所 别:各所

科 目:國文

### 作答注意事項:

- 1.本試題共2大題,每大題各占50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。
- 4. 請以橫式書寫作答。

## 壹、解釋下列語句之義:(每小題 10 分,共 50 分)

- 一、盡其心者,知其性也;知其性,則知天矣。存其心,養其性,所 以事天也;夭壽不貳,修身以俟之,所以立命也。(《孟子》)
- 二、為天下及國,莫如以德,莫如行義。(《呂氏春秋》)
- 三、從心而動,不違自然所好;順性而遊,不逆萬物所好。(《列子》)
- 四、夫腹飢不得食,膚寒不得衣,雖慈母不能保其子,君安能以有其民哉?(〈論貴粟疏〉)
- 五、天地有正氣,雜然賦流形。下則為河嶽,上則為日星。於人曰浩 然,沛乎塞蒼冥。(〈正氣歌〉)

## 貳、論文:50分

題目:子曰:君子固窮,小人窮斯濫矣。

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الماريخ
答,但應書寫題號。
0
r clothing after a stop to see if the suspect has a weapon
nich can be seized by the officer.
(B) Arrest
(D) Crack-down
on the aircraft.
(B) promoted
(D) permitted
people in order to gain something such as money or
(B) Murder
(D) Fraud
le range of fields.
(B) promoted
(D) acquired
caused concern that the civil service branches are
(B) advanced
(D) perilous
spontaneous collective reaction to a publicly observed
(B) gratifying
(D) uninterrupted
entific problems, Edison was able to patent dozens of
(B) varied
(D) unbiased
of an antiquated belief that it could withstand fire.
(B) old-fashioned
(D) widely held
nanging the design of the building.
(B) legitimate
(D) subsequent

- 10. The recent downturn in the housing industry \_\_\_\_\_ the poor economic conditions.
  - (A) radiates

(B) symbolizes

(C) spans

(D) synthesizes

- 二、Translation: (30 分)
- 1. Policy assessment studies in the 1970s cast doubt on the effectiveness of these strategies for preventing crime. For instance, the experimental study of preventive patrol in Kansas City found that changing the level of patrol coverage had no effect on crime and citizen fear of crime. Other evaluative research showed that rapid response to calls for service from citizens didn't increase the likelihood of preventing a crime or apprehending an offender. Finally, evidence from dozens of studies suggests that traditional police strategies to reduce, control, or prevent crime are ineffective.
- 2. The safeguards introduced under the Police and Criminal Evidence Act, such as an impartial custody officer, a right to free legal advice, strict time limits on the length of detention and the tape-recording of interviews, have subsequently made it more difficult for the police to engage in 'fishing expeditions', to detain suspects without firm grounds for doing so, to make informal deals with them or to apply physical or psychological pressures to induce them to confess.
- 3. In a study of miscarriages of justice in the USA where the convicted person had subsequently been completely exonerated as a result of DNA testing, it was found that the most common contributory factor was mistaken identity, which occurred in 52 percent of the cases. Caucasians misidentified African-Americans defendants in 35 percent of the cases, but African-Americans also misidentified other African-Americans in 24 percent of the cases.

#### 三、Reading Comprehension: (20 分)

Concern for the environment in the US extends back into the nineteenth century, when nature lovers and sports enthusiasts first sought protection for areas of exceptional natural beauty or significance. But it was not until the late 1960's that environment concerns entered the mainstream of American political debate. By then many Americans had come to the conclusion that more development was not necessarily desirable, especially if it meant more polluted air, dying lakes and rivers, and a landscape strewn with unsightly waste, and crowded with sprawling construction projects. In May of 1970, several environmental groups staged the first Earth Day celebration, designed to heighten public awareness of environmental problems. The success of that initial effort led to it becoming a regular annual event.

During the 1950s and 1960s, industrial and vehicle pollution levels had become a serious threat to public health, so the environmental movement of this period focused heavily on restoring and ensuring the cleanliness of basic air and water supplies. Rapidly expanding development pressures were also **spurring** efforts to preserve unique lands and threatened wildlife habitats, and to protect the endangered species supported by them before they vanished into extinction. It is generally accepted that the environmental protection movement was so successful because of its grass roots support; groups of activists in hundreds of towns that took the initiative in cleaning up their own communities. During the 1970s, this local activism reinforced support for the passage of key laws at the national level, such as the Clean Water Act, Clean Air Act, Endangered Species Act, and National Environmental Policy Act, which together

have constituted the foundation for environmental standards in the US ever since.

In addition to this national legislation, the year after the first Earth Day, by executive order, President Nixon established the Environmental Protection Agency (EPS); an organization dedicated to restoring and protecting the environment. The EPA **spearheaded** many contemporary efforts to protect the environment, but it was not working alone. It was allied with a wide variety of distinctly different and separate organizations ranging from a small number of well-funded high-profile national and international organizations to many thousands of smaller special interest groups and even individuals working at the local level. The EPA has now become one of the government's largest and most influential regulatory agencies. Through its own efforts and in cooperation with other organizations, it has earned a large measure of credit for protecting and restoring the quality of the environment in the United States.

Although one might assume that the cause of environmental protection would engender universal support, it does have its detractors. One criticism that has been leveled against the movement is the claim that its predictions about the **dire** consequences of environmental damage have often been in error. Environmentalists counter this assertion by pointing out that their warnings have often brought about changes on the part of the public, the government and private industry, and that these changes prevented the predictions from being realized. However, just as it is often very difficult to gauge the impact of human activity on something as complex as the environment, it is equally difficult to determine which side is right in this debate. Because environmental issues cover such a wide range of concerns, this is a question that must be considered on a case by case basis. These voices of **dissent** have demonstrated to environmentalists the need to apply quantitative methods in assessing the extent of the destruction they have witnessed, or the degree to which their work has been manifested in actual improvement of the environment.

However vocal the critics of environmental protection efforts may be, given the very considerable body of environmental legislation that exists, it is safe to assume that their views do not represent the majority opinion. Private advocacy groups, the EPS, state legislatures and Congress have worked together to enact numerous laws regarding air and water quality, land use and waste management. That should be evidence enough of the broad extent of the popular support that underlies the movement.

- 1. On which of the following does the passage mainly focus?
  - (A) Earth Day's impact on the environmental movement.
  - (B) How to protect the environment of the planet.
  - (C) The environmental protection movement, and how it began.
  - (D) The success of the EPA in protecting natural resources.
- 2. The word **spurring** in the passage is closest in meaning to
  - (A) opposing

(B) managing

(C) supporting

- (D) motivating
- 3. According to paragraph 2, why was the environmental protection movement so widely successful?
  - (A) It protected plants and animals people cared about.
  - (B) It functioned well at the local level.
  - (C) It voted unsympathetic politicians out of office.
  - (D) It forced ratification of important national laws.

4.	4. Which president established the EPA?						
	(A) Roosevelt (B) Clinton						
	(C) Nixon (D) Obama						
5.	The word <b>spearheaded</b> in the passage is closest in meaning to						
	(A) led (B) inspired						
	(C) conceived (D) modified						
6.	6. According to paragraph 4, what was a common criticism of the enviro	onmental movement?					
	(A) It suggested measures that would harm the economy.						
	(B) It predictions could not be prevented through practical action.						
	(C) That it lacked the support needed to make any real progress.						
	(D) The environmental damage it claimed was not seen.						
7.	7. According to the passage, what effect did the criticism of the environr	mental movement have?					
	(A) It caused the environmentalists to change their methods.						
	(B) It decreased federal assistance for environmental protection.						
	(C) It diminished popular support for the EPA.						
	(D) It revitalized support for the environmental protection movemen	t.					
8.	8. Which of the sentences below best expresses the essential infor	mation in the underlined					
	sentence in the passage?						
	(A) Critics of the movement were successful in dissuading mar supporting some of the more drastic measures that had been su quantitative methods they employed.						
	(B) Opponents of the environmental protection movement succeede take another, more objective, approach to substantiating their cla	•					
	(C) People who disagreed with the environmentalists eventually w that the methods employed by the environmental movement conclusion incorrect.						
	(D) Members of environmental groups were reluctant to employ assessing environmental damage because they felt the results reclaims.	•					
9.	9. The word <b>dire</b> in the passage is closest in meaning to						
	(A) unrealized (B) possible						
	(C) grave (D) imaginary						
10	10. The word <b>dissent</b> in the passage is closest in meaning to						
	(A) opposition (B) support						
	(C) indifference (D) ambivalence						
四四	四、Essay: (30 分)						

Write an essay on the following topic: Information technology in policing and its impacts

所 别:警察政策研究所、刑事警察研究所、資訊管理研究所

科 目:統計學(同等學力加考)

### 作答注意事項:

- 1. 本試題共4大題,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、請以顯著水準  $\alpha$  =0.05,抽樣誤差在百分之一(e=0.01)範圍內,計算民意調查(簡單隨機抽樣)所須樣本數 n 為多少,並請解釋  $\alpha$  =0.05 及 e=0.01 之意義。(參考數值: $Z_{0.05}$  =1.645、  $Z_{0.025}$ =1.96、  $Z_{0.01}$ =2.33)(25 分)
- 二、請回答下列問題: (25分)
  - (-)請先繪製母體分配為常態分配, $\mu=50$ , $\sigma=6$  的機率分配圖形。
  - (二)若從其中抽樣 n=16,樣本平均數 $\overline{X}$  的抽樣分配圖形為何?
  - (三)該樣本平均數 $\overline{X}$ 可能的變動範圍 95%信賴區間為何?

(參考數值: $Z_{0.05}=1.645$ 、 $Z_{0.025}=1.96$ 、 $Z_{0.01}=2.33$ )

三、為比較男女性員警運動時間是否有差異,隨機抽取兩個獨立樣本, 結果如下:

	樣本數	平均數	標準差		
男性員警	60人	98小時	20小時		
女性員警	60人	92小時	18小時		

- (一)試列出變異數分析摘要表。(10分)
- (二)在顯著水準α=.10 時,試檢定男女性員警運動時間是否有差 異?(5分)
- (三)試分別計算男女性員警運動時間的 95%信賴區間為何? (計算至小數點後 2 位) (10 分)

Hint:  $F_{(1,118,0.05)} = 3.92$ ;  $F_{(2,118,0.05)} = 3.07$ ;  $F_{(1,118,0.10)} = 2.75$ ;  $F_{(2,118,0.10)} = 2.35$ 

四、某保險公司為瞭解投保壽險與教育程度高低是否有關,隨機調查乙樣本,得到結果如下:

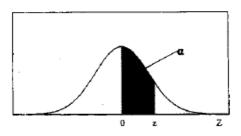
	國中畢業	高中畢業	大學畢業		
投保壽險	11人	18人	33人		
不投保壽險	39人	32人	27人		

- (一)試比較不同教育程度者,其投保壽險的比例為何? (計算至小數點後2位)(5分)
- (二)試在顯著水準α=.01 下,檢定投保壽險是否與教育程度有關? (15分)
- (三)根據上述檢定,研究者所下的結論可能會犯何種錯誤?(5分)

Hint:  $\chi^2_{(1, 0.01)} = 6.63$ ;  $\chi^2_{(2, 0.01)} = 9.21$ ;  $\chi^2_{(3, 0.01)} = 11.34$ ;  $\chi^2_{(4, 0.01)} = 13.28$ 

### 標準常態累加機率值表

$$P(0 < Z < z) = \alpha$$



	z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
	0.0	0.0000	0.0040	0.0080	0.0120	0.0160	0.0199	0.0239	0.0279	0.0319	0.0359
	0.1	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636	0.0675	0.0714	0.0753
	0.2	0.0793	0.0832	0.0871	0.0910	0.0948	0.0987	0.1026	0.1064	0.1103	0.1141
	0.3	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406	0.1443	0.1480	0.1517
	0.4	0.1554	0.1591	0.1628	0.1664	0.1700	0.1736	0.1772	0.1808	0.1844	0.1879
	0.5	0.1915	0.1950	0.1985	0.2019	0.2054	0.2088	0.2123	0.2157	0.2190	0.2224
	0.6	0.2257	0.2291	0.2324	0.2357	0.2389	0.2422	0.2454	0.2486	0.2517	0.2549
	0.7	0.2580	0.2611	0.2642	0.2673	0.2704	0.2734	0.2764	0.2794	0.2823	0.2852
	$\theta . 8$	0.2881	0.2910	0.2939	0.2967	0.2995	0.3023	0.3051	0.3078	0.3106	0.3133
	0.9	0.3159	0.3186	0.3212	0.3238	0.3264	0.3289	0.3315	0.3340	0.3365	0.3389
	1.0	0.3413	0.3438	0.3461	0.3485	0.3508	0.3531	0.3554	0.3577	0.3599	0.3621
					,						
	1.1	0.3643	0.3665	0.3686	0.3708	0.3729	0.3749	0.3770	0.3790	0.3810	0.3830
	1.2	0.3849	0.3869	0.3888	0.3907	0.3925	0.3944	0.3962	0.3980	0.3997	0.4015
	1.3	0.4032	0.4049	0.4066	0.4082	0.4099	0.4115	0.4131	0.4147	0.4162	0.4177
	1.4	0.4192	0.4207	0.4222	0.4236	0.4251	0.4265	0.4279	0.4292	0.4306	0.4319
	1.5	0.4332	0.4345	0.4357	0.4370	0.4382	0.4394	0.4406	0.4418	0.4429	0.4441
	16	0.4452	0.4463	0.4474	0.4404	0.4406	0.4505	0.4515	0.4535	0.4525	0.4545
	1.6			0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	
	1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633
	1.8 1.9	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
		0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750	0.4756	0.4761	0.4767
	2.0	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
	2.1	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846	0.4850	0.4854	0.4857
	2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.4890
	2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
	2.4	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936
	2.5	0.4938	0.4940	0.4941	0.4943	0.4945	0.4946	0.4948	0.4949	0.4951	0.4952
		0.1550	0.4240	0,4541	0.4545	0.4745	0.4240	0.4540	0.4545	0.4551	0.4554
	2.6	0.4953	0.4955	0.4956	0.4957	0.4959	0.4960	0.4961	0.4962	0.4963	0.4964
	2,7	0.4965	0.4966	0.4967	0.4968	0.4969	0.4970	0.4971	0.4972	0.4973	0.4974
	2.8	0.4974	0.4975	0.4976	0.4977	0.4977	0.4978	0.4979	0.4979	0.4980	0.4981
	2.9	0.4981	0.4982	0.4982	0.4983	0.4984	0.4984	0.4985	0.4985	0.4986	0.4986
	3.0	0.4987	0.4987	0.4987	0.4988	0.4988	0.4989	0.4989	0.4989	0.4990	0.4990
-											

所 别:資訊管理研究所

科 目:計算機概論

### 作答注意事項:

- 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、請說明下列題目:

- (一)請說明 TCP/IP 協定組 (protocol suite)?(7分)
- (二)請說明 IPv4 與 IPv6 之主要功能及特性?(6分)
- (三)請說明電路交換(circuit switching)與封包交換(packet switching)之主要特性?(6分)
- (四)請說明 FTTH (Fiber to the Home )之架構及運作流程?(6 分)

### 二、請說明下列題目:

- (一)請說明指令週期(Instruction Cycle)所包含的五個步驟? (8分)
- (二)請說明將所寫的高階語言放入記憶體中執行,其間的一連串 所需轉換過程?(8分)
- (三)請畫出電腦軟體與硬體階層關係圖,並針對每一階層舉例說 明之?(9分)

## 三、以下各小題,請簡要說明兩個名詞的異同,每小題5分:

- (一) Call by value 和 call by reference
- (二) Compiler 和 interpreter
- (三) CISC 和 RISC
- (四) Public key cryptography 和 symmetric key cryptography
- (五) Wi-Fi 和 WiMAX
- 四、請舉例並以實際程式碼說明在物件導向程式設計中,方法(method) 多載(overloading)及覆載(overriding)的異同。(可使用任一種物件導 向程式語言,並請註明)(25分)

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所 别:資訊管理研究所

科 目:管理資訊系統

### 作答注意事項:

- 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、試說明何謂 CMM 與 CMMI?使用 CMM 的主要目的為何? CMMI 的主要架構以及各層級的主要特徵為何?(25分)
- 二、試說明何謂『雲端運算』(Cloud Computing)?並依據不同的支援層級(Supporting Layer)與不同的服務配置(Service Deployment)來說明雲端運算的主要架構與配置模式。(25分)
- 三、試述「組織知識管理」的基本定義,並詳述 Probst(2000) 對於進行「組織知識管理」的主要流程步驟。(25分)
- 四、試述 ERP (Enterprise Resource Planning) 的基本定義,並以競爭力分析大師 Michael Porter 的價值鏈模式為基礎,繪表說明 ERP的六大模組及其主要功能。(25分)

所 别:資訊管理研究所

科 目:電腦犯罪與資訊安全

### 作答注意事項:

- 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、請說明 WEP 加密方式及其弱點,又卡皇是如何破解 WEP?(25分)
- 二、請說明 GSM 行動通訊連線程序,並說明如何偵查行動通訊犯罪?(25分)
- 三、Give the explanation for the following keywords: (25 分)
  - (−)Authentication
  - (二)Certification
  - (三)Verification
  - (四)Forensics
  - (五)Identification

For each keyword, give an example to specify its usage in the case you offer.

四、Social networking is the most popular on-line media for communications in the current computer systems. Give a possible criminal scenario in the on-line systems, where clearly indicate which one on-line system you offer in your case. By the case, give a forensic report to unveil the first criminal venue, so as to recover the truth in the procedure of crime investigation. (25 分)

所 别: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 into English or Chinese : (20 分)

1. 認罪協商 6. red-handed offender

2. 陰謀論 7. vehicle impoundment

3. 炸彈客 8. security breach

4. 自自 9. malefactor

5. 舞水端中程飛彈 10. avian influenza

#### 二、Passage Translation: (30 分)

- 1. For many years, the law enforcement community has attempted to detect impaired drivers through numerous innovative efforts and measures. The problem of driving under the influence is well known throughout society, yet, even with all of the strategies used to remove these drivers from U.S. highways, it continues to cause needless and tragic loss of life each year. When will such madness end? When will society no longer tolerate drunk driving? Until that time, the law enforcement community must attempt to contain the carnage inflicted upon law-abiding citizens by impaired drivers.
- 2. 紐約市的美國銀行(Bank of America)遭到搶劫。兩名戴著面罩、武裝的搶匪進入銀行。有位女性共犯在幫助搶匪逃跑的車內等候他們。當搶匪跳到櫃台取走金錢後,其中一位搶匪進入金庫並企圖搶走更多的現金。很快地,搶匪離開了銀行,而在跳進車內時,掉了一包袋子。不久之後,一位制服巡邏員警發現這部協助嫌犯脫逃的車輛被棄置在距離銀行幾哩的地方。哪裡是第一犯罪現場?而哪裡又是第二犯罪現場?

#### 三、Reading Comprehension: (20 分)

(I)

Internet dating has gone from daring to dull. As a result, many singles these days are looking to their cell phones instead of their laptops in an effort to locate love.

Cell phone technology now allows users to post tiny photographs and mini-profiles to a dating service mailbox, which can be visited by other cell phone users in search of a date. When a profile looks promising, users use their phones to send a text message to their person of interest.

Some phone dating services also are experimenting with ways to turn cell phone into homing devices. In other words, the phones can alert users to potential dates who may be just a short distance away - or, at the other end of the bar.

Europeans are heavily into phones dating, and China, which has 430 million cell phone users, also has embraced "mobile romance."

The wireless service providers love phone dating, too, because all that text messaging pumps up their revenues. Analysts estimate that global mobile dating revenues were US \$31 million in 2005; by 2009, that figure is projected to reach US \$215 million.

Some people say that phone dating is more about flirting than about serious romance. "People who want to use their mobile devices are more interested in short-term relationships than people who want to use their computers," said an officer of Match.com, a service with a quarter-million mobile users.

But, who really can say for sure. The next time the cell phones rings, it could be one calling Cupid.

- 1. Which is the function the dating service can offer through cell phones?
  - (A) Alerting users to potential dates.
  - (B) Increasing user's revenues.
  - (C) Holding a wedding.
  - (D) Giving a gift to possible dates.
- 2. How can someone get information on any possible date on their cell phones?
  - (A) By asking the operator.
  - (B) By making an emergency call.
  - (C) By using a laptop.
  - (D) By looking at mini-photos in a dating mailbox.
- 3. Who may gain the most advantage of cell phone dating economically?
  - (A) Users.
  - (B) Possible dates.
  - (C) The wireless service suppliers.
  - (D) The store owners.

- 4. What are cell phone romance seekers often interested in?
  - (A) Shorter-term relationship.
  - (B) Getting a new laptop.
  - (C) Finding other phone users.
  - (D) Short distance calling.
- 5. According to this passage, which of the following statements is **NOT** true?
  - (A) Many unmarried people use their cell phones rather than laptops to locate love.
  - (B) Match.com has two hundred thousand mobile users,
  - (C) European people like phone dating.
  - (D) Internet dating has gone from daring to uninteresting.

(II)

Outstanding opportunity with local real estate corporation. Requires strong background in real estate, financing, closing. Some legal training helpful. Prefer candidate with M.A. and two or more years of successful real estate experience. Broker's license required. Salary range \$16,000-\$23,000 commensurate with education and experience. Begin immediately. Interviews will be conducted Tuesday and Thursday, June 10 and 12. Call for an appointment 243-1153, or send a letter of application and résumé to:

Personnel Department Executive Real Estate Corporation 500 Capital Avenue Lawrence, Kansas 67884

- 6. Which of the following is **NOT** a requirement for the job advertised?
  - (A) At least two years experience.
  - (B) A broker's license.
  - (C) An M.A.
  - (D) Extensive legal training.
- 7. The salary range indicates that
  - (A) everyone earns a beginning salary of \$16,000.
  - (B) the salary depends upon the amount of education and work experience that the applicant has.
  - (C) some applicants would earn less than \$16,000.
  - (D) candidates with an M.A. would earn \$23,000.

- 8. What should an interested candidate submit with his or her application?
  - (A) A current address and telephone number.
  - (B) A signed contract.
  - (C) A summary of work experience.
  - (D) A request for employment.
- 9. This passage would most probably be found in
  - (A) the classified section of a newspaper.
  - (B) a college catalog.
  - (C) a textbook.
  - (D) a dictionary.
- 10. Real estate employees would most probably
  - (A) persuade people to buy insurance.
  - (B) sell houses.
  - (C) give professional opinions on personnel management.
  - (D) teach people how to do bookkeeping.

### 四、Essay: (30 分)

Write an essay on the following topic. The length of your essay should be <u>no less than 100</u> words and <u>no more than 200 words</u>.

#### **How to Create an Anti-Graft Society**

所 别:各所

科 目:國文

### 作答注意事項:

- 1.本試題共2大題,每大題各占50分。
- 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。
- 4.請以橫式書寫作答。

## 壹、解釋下列語句之義:(每小題 10 分, 共 50 分)

- 一、子曰:「三年學,不至於穀,不易得也。」(《論語·泰伯》)
- 二、古者四民異業而同道,其盡心焉,一也。(王陽明〈節菴方公墓表〉)
- 三、昔大禹鑿九山,通九江,用人力極廣,而無怨讟者,物情所欲, 而眾所共有故也。(《貞觀政要·論儉約》)
- 四、固知一死生為虛誕,齊彭殤為妄作。(王羲之〈蘭亭集序〉)
- 五、廷尉,天下之平也,一傾而天下用法皆為輕重,民安所措其手足? (《史記·張釋之列傳》)

## 貳、論文:50分

《孫子兵法·九變》云:「將有五危:必死,可殺也;必生,可 虜也;忿速,可侮也;廉潔,可辱也;愛民,可煩也。凡此五者, 將之過也。用兵之災,覆軍殺將,必以五危,不可不察也。」請參 酙前引古文思想,以「危機管理中的情緒管理」為題,書寫論文一 篇。

第1頁,共1頁

所 别:資訊管理研究所

科 目:計算機概論

### 作答注意事項:

- 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、請回答下列問題:
- (一) 請簡述行動通訊 GSM、GPRS、3G、3.5G、4G 之特性。(10 分)
- (二) IEEE 802.11 規範了哪 3 種傳輸技術?請說明之。(10分)
- (三)請說明藍牙技術的特性,以及為什麼它不適合作為無線區域網路?(5分)
- 二、請寫出以下三種演算法,並說明其時間複雜度。
- (一) Depth First Search (8分)
- (二) Breadth First Search (8分)
- (三) Kruskal's Algorithm (9分)
- 三、在使用高階程式語言設計程式時,如需處理大數(big number),內 建的資料型態通常會因為發生溢位(overflow)而產生錯誤的結果。 例如:要計算 100!(階乘)時,就無法使用內建的整數資料型態來 儲存計算結果。請以計算 100!為例,設計一個資料結構用以儲存精 確的計算結果,並根據此資料結構寫出計算階乘的演算法。
- 四、因應智慧型行動裝置(如:行動電話、平板電腦等)的普及,警察機關也開始提供行動 APP(應用程式)以服務民眾(如:警政服務、iPolice 等),這些 APP 均利用了適地性服務(Location Based Service, LBS),請回答下列問題:
- (一)何謂適地性服務?(6分)
- (二)如何利用智慧型行動裝置取得使用者所在的位置?(9分)
- (三)如何利用適地性服務來設計警用行動 APP 以輔助警察勤務的執行?(10分)

所 别:資訊管理研究所

科 目:管理資訊系統

## 作答注意事項:

- 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、何謂企業智慧(BI, Business Intelligent)?何謂競爭智慧(Competitive Intelligent)?請繪製企業智慧(BI)的IT整合性架構圖。
- 二、在系統分析與設計中,試述何謂 MDA(Model-Driven Architecture)?

### 三、請回答下列問題:

- (一)試說明何謂「決策支援系統」(Decicion Support Systems)? (5分)
- (二) 試描述決策支援系統的主要組成元件與系統架構。(10分)
- (三)試比較決策支援系統與管理資訊系統在系統開發與應用方面有何 不同?以及它們如何在警政應用上提供價值?(10分)

## 四、請回答下列問題:

- (一)試說明何謂「專案管理」(Project Management)? (5分)
- (二)試描述專案管理在規劃層次與管理層次各包含哪些主要項目?(10分)
- (三)試探討影響專案成敗的主要關鍵因素為何?(10分)

所 别:資訊管理研究所

科 目:電腦犯罪與資訊安全

## 作答注意事項:

- 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。
- Explain the one-key and two-system at least 3-function-term in details in security programs. Give the algorithms and examples for both one-key system and two-key system in terms of encryption and decryption operations.
- Give the requirements of steganography in digital multimedia. In cyber-crime scenario, apply the steganography to be the positive evidence in the investigations of digital forensics case. Describe the scenario and investigation procedure to guarantee the effectiveness of seized evidence.

### 三、試說明下列電腦安全措施:

- ( ) Concentric circle approach
- (二) Encrypted and shadow password files
- (三) Secure Sockets Layer
- (四) Firewall
- (五) Intrusion detection system
- 四、請列舉駭客入侵伺服器電腦系統,可能採取哪些步驟?(15分)又前述哪些步驟較可能於系統中留下入侵跡證?(10分)

所 别: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。

## 一、Vocabulary and Phrases translation: (20 分)

- 1、公部門
- 2、犯罪俚語
- 3、線民
- 4、引渡
- 5、鄰里守望相助計畫
- 6 · a motor bike
- 7 · acute stress disorder
- 8 · cloned cars
- 9 · electronic monitoring
- 10 · intelligence apparatuses

## 二、Translation: (30 分)

- 1 We have investigated the alarm and there is a small fire on the fourth floor. The fire department has arrived and the fire has been contained. We are asking everyone to leave the building in an orderly fashion. Exit through stairwell B on the south side of the building.
- 2 As people start using their smart phones to tap into computer networks, the damage caused by malware could grow more severe. If smart phones serve as payment devices, malware that nabs your identity and taps directly into your credit line could follow.
- 3 In an unprecedented effort to save the species, South Africa has bought new ships equipped with top-of-the-line military night-vision equipment. They've also begun testing seized boats for DNA to prove they were used in abalone harvesting.

## 三、Reading Comprehension: (20分)

Most people can remember a phone number for up to thirty seconds. When this short amount of time **elapses**, however, the numbers are erased from the memory. How did the information get there in the first place? Information that makes its way to the short term memory (STM) does so via the sensory storage area. The brain has a filter which only allows stimuli that is of immediate interest to pass on to the STM, also known as the working memory.

There is much debate about the capacity and duration of the short term memory. The most accepted theory comes from George A. Miller, a cognitive psychologist who suggested that humans can remember approximately seven chunks of information. A chunk is defined as a meaningful unit of information, such as a word or name rather than just a letter or number. Modern theorists suggest that one can increase the capacity of the short term memory by chunking, or classifying similar information together. By organizing information, one can optimize the STM, and improve the chances of a memory being passed on to long term storage.

When making a conscious effort to memorize something, such as information for an exam, many people engage in "rote rehearsal". By repeating something over and over again, one is able to keep a memory alive. Unfortunately, this type of memory maintenance only succeeds if there are no interruptions. As soon as a person stops rehearsing the information, it has the tendency to disappear. When a pen and paper are not handy, people often attempt to remember a phone number by repeating it aloud. If the doorbell rings or the dog barks to come in before a person has the opportunity to make a phone call, he will likely forget the number instantly. Therefore, rote rehearsal is not an efficient way to pass information from the short term to long term memory. A better way is to practice "elaborate rehearsal". This involves assigning semantic meaning to a piece of information so that it can be filed along with other pre-existing long term memories.

Encoding information semantically also makes **it** more retrievable. Retrieving information can be done by recognition or recall. Humans can easily recall memories that are stored in the long term memory and used often; however, if a memory seems to be forgotten, it may eventually be

retrieved by prompting. The more **cues** a person is given (such as pictures), the more likely a memory can be retrieved. This is why multiple choice tests are often used for subjects that require a lot of memorization.

- 1 · According to the passage, how do memories get transferred to the STM?
  - (A) They revert from the long term memory.
  - (B) They enter via the nervous system.
  - (C) They get chunked when they enter the brain.
  - (D) They are filtered from the sensory storage area.
- 2 The word **elapses** in paragraph 1 is closest in meaning to :
  - (A) continues
  - (B) adds up
  - (C) appears
  - (D) passes
- 3 · All of the following are mentioned as places in which memories are stored EXCEPT the:
  - (A) STM
  - (B) long term memory
  - (C) sensory storage area
  - (D) maintenance area
- 4 \ Why does the author mention a dog's bark?
  - (A) To provide a type of interruption
  - (B) To give an example of a type of memory
  - (C) To prove that dogs have better memories than humans
  - (D) To compare another sound that is loud like a doorbell
- 5 · How do theorists believe a person can remember more information in a short time ?
  - (A) By organizing it
  - (B) By repeating it
  - (C) By giving it a name
  - (D) By drawing it

- 6 The author believes that rote rehearsal is:
  - (A) the best way to remember something
  - (B) ineffective in the long run
  - (C) more efficient than chunking
  - (D) an unnecessary interruption
- 7 The word **it** in the last paragraph refers to :
  - (A) encoding
  - (B) information
  - (C) semantics
  - (D) STM
- 8 The word **elaborate** in paragraph 3 is closest in meaning to:
  - (A) pretty
  - (B) efficient
  - (C) complex
  - (D) regular
- 9 · Which of the following is NOT supported by the passage?
  - (A) The working memory is the same as the short term memory.
  - (B) A memory is kept alive through constant repetition.
  - (C) Multiple choice exams are the most difficult.
  - (D) Cues help people to recognize information.
- 10 The word **cues** in the passage is closest in meaning to
  - (A) clues
  - (B) questions
  - (C) images
  - (D) tests

## 四、Essay: (30 分)

Write an essay on the following topic. The length of your essay should be <u>no less than 100 words</u> and <u>no more than 200 words</u>. In your opinion, does "Sunflower Movement" create a new threat to Taiwan's national security?

所 别:各所

科 目:國文

### 作答注意事項:

- 1.本試題共2大題,每大題各占50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。
- 4. 請以橫式書寫作答。

## 壹、解釋下列詞句之義:(每小題10分,共50分)

- 一、民不畏死,奈何以死懼之?若使民常畏死,而為奇者,吾得執而 殺之,孰敢?(《老子·第七十四章》)
- 二、百戰百勝,非善之善者也;不戰而屈人之兵,善之善者也。(《孫 子·謀攻》)
- 三、非我而當者,吾師也;是我而當者,吾友也;諂諛我者,吾賊也。 (《荀子·修身》)
- 四、文武不備,良民懼然身修者,官未曾亂也。奉職循理,亦可以為 治,何必威嚴哉?(《史記·循吏列傳》)
- 五、天下不可以力勝,神祇不可以親恃。惟當弘儉約,薄賦斂,慎終始,可以永固。(《貞觀政要·納諫》)

## 貳、論文:50分

題目:王陽明《傳習錄》:「未有知而不行者;知而不行,只是未知。」 請參酌前引古文思想,以「論知與行」為題,寫作論文一篇。 說明:

- 一、文言、白話不拘。
- 二、須分段,並使用標點符號。
- 三、字跡不可潦草。
- 四、字數不得少於五百字。

所 别:資訊管理研究所

科 目:計算機概論

### 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。
- In the computer science, the graph is usually used to describe the job assignments and analysis procedures. Give more explanations to the following keywords.
  - ( ) Euler path and Euler circle
  - (ニ) Hamilton path and Hamilton circle
  - (三) minimal spanning tree and shortest path

    By the way, also give the examples/figures for each one keyword.

## 二、請依序作答:

- ( ) Give positive integers, x, y, n, A, where A < n.. Let  $x*y \mod f(n) = 1$ , where f(n) is a function value. Assume that the arithmetic operation as  $A^{f(n)} \mod n = 1$ . Give the fact of  $A^{xy} \mod n = A$ .
- (=) See the following expressions and give the final results, where the multiplication operations are required within 20 times for each expression.
  - 7<sup>300</sup> mod 41
  - 13<sup>200</sup> mod 41
- 三、計算機系統匯流排(System Bus)乃主機板(Motherboard)的主要組成之一,請依功能將系統匯流排加以細分,並舉例說明之。

四、解釋下列名詞:(每小題5分)

- (一) 雲端運算(Cloud Computing)
- (二) 檔案系統(File System)
- (三)系統呼叫(System Call)
- (四) 大數據(Big Data)
- (五)精簡指令集計算機(Reduced Instruction Set Computer)

所 别:資訊管理研究所

科 目:電腦犯罪與資訊安全

## 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、解釋名詞:

- (-) Public-Key Cryptosystem
- (二) Message Authentication Code
- (三) Digital Certificate
- (四) Secure Socket Layer
- (五) IP Security Protocol

## 二、請回答下列問題:

- (一)請舉例說明雲端硬碟服務鑑識。(8分)
- (二)當詐騙集團竄改主叫號碼時,偵查員警如何找出實際的發話地點,請說明偵查流程。(8分)
- (三)請說明刑案現場數位證據蒐證程序。(9分)

## 三、請回答下列問題:

- (一)請說明下列機構,對於處理電腦相關犯罪的數位證據處理原則。 (10分)
  - 1、美國司法部 (Department of Justice) 及美國司法研究所 (National Institute of Justice)
  - 2、英國高級警官協會 (ACPO; Association of Chief Police Officers)
- (二)請製表說明異同比較、爭執重點及您的看法。(15分)

四、ISMS (Information Security Management System) 是一套有系統 地分析和管理資訊安全風險的方法。資訊安全管理的目標是透過控制方法,把資訊風險降低到可接受的程度內。請問 ISMS / ISO 27001 的管理要求為何?(10分)試述從 ISO 27001:2005到 ISO 27001:2013的重大變革有哪些。(15分)

所 別:資訊管理研究所

科 目:管理資訊系統

### 作答注意事項:

- 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、一個實施電腦化之組織(含政府機關或企業)如欲建立一套完善管理 資訊系統(Management Information System, MIS)時,必須事先建 置好相關資訊系統用之軟體、硬體建設及擬訂組織資訊發展策略, 請回答下列問題:
  - (一)何謂管理資訊系統?(7分)
  - (二)組織相關資訊建設與發展策略包括四項層級,分別為基礎層、發展層、應用層和策略層等,試簡要說明這四項層級的特點。(8分)
  - (三)關於應用層方面,試舉出五種應用軟體名稱應用在組織活動上, 並說明它們提供組織運作之用途。(10分)
- 二、有關資料倉儲,請回答下列問題:
  - (一)寫出資料倉儲定義。(5分)
  - (二)指出線上交易處理資料庫與資料倉儲的五項差異點,並敘述其差 異內容。(20分)
- 三、在物件導向系統分析與設計中,試述何謂 UML (Unified Modeling Language)?
- 四、試述 ERP (Enterprise Resource Planning) 的基本定義,並以競爭力分析大師 Michael Porter 的價值鏈模式為基礎,繪表說明 ERP的六大模組及其主要功能。

高見公職·警察考試權威補習班整理 更多警察考試考古題庫免註冊,免費下載詳見本班官網

所 别:各所

科 目:英文

#### 作答注意事項:

- 1.本試題共4大題;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、Vocabulary and Phrases∶(20 分)

(一)輻射汙染 (六)司法互助

(二)自拍神器 (七)溫室效應

(三)事故現場 (八)恐怖攻擊

(四)警政署署長 (九)食安危機

(五)客機空難 (十)內線交易

#### 二、Translation:(30分)

- (一) For at least half a century, police have considered it important to cut to a minimum of their response times to crime calls. The faster the response, they have reasoned, the better the chances of catching the criminal at or near the scene of the crime. (10 分)
- (二) Officers shall not use their police power to resolve personal grievances (e.g. those involving the officer, family members, relatives, or friends) except under circumstances that would justify the use of self-defense, actions to prevent injury to another person, or when a serious offense has been committed that would justify an arrest. (10 分)
- (三) The essence of the police role in maintaining order is to reinforce the informal control mechanisms of the community itself. Areas where community controls break down are vulnerable to criminal investigation. (10 分)

### 三、Reading Comprehension: (20分)

Another large-scale study conducted by William Spelman and Dale Brown and published in 1984 was also to challenge a core police assumption of that period — that improvement in rapid response to calls for service would lead to improvements in crime fighting. This study was developed in good part because of the findings of a prior investigation in Kansas City that found little support for the crime control effectiveness of rapid response to calls for service (Kansas City Police Department 1977). With support from the National Institute of Justice, Spelman and Brown investigated 4000 victims, witnesses, and bystanders in some 3300 serious crimes in four American cities. This was another major study in terms of the resources brought to bear and the methods used. Again it examined a strategy that was aided by technological advances in the twentieth century and that was central dogma of police administrators — that police must get to the scene of a crime quickly if they are to apprehend criminal offenders.

#### 根據以上內容,用英文回答以下問題(每題2分):

- (一) Spelman and Brown 的研究報告發表於哪一年?
- (二)在 Spelman and Brown 的研究之前,哪個城市警察局做過類似研究?
- (三) Spelman and Brown 的研究是在哪個部門的支持下進行?
- (四) Spelman and Brown 研究的實證資料係蒐集自幾個美國城市?

#### 根據以上內容,用中文回答以下問題(每題3分):

- (五) Spelman and Brown 所要挑戰的研究假設是什麼?
- (六)在Spelman and Brown 研究之前的類似研究,有何研究發現?
- (七) Spelman and Brown 研究的實證資料來自 4000 個研究對象,這些研究對象 是每個案件中的什麼人?
- (八) "dogma of police administrators"的意義為何?

#### 四、Essay: (30 分)

Write an essay on the following topic. The length of your essay should be <u>no less</u> than 100 words and <u>no more than 200 words</u>.

#### "Mobile Police Station" and its Impacts

所 别:各所

科 目:國文

#### 作答注意事項:

- 1.本試題共2大題,每大題各50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。
- 4.請以橫式書寫作答。

#### 壹、解釋下列詞句之義:(每小題10分,共50分)

- 一、呦呦鹿鳴,食野之蒿。我有嘉賓,德音孔昭。視民不桃,君子是則是傚。 我有旨酒,嘉賓式燕以敖。(《詩經·小雅·鹿鳴》)
- 二、初,鄭武公娶于申,曰武姜,生莊公及共叔段。莊公寤生,驚姜氏,故名 曰寤生,遂惡之。愛共叔段,欲立之。亟請於武公,公弗許。(《左傳》隱 公元年)
- 三、往者貞觀之初,率土霜儉,一匹絹才得粟一斗,而天下帖然。百姓知陛下 甚憂憐之,故人人自安,曾無謗讟。(《貞觀政要·論儉約》)
- 四、發慮憲,求善良,足以謏聞,不足以動眾;就賢體遠,足以動眾,未足以 化民。君子如欲化民成俗,其必由學乎!(《禮記·學記》)
- 五、子曰:「君子之於天下也,無適也,無莫也,義之與比。」(《論語·里仁》)

#### 貳、論文:50分

〔宋〕蘇軾〈刑賞忠厚之至論〉云:「先王知天下之善不勝賞,而爵祿不足以勸也;知天下之惡不勝刑,而刀鋸不足以裁也。是故疑則舉而歸之於仁,以君子長者之道待天下,使天下相率而歸於君子長者之道。」請參酌前引古文之思想,以「忠厚乃待人之道」為題,寫作論文一篇。

所 别:資訊管理研究所

科 目:管理資訊系統

#### 作答注意事項:

- 1.本試題共4題,每題各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、試分別說明資料倉儲(data warehouse)及資料探勘(data mining)的意義與內涵(16分),並申論資料倉儲及資料探勘於警察工作的應用(9分)。
- 二、解釋下列名詞: (每小題 5 分,共 25 分)
- (一)網路經濟體系(network economy)
- (二) 策略性資訊系統 (strategic information system)
- (三) 群眾外包 (crowd sourcing)
- (四)分析型顧客關係管理 (analytical customer relationship management)
- (五) 虛擬社群 (virtual community)
- 三、近幾年我國各級政府對於公開資料(Open Data)已採取積極作為,並造成國內有關擴展管理資訊系統應用範疇邁出一大步。請回答下列問題:
- (一)何謂公開資料?
- (二)公開資料之提供機關(構)與蒐集資料者,應遵守哪些事項?
- (三)如果你是某一縣市警察局資訊室(科)的一位資訊巡官,警察局局長希望你設法將「刑案紀錄」資料對外公開,以達政府資料公開目的。試從管理資訊系統觀點,提出具體做法。

四、根據國外 Mays 商學院 (Mays Business School) 對於「管理資訊系統」定 義如下:

Management information systems (MIS) is the study of people, technology, organizations, and the relationships among them, including how individuals, groups, and organizations evaluate, design, implement, manage, and utilize systems to generate information to improve efficiency and effectiveness of decision making, including systems termed decision support systems, expert systems, and executive information systems.

- (一)請將上述英文定義譯成中文。
- (二) 何謂 decision support systems, expert systems, and executive information systems?
- (三)如果你是一位資訊巡官,資訊主管要你提出有關「集會遊行」事件(活動)的 executive information systems 規劃。試扼要寫出該規劃重點。

所 别:資訊管理研究所

科 目:電腦犯罪與資訊安全

#### 作答注意事項:

- 1.本試題共4題,每題各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、解釋名詞:

- ( ) Steganography
- (二) Pretty Good Privacy
- (三) Smurf Flooding Attack
- (四) Anomaly Intrusion Detection
- (五) Certification Authority

#### 二、請回答下列問題:

- (一)請以 Line 為例,說明即時通訊服務鑑識。(8分)
- (二)請說明境外進線詐欺電話之路由及偵查之技術。(8分)
- (三)請說明拍賣詐欺集團手法及偵查之技術。(9分)
- The nature of a particular cybercrime will frequently dictate social media sites to seek incriminating data. You are the cybercrime investigator in a cyberstalking case. Social media, like Facebook, Twitter, My Space, Google+, and others, has become a standard of communication in our society. Today it can be said that searching social media for leads is routine activity, particularly when cybercrime and high-tech devices are in play. When social media is possible evidence, immediate steps must be taken to preserve the data. What shall you do?

- 四、Information security is the process of protecting the availability, privacy, and integrity of data. While the term often describes measures and methods of increasing computer security, it also refers to the protection of any type of important data. Please draw a figure or a table to explain the goal and tools in the following five phases of system attack.
- (一) Reconnaissance (5分)
- (二) Scanning and Enumeration (5分)
- (三) Gaining Access (5分)
- (四) Maintaining access (5分)
- (五) Covering Tracks (5分)

所 别:資訊管理研究所

科 目:計算機概論

- 1.本試題共4題,每題各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。
- Give the definition for a good algorithm in details. Explain the time complexity in the design of an algorithm in the cases of Kruskal method and Prim method, respectively.
- Consider the concept of Chinese remainder theorem (CRT for short). Give the numeric example to illustrate CRT. Explain the CRT as its applications in computer science with the view of information/network security.
- = Please define or explain each of the following terms. (Please give the full name for each acronym)
- ( **-** ) TCP/IP
- (=) HTML
- (三) XML
- (四) MIMD
- (五) RISC
- 四、The Fibonacci sequence is typically defined by the following equations:

$$F_0 = 0$$
,  $F_1 = 1$ ,  $F_n = F_{n-1} + F_{n-2}$ ,  $n \ge 2$ 

- (-) Please find a general expression for  $F_n, n \ge 2$ . (10 %)
- (二) Please write a recursive algorithm to generate the sequence. (10 分)
- ( $\Xi$ ) Please determine the Big Oh of this algorithm. (5分)

所 别:各所

科 目:國文

## 作答注意事項:

- 1.本試題共2大題,每大題各占50分。
- 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。
- 4. 請以橫式書寫作答。

# 壹、解釋下列詞句之義:(每小題10分,共50分)

- 一、吾所以有大患者,為吾有身;及吾無身,有何患?(《老子·第十 三章》)
- 二、為天下及國,莫如以德,莫如行義。以德以義,不賞而民勸,不 罰而邪止,此神農、黃帝之政也。(《呂氏春秋·上德》)
- 三、事在四方,要在中央。聖人執要,四方來效。(《韓非子·揚權》)
- 四、凡戰者,以正合,以奇勝。故善出奇者,無窮如天地,不竭如江 海。(《孫子兵法·勢篇》)
- 五、群臣陳其言,君以其言授其事,事以責其功。功當其事,事當其 言則賞;功不當其事,事不當其言則誅。(《韓非子·二柄》)

## 貳、論文:50分

顧炎武〈與友人論學書〉:「愚所謂聖人之道者如之何?曰:『博學於文』,曰:『行己有恥』。自一身以至於天下國家,皆學之事也;自子臣、弟友,以至出入、往來、辭受、取與之間,皆有恥之事也。 恥之於人大矣。」請參酌前引古文之思想,以「現代警察的知識涵養與道德操守」為題,書寫論文一篇。

所 別:各所			
科 目:英文			
作答注意事項:			
1.本試題共4大題;	<b>比</b> 1 百。		
2.不用抄題,可不按是		· 伯庇 查 宙 蹈 骀 。	
3.禁用鉛筆作答,違之		但您首何贬派。	
- \ Vocabulary and Phra	ses: (20 分)		
1.digital evidence			
2.informant			
3.INTERPOL			
4.polygraph			
5.in the line of duty			
6.The violence outside t	he city hall	soon after	the police force put
down the riot.			
(A) expired (B	3) subsided	(C) redirected	(D) instilled
7.The police	the whol	e area after fires we	ere discovered in the
high-rise building.			
(A) cordoned off		(B) congested w	rith
(C) posted to		(D) emancipated	l from
8.The accused	against the d	eath sentence to the	Supreme Court.

(B) accommodated (C) adjusted

(A) adhered

(D) appealed

9 is a	a person who is involved	ved with another in	the commission of a		
crime whether as	a principal or as an acc	cessory.			
(A) Escort	(B) Accomplice	(C) Abettor	(D) Informant		
10. He gave a	to the police t	to the police telling them how he killed his wife.			
(A) commitment		(B) narrator			
(C) commandmen	nt	(D) confession	1		

#### 二、Translation: (30 分)

### (一) 中翻英(10分)

在全球化趨勢下,犯罪國際化日益嚴重。因此,「打擊跨國犯罪」已 是全球警政的核心。我國亦積極與各國執法機關建立情報合作管道,蒐集 運輸販毒、國際詐欺、恐怖活動、人口販運、武器走私、駭客入侵,網路 洗錢等犯罪情資,期能掃蕩不法,使跨國犯罪無所遁形,民眾免於被害。

### (二) 英翻中(20分)

- 1. The treatment to be given the offender cannot alter the fact of the offense, but we can take measures to reduce the chance of similar acts occurring in the future. We should banish the criminal, not in order to exact revenge nor directly to encourage reform, but to deter that person and others from further illegal attacks on society.
- 2. A police officer is permitted to use the amount of force necessary only to overcome the resistance or aggression that is presented by the subject. When the resistance or aggression is reduced, the officer must reduce his or her force correspondingly.

### 三、Reading Comprehension: (20 分)

### (一)請依下文回答第1題至第5題

Marco Polo literally changed the Western view of the world. European maps in his time were <u>1</u> on Biblical interpretations and classical mythology. Jerusalem was at the center. At the margins the map-makers drew monsters and savages, because there, <u>2</u> the Christian center, Nature herself was believed

to be monstrous. Then <u>3</u> Polo's book *Travels*, describing great civilizations in the East, and a world not centered on Jerusalem, politically or geographically. This recasting of the world into a more dynamic and multi-centered geographical space was the first step toward 4 we now call globalization. Travels appeared in popular anthologies circulating in Europe in the 15th and 16th centuries. Christopher Columbus had an early copy, and made notes in the margins. He later <u>5</u> America while searching out a western route to Polo's Cathay.

1. (A) based	(B) place	(C) situated	(D) supported
2. (A) in the vic	inity of	(B) far from	
(C) in lieu of		(D) close to	
3. (A) came	(B) existed	(C) lied	(D) stood

4. (A) which (B) what (C) that (D) where

5. (A) jumped into (B) took after (C) bungled into (D) diverged from

### (二)請依下文回答第6題至第10題

In recent years, issues of public and personal safety have become a major concern to many people around the world. Violent incidents in fast food restaurants, parking lots, hospitals, schools and colleges, and shopping malls have led many to seek greater security inside their homes and in many public buildings and areas as well. Sales of burglar alarms, motion detectors, and closed circuit television systems (CCTV) have skyrocketed since 2000. Convenience stores, gas stations, jewelry stores, and even the postal service have barricaded their staffs behind safety glass enclosures and focus cameras on many work stations that involve handling money. Communities employ private security forces and encourage homeowners to install alarm systems and other security devices. While some people sympathize with the reasons behind these efforts, others have voiced concern that these measures are helping to create a siege mentality. There is fear that such a mentality will lead to a general distrust of others among people that could foster a dangerous isolation within neighborhoods and among neighbors.

- 6. The passage suggests which of the following about community security?
- (A) Communities are more dangerous today than they were before the year 2000.
- (B) Too much concern for security could destroy trust among neighbors.
- (C) Poor security has led to an increase in public violence.
- (D) Isolated neighborhoods are unsafe neighborhoods.
- 7. The word *foster* in the last sentence most nearly means
- (A) adopt
- (B) encourage
- (C) prevent
- (D) secure

- 8. The author believes that
- (A) More security is needed to make neighborhoods safer.
- (B) People should spend more on home security.
- (C) People should not ignore the problems created by excessively safety concerns.
- (D) Security devices are the best protection against violent crime.
- 9. According to the author, security devices have skyrocketed since 2000. What does it mean?
- (A) People like to live a life full of variety of security devices.
- (B) The need of security devices has dramatically increased among people.
- (C) The prices of security devices are on the increase.
- (D) Security devices have changed a lot since 2000.
- 10. In the second last sentence, the phrase *siege mentality* means
- (A) hostility
- (B) defensiveness
- (C) fear
- (D) corruption

#### 四、Essay: (30 分)

Write an essay on the topic: Police Visibility

Do you agree or disagree with the following statement?

Increasing police visibility is a good policy to better public security.

Use specific reasons and examples to support your opinion.

所 别:資訊管理研究所

科 目:計算機概論

- 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) In the view of data searching, define the HASH function in this way. And give an efficient algorithm in HASH function usage, in conjunction with a set of 15 keywords. (8分)
- (二) Give two more data search algorithms besides HASH manner, in examples, respectively.  $(8\,\%)$
- (三) Evaluate the time complexities in the general cases as the three algorithms mentioned above.  $(9 \, \%)$
- = \ Explain the Pigeonhole Principle in the fundamental computer science. Assume that there are 132 balls to put into 77 boxes, where one box contains at least one ball. Discuss a fact that there are exactly 21 balls which are assigned into the consecutive boxes.
- $\leq$  Do the following tasks. Show your work.
- (一) Convert the decimal 15 and -12 into 8-bit 2's complement number and hexadecimal numbers. (8分)
- (二) What is an overflow? Provide an example using 4-numbers.  $(8 \, \%)$
- (三) Convert 47.365 into a binary scientific notation (i.e.,  $\pm 1.xxxx \times 2^{Y}$ ) (9分)

- 四、Let G = (V, E) be a directed graph where V represents vertices, and E represents edges.  $E = \{(1,2), (3,2), (2,3), (1,3), (2,4), (3,4)\}$ . Each pair (i,j) in E means that there is an arc from node i to node j.
- ( ) Please draw the directed graph and write in-degree and out-degree of each vertex.  $(8\,\%)$
- (二) Please find the shortest path from node 1 to node 4. (8分)
- (三) Please find the minimal spanning tree. (9分)

所 别:資訊管理研究所

科 目:管理資訊系統

## 作答注意事項:

- 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、何謂社群媒體(Social Media)?其在應用上的主要類型為何?
- 二、在系統分析與設計時,輸入資料名稱的代碼及其檢查碼之設計方法為何?
- 三、Wikipedia 針對"Big Data "看法如下:

Big data is a term for data sets that are so large or complex that traditional data processing applications are inadequate. Challenges include analysis, capture, data curation, search, sharing, storage, transfer, visualization, querying and information privacy. The term often refers simply to the use of predictive analytics or certain other advanced methods to extract value from data, and seldom to a particular size of data set.

- (一)請將上述英文段落譯成中文。(10分)
- (二) 說明 Data Curation 對 Data Analysis 的重要性。(10 分)
- (三)從資料探勘(Data Mining)觀點,舉出任何 Predictive Analytics 所提供的 2種監督式學習用的演算法,並說明這些演算法的功能。(5分)

### 四、有關物件導向系統分析與設計,回答下列問題:

- (一) 何謂 UML? 英文全名? (5分)
- (二) 寫出物件導向的特性。(5分)
- (三) 說明 Information Hiding 在設計物件導向系統的重要性。(10分)
- (四) 定義 Use Case, 並繪出 Use Case Diagram 的範例圖。(5分)

所 别:資訊管理研究所

科 目:電腦犯罪與資訊安全

## 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。
- The Scientific Working Group on Digital Evidence (SWGDE) creates standards for digital and multimedia evidence. In the document of *SWGDE Best Practices for Computer Forensics* Version 3.1 (September 05, 2014), it describes the following concepts of 'Evidence Triage/Preview.'
- ( ) Evidence triage may not be appropriate for all situations.
- (二) Evidence preview may miss items of evidentiary value.
- $(\Xi)$  Time and date stamps may be affected by the evidence triage/preview process on live systems.
- (四) An evidence preview/triage shall not take the place of a complete exam.

## Please explain the above issues in details.

Security assessments can be one of two types: a security audit (vulnerability assessment) or a penetration test. The security audit scans and tests a system or network for existing vulnerabilities but does not intentionally exploit any of them.
 A penetration test actively seeks to exploit vulnerabilities encountered on target systems or networks. This shows the potential consequences of a hacker breaking in through unpatched vulnerabilities.

Please translate the above paragraph into Chinese  $(15\ \%)$  , and list the pen test methodology.  $(10\ \%)$ 

### 三、解釋名詞:

- ( ) Deception Defense System
- (=) ICMP flooding
- (三) Pretty Good Privacy
- (四) Secure Electronic Commerce
- (五) Kerberos Authentication

### 四、請回答下列問題:

- (一)網路防火牆依功能可分為以下 3 種:(1)Packet Filter、(2)Application LevelGateway、(3) Circuit Level Gateway。請分別說明之。(15分)
- (二)當手機被植入竊聽軟體時,請說明如何查知與防制手機遭竊聽的方法。(10分)

所 别:資訊管理研究所

科 目:計算機概論

## 作答注意事項:

- 1.本試題共4題,每題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。
- Consider the mobile systems, the one of 3C applications in the computer sciences. Android operating system (AOS for short) is a stack of software components, which is divided into five categories and four main layers. Describe what the categories and layers of AOS are, in details.

二、

- (一) There are two restaurants next to each other. One has a sign that says, "good food is not cheap," and the other has a sign that says, "cheap food is not good," Are the two signs saying the same thing? Say the reasons in the formal rules, as your decision. (15 分)
- (=) Decide the two propositions as follows:

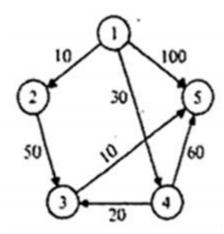
 $[(p \land q) \lor (p \land r)] \rightarrow s$ and

 $[p \lor (q \land r)] \lor s,$ 

which are equivalent or not. (10 分)

### 三、

( – ) Consider the directed graph in the following:



Please give the adjacent matrix for the directed graph. (12 分)

(二) Represent the directed graph as an adjacent list. Assume the numerical order on each list of adjacent vertices. (13分)

### 四、

- (一) Describe the functions of compiler and interpreter, respectively, in a computer system. (8分)
- (二) Please write the seven layers of Open Systems Interconnection (OSI) model and explain their functions in detail. (9分)
- ( $\Xi$ ) What are the functions of registers and cache in a computer system? (8分)

所 别:資訊管理研究所

科 目:電腦犯罪與資訊安全

- 1.本試題共4題,每題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、試申論電腦犯罪現場處理的內涵與注意事項。
- 二、解釋下列名詞:
  - 1、溢波抗辯
  - 2 · Zero Day Attack
  - 3 · Setuid (Set user id)
  - 4、數位憑證 (digital certificate)
  - 5 · Alternate Data Streams (ADS)

- □ A Denial of Service (DoS) attack is an attempt to make a system unavailable to the intended user(s), such as preventing access to a website. This is accomplished when an attacker successfully consumes all available network or system resources, usually resulting in a slowdown or server crash. In Figure 1, a Reflection DDoS attack occurs when attackers spoof their IP address to pose as the intended victim and then send legitimate requests to legitimate public-facing servers. The responses to these requests are sent to the intended victim and originate from legitimate servers.
  - (一) Please translate the above paragraph into Chinese. (15 分)
  - (二) Whenever multiple sources are coordinating in the DoS attack, it becomes known as a DDoS. How can an administrator do to stop DDoS attacks? (10 分)

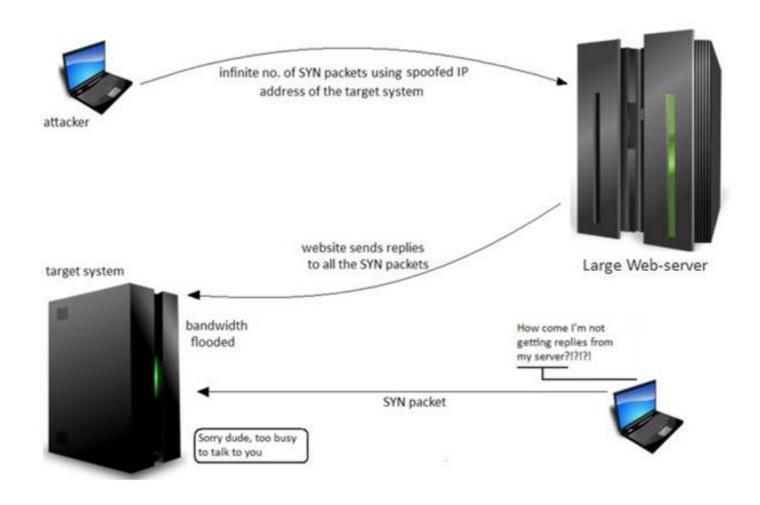


Figure 1: Reflection DDoS

- The dark web is part of the Internet that is not accessible through traditional means. It requires that you use a technology like Tor (The Onion Router) or I2P (Invisible Internet Project) in order to access websites, email or other services. The deep web is slightly different. It is simply all of the web pages, or websites that have not been crawled by a search engine, is hidden behind paywalls or requires a username and password to access.
  - (一) Please translate the above paragraph into Chinese. (15 分)
  - (二) What kinds of principles or strategies are suitable for law enforcement agents to investigate dark web crime? Please draw a Table or Figure to explain it. (10分)

所 别:資訊管理研究所

科 目:管理資訊系統

- 1.本試題共4題,每題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、解釋名詞 (每題5分,計25分)
  - ( ) Click and Mortar Model
  - (二) Machine Learning
  - (三) Blockchain
  - (四) Crime Pattern Analysis (CPA)
  - (五) Operational Data Store (ODS)

## 二、有關大數據(Big Data),回答下列問題:

(一) 將下列英文段落譯成繁體中文: (7分)

By now, many companies have decided that big data is not just a buzzword, but a new fact of business life -- one that requires having strategies in place for managing large volumes of both structured and unstructured data. And with the reality of big data comes the challenge of analyzing it in a way that brings real business value. Business and IT leaders who started by addressing big data management issues are now looking to use big data analytics to identify trends, detect patterns and glean other valuable findings from the sea of information available to them.

- (二)在處理大數據所使用到的資料表達結構可分為三種類型:結構 化、半結構化與非結構化等。試說明這三種類型的特性,並各 舉出一個實例來說明它們所擁有的特性。(6分)
- (三)在大數據分析上, trend 與 pattern 有何差異。(4分)
- (四)在處理大數據用的資料來源上,公開資料(Open Data)和文件 (Document)是主要的資料源,如法院裁判書或刑案移送書等。試寫出:(1)文字探勘(Text Mining)的定義;(2)如何運用該技術於警務治安之案件處理上。(8分)

# 三、請回答下列問題:

- (一)何謂區塊鏈(block chain)?(5分)
- (二)請說明區塊鏈如何運作?(10分)
- (三)請舉三個例子說明區塊鏈的應用。(10分)
- 四、常用的系統分析與設計技術有「結構化技術」及「物件導向技術」 兩種:
  - (一)請說明結構化技術。(12分)
  - (二)請說明物件導向技術。(13分)

所 别:各所

科 目:國文

## 作答注意事項:

- 1.本試題共2大題,每大題50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。
- 4. 請以橫式書寫作答。

## 壹、解釋下列語句之義:(每小題 10 分,共 50 分)

- 一、天子之所是未必是,天子之所非未必非,天子亦遂不敢自為非是, 而公其非是於學校。(黃宗羲《明夷待訪錄·學校》)
- 二、聞誅一夫紂矣,未聞弒君也。(《孟子·梁惠王下》)
- 三、不違農時,穀不可勝食也;數罟不入洿池,魚鼈不可勝食也;斧 斤以時入山林,材木不可勝用也。(《孟子·梁惠王上》)
- 四、子游曰:「事君數,斯辱矣;朋友數,斯疏矣。」(《論語·里仁》)
- 五、士方其佔畢咿唔,則期報於科第綠仕。或少讀古書,窺著作之林 則責報於遐邇之譽,後世之名。(曾國藩〈聖哲畫像記〉)

# 貳、論文:50分

《荀子·勸學》:「騏驥一躍,不能十步;駑馬十駕,功在不舍。」 請參酌前引古文之思想,以「學習與實踐」為題,書寫作文一篇。

所 别:各所

科 目:英文

## 作答注意事項:

1.本試題共4大題;共5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、 Vocabulary and Phrases ∶ (20 分)

1、年金改革

6、川普政府

2、化武攻擊

7、併排違停

3、檢調單位

8、保障人民權利

4、限制出境

9、促進社會進步

5、北韓政權

10、肇事逃逸責任

二、Translation:(30分)

(一)(中翻英):幫派份子從事犯罪活動,目的是要增加或維持聯盟的力量、 聲明或經濟財源,他們在聯盟內部會有加入或運作的規定,聯盟提供成員 身體上的保護,以抵禦其他罪犯或幫派,並致力對於特定地點或區域行使 其控制,以防衛利益不受對手侵犯。

(=) (English to Chinese): Buying drugs from a suspect is a direct means of gathering evidence. Undercover drug operations, though dangerous, is useful in identifying participants in drug conspiracies. Undercover officers should be intelligent, reliable, confident, and resourceful, and have good judgment and excellent communication skills.

- 三、Reading Comprehension: (20分)
- Qs 1-5: Closest in Meaning Test: Find the sentence that is closest in meaning to the one given for each question.
- 1. Police officers are prohibited from firing warning shots under any circumstances; police officers are also not permitted to shoot at a moving vehicle unless the vehicle being shot at is being used in an assault attempt.
  - (A) When their lives are threatened, police are authorized to fire warning shots.
  - (B) Police officers are never allowed to shoot at moving vehicles.
  - (C) Police officers can shoot at moving vehicles only if a police officer's life is threatened.
  - (D) Police officers can sometimes shoot at a moving vehicle.
- 2. "Law must be stable and yet it cannot stand still," means most nearly that
  - (A) law is a fixed body of subject matter.
  - (B) law must adapt itself to changing conditions.
  - (C) law is a poor substitute for justice.
  - (D) the true administration of justice is the firmest pillar of good government.
- 3. We must remember what happened in the past so that it will never happen again.
  - (A) If we could remember the past, it would not happen again.
  - (B) In order not to repeat the past, we should certainly not forget what happened then
  - (C) Since we all tend to forget what happened in the past, we do the same mistakes again.
  - (D) Those who couldn't remember what happened in the past were more likely to repeat it.

- 4. Because of his innocent face, it is difficult even today to believe he was a criminal although it had been certainly proven.
  - (A) Today it is possible to understand why people didn't want to believe that he was guilty as he had an innocent face.
  - (B) If it had been proven that he was guilty, they would believe that he was a criminal.
  - (C) It doesn't necessarily mean that criminals can't have an innocent look.
  - (D) Despite the fact that he was proven to be a criminal, his innocent face makes it difficult to believe that.
- 5. French is the only language other than English spoken on five continents.
  - (A) French and English are the only languages that are spoken on five continents.
  - (B) French and English are spoken widely in official and commercial circles.
  - (C) Before English, French was the only language spoken on five continents.
  - (D) Worldwide, French is the most widely taught second language after English.

### Qs 6-10: Based on the passage below, answer the questions that follow it.

Crime prevention through environmental design (CPTED) grew out of the concept of defensible space developed by an architect and urban planner. Sometimes referred to as designing out crime, it has become an important tool for police in assisting communities in crime prevention efforts. The theory is based on the belief that design of the physical environment can create opportunities for people to come together and at the same time can remove the opportunity for criminals to act freely. It does this by concentrating on a facility's design, landscaping, and security technology, including a combination of security and police personnel, to create a series of preventive measures that combine to reduce problems or disruptions to a facility. These same preventive measures are meant to provide a sense of confidence to the public that a location is secure.

CPTED is most cost-effective when included in original design plans because this saves the costs associated with renovating or moving existing facilities. An example of a CPTED-based renovation in a mall or a transit facility would be moving the payment

area of a parking lot where crimes have occurred closer to where it can be seen by general users or by the facility's security officer. In this case, the placement of the payment area increases safety through the environmental decision of moving it into a safer area. The same example in a new facility would require someone with knowledge of CPTED principles considering the placement of the payment area during the design phase so as to prevent having to move it later.

- 6. According to the passage, police departments are most likely to use CPTED when
  - (A) helping communities develop crime prevention strategies.
  - (B) looking for car thieves on city streets.
  - (C) designing new police stations.
  - (D) all of the above.
- 7. The passage states that CPTED was developed by
  - (A) police community relations units.
  - (B) parking lot developers.
  - (C) a master builder and municipal planner.
  - (D) private security directors.
- 8. Based on the passage, CPTED would be least useful when
  - (A) renovating a suburban train station.
  - (B) renovating a shopping mall.
  - (C) renovating a private residence.
  - (D) renovating a public-access interior courtyard in a museum.
- 9. According to the passage, CPTED is most cost-effective
  - (A) in renovations.
  - (B) in new construction.
  - (C) when combined with other uniformed patrol tactics.
  - (D) when combined with plainclothes patrol tactics.

- 10. As a police officer, you would most likely be expected to have a knowledge of CPTED as a
  - (A) homicide detective.
  - (B) crime prevention officer.
  - (C) crime scene investigator.
  - (D) stationhouse sergeant.

Write an essay on the topic: Stress Management in Law Enforcement

No job is immune from stress, but for the law enforcement officer, the strains and tensions experienced at work are unique, often extreme, and sometimes unavoidable. In your opinion, how to tackle this work-related stress? Write an essay on this issue.