crowd control, legal advice, asking directions, lost/found property, vehicle accident, disturbing telephone calls, parking problems, blocking driveway, blocking sidewalk, stolen vehicle, stolen vehicle recovery, officer complaint, person down, dead body, missing person, medical emergency, etc.
- 2.作為一個以情報為導向、聚焦於國安威脅的組織,聯邦調查局兼具情報與執法雙重責任,其任務是:保護及防禦美國不受恐怖份子及外國情報威脅;執行美國刑事法令;提供領導統御與刑事司法服務給聯邦、州、都會,及國際機構與夥伴。

## 三、Reading Comprehension: (20 分)

#### 1-7 題

Turkey's annual information technology fair, CEBIT Bilişim Eurasia, this
year aims to1 a diverse crowd into the e-society debate, especially
2 the use of Internet technologies in government. Cebit Bilişim
Eurasia expects to host visitors from over 70 Countries3 members of
the press from nearly 20 countries4 the theme of "Competitive
Edge", Bilişim Summit 2007 and Forum Bilişim will discuss to5 the
competitive power of countries, organizations and individuals6 ICT
technologies. CEBIT Bilişim Eurasia7 this year at the TUYAP
Beylikdüzü Fair.

- 1. (A) implement (B) attract (C) innovate (D) analyze
- 2. (A) concerning (B) to have concerned
  - (C) having concerned (D) concerned
- 3. (A) much as (B) similar (C) as well as (D) like
- 4. (A) Among (B) Under (C) From (D) Between
- 5. (A) perform (B) instigate (C) mitigate (D) improve
- 6. (A) by using (B) only used (C) for using (D) to use
- 7. (A) is staging (B) was staged (C) will be staged (D) has staged

#### 8-10 題

Denver police conducted a search on Tuesday of a house at 720 S. Colfax. Officer Vincent Sully says he noticed someone moving items from a vehicle into the house. Many of the items matched the description of those recently stolen from area homes. "This fact," says Officer Sully, "provided reasonable belief that this was our suspect." According to Federal Law such suspicion is grounds to carry out a search. Police Chief Mancini explains, "The circumstances did not require the authorization of a search warrant." The suspect's lawyer plans to challenge this view, claiming that the search was illegal. It is unlikely that this argument will be accepted and the charges will most likely not be dropped.

Upon conducting the search, officers found what they were looking for, and more. In the suspect's vehicle they found three flat screen television identical to those that disappeared in Sunday's Water Street robberies. Inside the suspect's residence police found thousands of dollars' worth of allegedly stolen goods. Among the many items confiscated in the seizure were a ski mask and a black painted crowbar. Witnesses have reported seeing a thief in a similar mask break in to cars and houses with a crowbar. Possession of these objects could connect the suspect with those other burglaries. The suspect was arrested and an awaiting trial.

- 8. What is the article mainly about?
  - (A) The result of a trial
  - (B) A search and its outcome
  - (C) A series of violent robberies
  - (D) A criticism of unwarranted searches
- 9. What can you infer about illegal searches?
  - (A) They can result in dropped charges.
  - (B) They are based on reasonable belief.
  - (C) They can seize evidence from homes.
  - (D) They can provide the basis for a warrant.
- 10. What is NOT evidence against the suspect?
  - (A) A crowbar
  - (B) A ski mask
  - (C) Televisions
  - (D) An automobile

## 四、Essay: (30 分)

Write an essay on the following topic. The length of the essay should be <u>no</u> <u>less than 100 words</u> and <u>no more than 250 words</u>.

How does epidemic outbreak impact on the role of police officers?

所 别:防災研究所

科 目:災害分析與統計

## 作答注意事項:

1.本試題共4題,每題各占25分;共2頁。

2.不用抄題,可不按題目次序作答,但應書寫題號。

3.禁用鉛筆作答,違者不予計分。

- 一、貴官為定期參與某市醫療機構消防暨防災訪視委員,於某醫療機構 訪評過程中,該院院長建議能否將防疫納入醫院災害防救計畫內, 請貴官引用風險評估理論,說明其可行性,並提出具體作法。
- 二、進行災害風險分析時,常用定量與定性兩種類別的分析方式。請以 防災社區的評鑑指標為例,說明如何使用 Quantitative 與 Qualitative 兩種分析方法。
- 三、沙包是有效的水災因應工具,但其有笨重及存放困難等問題。坊間已推出可重複使用的高分子吸水樹脂沙包來因應存放問題。若甲公司生產的沙包材料成本(Y)為10元的麻布外袋,加上吸水樹脂的成本(購價為0.2元/g)。由於每次分裝量會略有差異,其吸水樹脂重量X(以公克計)的機率函數為:

$$f(x) = \frac{1}{10\sqrt{2\pi}}e^{\frac{-(x-500)^2}{200}}$$
,  $-\infty < x < \infty$ 

- (-) 若沙包材料成本 Y = a + bX,則  $a \cdot b$  之值為何?
- (二)沙包材料成本Y的分配特性為:常態分配、泊松分配、超幾何分配、均等分配、指數分配或是其他?
- (三)沙包材料成本 Y 的期望值為何?標準差為何?

- 四、在今年2月中之後,歐美爆發 COVID-19(嚴重特殊傳染性肺炎) 大流行,並為臺灣帶來疫情因應的第二波壓力。近期有專家學者建 議政府宜對返國旅客進行大規模採檢。
  - (一)假設國家隊開發出來的新快篩試劑對染病者篩檢後有 90.0% 呈現陽性反應(即有 10%偽陰性);但對沒染病者檢測,也 有 0.1%呈現陽性。另假設自歐美返國旅客 COVID-19 的盛行 率為 10.0%。請運用上述資訊,繪製運用該快篩試劑篩檢歐 美返國旅客的篩檢結果(陽性/陰性)與染病與否(染病/未 染病)的機率表。
  - (二)假設政府運用該快篩試劑對來自歐美旅客採檢。呈現陽性反應的旅客中,真正染病的機率為何?若呈現陰性反應的旅客可放行進行居家檢疫,則其中為染病者的機率為何?

所 别:防災研究所

科 目:災害管理

- 1.本試題共4題,每題各占25分;共1頁。
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- 3.禁用鉛筆作答,違者不予計分。
- 一、面對重大災害應變時,災害現場後勤支援是否妥善,往往影響應變成效至鉅。請說明事故指揮系統(ICS)中,後勤組組長的職責為何?另外,後勤組又可分為哪些小組,其功能又為何?
- 二、在事故指揮系統(ICS)中,作業組占有不可或缺且重要的角色。 請以 2019 年南方澳大橋斷裂事故應變為例,說明 ICS 作業組的功 能為何?
- 三、每當重大天然災害事件發生,現行災害防救體制面臨操作面的困擾時,「全災害管理 (All-hazard Management)」的討論,便再次躍然紙上。試述「全災害管理」的定義,以及其操作規劃面向具備哪些特性?
- 四、新冠肺炎(COVID-19)肆虐全球,台灣在這波疫情的防控成效受到 各方的肯定。試從災害的潛勢分析、預防(減災)、整備、應變等方 面,有哪些作法是當前疫情仍在可控的關鍵因素?

所 别:防災研究所

科 目:氣候變遷與災害

- 1.本試題共4題,每題各占25分;共2頁。
- 2. 不用抄題,可不按題目次序作答,但應書寫題號。
- 3.禁用鉛筆作答,違者不予計分。
- 一、「降低脆弱性與暴露」是常被建議的因應氣候變遷風險策略。請從 降低脆弱性與暴露的角度,就:1.人類發展、2.消除貧窮、3.生計安 全、4.生態系統管理、5.空間與土地使用規劃,列舉政策制定者可採 行之作為。
- 二、"Sendai Framework for Disaster Risk Reduction 2015 2030"指出 4 項優先推動項目,其中第 2 項為:「利用強化災害治理(governance)來管理災害風險」。上述治理一詞,關注於政府進行部門內及跨部門間的協調整合,納入公私部門合作,而非將所有風險降低的責任指向政府。請列舉 3 項氣候變遷因應上,地方政府可採取之「與私部門相關的治理作為」。
- 三、防災地圖是將災害資訊以點、線、面等方式繪製成地圖,以視覺化的方式傳達訊息,依製圖目的與內容可概分為:1.災害潛勢圖、2. 疏散避難路線圖、3.社區防災地圖、4.校園防災地圖等。請以土石流災害為例,說明上述各種地圖之異同。

四、Build back better (譯為更耐災的重建,或譯為重建的更好)是災後復原的目標, Mannakkara 等人在其學術著作中提出一個分析架構 (圖 1),探討受災地區/社群的災後復原是否重建的更好。請以一個你熟知的台灣的復原重建個案,運用下圖 1 所列之面向,分析該個案是否 Build back better。

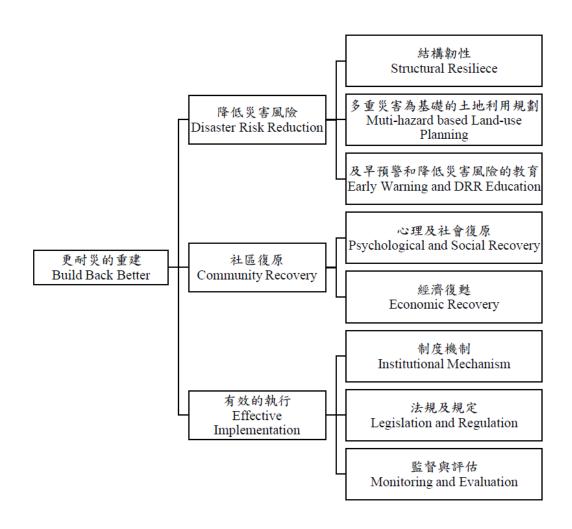


圖 1

來源:翻譯自 Mannakkara, S., Wilkinson, S., Potangaroa, R. (2019) Resilient post disaster recovery through building back better, NY: Routledge.