# 中央警察大學 100 學年度碩士班入學考試試題

所　別：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。
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　　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、出處、去就、辭受、取與之辨，孔子、孟子之所恆言。（顧炎武＜與友人論學書＞）
　　二、惟其遇事而事治，畫策而利害得，治國而國安焉。（王安石＜材論＞）
　　三、聖人不積，既以為人己愈有，既以與人己愈多。（《老子·第八十一章》）
　　四、夫君子之行，靜以修身，儉以養德，非澹泊無以明志，非寧靜無以致遠。（諸葛亮＜誡子書＞）
　　五、李離曰：「理有法，失刑則刑，失死則死。公以臣能聽微決疑，故使為理。今過聽殺人，罪當死。」（《史記·循吏列傳》）

**貳、論文：50 分**
　　語云：「克己可以治怒，明理可以治懼。」試論之。

# 中央警察大學 101 學年度碩士班入學考試試題

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## 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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## 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
　　酌前引古文思想，以「危機管理中的情緒管理」為題，書寫論文一
　　篇。

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## 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。

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　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。視民不恌，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，足以諛聞，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。

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## 一、 Vocabulary and Phrases translation(中翻英、英翻中)：(20 分)

（一） 擒拿術
（二） 落地簽證
（三） 驅逐出境
（四） 未成年者
（五） 緩刑
（六） an extortion ring
（七） Internet auction fraud
（八） reckless motorcyclists
（九） (to) conduct an impartial investigation
（十） large-scale nuclear incidents

## 二、Passage Translation：(30 分)

（Ⅰ）Please translate the following passage into correct Chinese：

　　　In 1999, a teenage girl was taken from a Haitian orphanage and smuggled — using fake documentation — into Miami, where she was forced to work as a domestic servant for up to 15 hours a day, seven days a week.　She was never paid, not allowed to go to school, occasionally beaten, and subjected to other inhumane treatment.　After suffering for nearly six years, she managed to escape in 2005.　This March, justice was finally served when three of her captors were convicted in the case.　This is just one of hundreds of heart-breaking human trafficking cases the FBI investigates each year.

（Ⅱ）Please translate the following passage into correct English：

　　　一般人相信，要保持健康，人們應該盡量避免生活中的壓力源。然而，這種策略效果有限。想避免壓力也可能導致人們避免人生中有意義的改變，諸如工作的改變或升遷。此外，試圖去避免壓力通常也不切實際。舉例而言，一個人怎能避免生命中父母親過世的打擊？事實上，假如人們不去面對人生中的一些壓力，到頭來終將覺得無聊和缺乏刺激，這對身體也可能有害。

## 三、Reading Comprehension：(20 分)

**David:**

　　　**I'll be away for a week but my grandfather will let you in to use the computer. There are a few things you need to know. Brian Lee will call on Tuesday night and ask for information on our class science project. Please see the appropriately labeled files in the folder of that name in My Documents. He will ask you some specific questions and you may answer, but giving him any numerical information from the "SCIPorjData" file is something we might regret later, because we don't want other teams to copy our data.**

　　　**Also, I've had some trouble with the computer recently. I wanted to get it fixed last**

week but had no time. There are unexpected crashes about once an hour and mysteriously deleted files around once a week, so back everything up on an ongoing basis. The best way is just to burn it onto a CD after you finish working each day, but save your work every five minutes or so to avoid losing it in a crash.

One last thing: Go ahead and download music if you want but don't add any new names to the approved lists for my peer-to-peer music sharing software. I don't want strangers poking through my computer.

Have fun!

Jerry

1. What is the relationship between David and Jerry?
   Choose the most likely answer from the choices below.
   （A）They are brothers.　　　　　　　（B）They are co-workers.
   （C）They are classmates.　　　　　　（D）They are co-workers of Brian Lee　　　　.

2. How often should David save files he's working on?
   （A）Each day　　　　　　　　　　　（B）Every hour
   （C）Every week　　　　　　　　　　（D）Every five minutes

3. Which of the following isn't correct?
   （A）Brian Lee mustn't be put on the approved list.
   （B）Brian Lee can have some information about the science project.
   （C）David hasn't had his computer fixed recently.
   （D）The "SCIPorjData" file has a lot of numbers in it.

Every year in Nepal, young men answer a call to recruitment for one of the most feared and respected groups of soldiers in the world – the Gurkhas. On a typical year, 28,000 will come, yet only about 230 will be chosen to join the ranks of some 3,500 elite soldiers. Surprisingly, these soldiers fight not for their own country, but for the United Kingdom.

During the time of British domination of the Indian subcontinent, British soldiers encountered many stubborn enemies, though few as tough and warlike as the Gurkhas. After the Anglo-Nepali war (1812-1815) the British, so impressed by their adversaries, recruited several regiments of Gurkha soldiers to join the colonial army. They have not regretted this decision, as the Gurkhas' incredible toughness, ferocity and loyalty have won them great respect and many formal honors in numerous conflicts across the world.

Thus, the British Army maintains the Brigade of Gurkhas to this day, although its soldiers are all Nepalese citizens. In recent years, however, there have been signs of strain in the relationship. This is due to the growing controversy <u>surrounding</u> the disparity in pay between the Gurkhas and regular UK servicemen, with the later making far more money than the former.

4. Why is there growing strain in the relationship between the Gurkhas and the British Army?
   （A）The Gurkhas make more money than the regular UK servicemen.
   （B）The Gurkhas make less money than the regular UK servicemen.
   （C）The Gurkhas are Nepalese but serve in the British Army.
   （D）Not enough Gurkhas are chosen from among the potential recruits.

5. The word "surrounding" is underlined to mean …
   （A）On all sides　　　　　　　　　　（B）Close to
   （C）Between　　　　　　　　　　　　（D）About

6. Which of the following is true?
   （A）Only 230 out 3,500 recruits are selected annually.
   （B）Only 3,500 out of 28,000 recruits are rejected annually.
   （C）Only 230 out 28,000 recruits are selected annually.
   （D）Of 28,000, approximately 230 are rejected annually.

7. Which of the following would be the best title for this article?
 （A）The Soldiers of Nepal     （B）A History of the Gurkhas
 （C）The Gurkhas, Fierce and Loyal Soldiers（D）Money Problems in the British Army

  **A seized goods auction sale will take place at 8 AM on Friday, December 10<sup>th</sup> at the Yellow Dog Fairground in Carleton Place Township. The fairground is located on Highway 15 just north of the town center. For sale by auction will be light trucks, SUVs, sedans, motorcycles and off-road vehicles. Most of these approximately 800 vehicles have been judicially confiscated for use in federal crimes. Others have been repossessed for failure to meet the payment schedule. All vehicles have been given basic overall mechanical appraisal and repairs. They have also been cleaned and are free from all stains and illegal materials.**

  **All interested members of the public 18 years old and above are invited to the fairground at the above time and place. All potential buyers must register in advance of the auction and may do so on-site or through our website, www.CPpolice.gov. Registration must be completed before 8 AM. Bidders must have credit cards with verifiable limits above the sale price, or pay by cash or cashier's check. Security at the site will be provided by the Carleton Place Sheriff's department. To view our catalogue, please see our website.**

8. Why are most of these vehicles being offered for sale?
 Choose the best possible answer from the choices below.
 （A）Because there is an auction.
 （B）Because they were confiscated from rich people.
 （C）Because they were used in crimes.
 （D）Because they were too expensive for the police.

9. What is something that ISN'T required in order to participate in the auction?
 （A）Prove of age      （B）Knowledge of vehicles
 （C）Advanced registration    （D）The necessary funds

10. The word "fairground" used repeatedly in the article is closest in meaning to which of the following definitions?
 （A）Police-owned land
 （B）A place where the prices are fair
 （C）A place where dogs can live
 （D）Open space used for exhibitions and similar events

## 四、**Essay：(30 分)**

 Plan and write an essay on "**What Makes What You Are Today？**"

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所　別：各所　　　　　　　　　　　　　　　　　　　　　　　英文 1

科　目：英文

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一、　Vocabulary：(20 分)

1. _____ is the pat-down of a person's outer clothing after a stop to see if the suspect has a weapon or something that feels like a weapon, which can be seized by the officer.
   （A）Search （B）Arrest
   （C）Frisk （D）Crack-down

2. Sharp objects and flammable items are _____ on the aircraft.
   （A）prohibited （B）promoted
   （C）admitted （D）permitted

3. _____ is the crime of deceiving people in order to gain something such as money or goods.
   （A）Piracy （B）Murder
   （C）Larceny （D）Fraud

4. Technical curricula are <u>requisite</u> in a wide range of fields.
   （A）assimilated （B）promoted
   （C）demanded （D）acquired

5. The expansion of public services has caused concern that the civil service branches are becoming <u>autonomous</u> powers.
   （A）independent （B）advanced
   （C）superior （D）perilous

6. Crowd behavior is characterized as a <u>spontaneous</u> collective reaction to a publicly observed event.
   （A）chaotic （B）gratifying
   （C）instinctive （D）uninterrupted

7. Because of his <u>novel</u> approaches to scientific problems, Edison was able to patent dozens of inventions.
   （A）original （B）varied
   （C）coherent （D）unbiased

8. The fire salamander is so called because of an <u>antiquated</u> belief that it could withstand fire.
   （A）well-developed （B）old-fashioned
   （C）carefully fabricated （D）widely held

9. The engineer had a _____ reason for changing the design of the building.
   （A）peculiar （B）legitimate
   （C）sharp （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. <u>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.</u>

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. Which president established the EPA?
   （A）Roosevelt 　　　　　　　　（B）Clinton
   （C）Nixon 　　　　　　　　　　（D）Obama
5. The word **spearheaded** in the passage is closest in meaning to
   （A）led 　　　　　　　　　　　（B）inspired
   （C）conceived 　　　　　　　　（D）modified
6. According to paragraph 4, what was a common criticism of the environmental 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. According to the passage, what effect did the criticism of the environmental 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 movement.
8. Which of the sentences below best expresses the essential information in the underlined

sentence in the passage?

（A）Critics of the movement were successful in dissuading many environmentalists from supporting some of the more drastic measures that had been suggested by questioning the quantitative methods they employed.

（B）Opponents of the environmental protection movement succeeded in getting the activists to take another, more objective, approach to substantiating their claims.

（C）People who disagreed with the environmentalists eventually were able to persuade many that the methods employed by the environmental movement were invalid and their conclusion incorrect.

（D）Members of environmental groups were reluctant to employ quantitative methods in assessing environmental damage because they felt the results might not substantiate their claims.

9. The word **dire** in the passage is closest in meaning to

（A）unrealized　　　　　　　　　　（B）possible

（C）grave　　　　　　　　　　　　（D）imaginary

10. The word **dissent** in the passage is closest in meaning to

（A）opposition　　　　　　　　　　（B）support

（C）indifference　　　　　　　　　　（D）ambivalence

四、Essay：(30 分)

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

# 中央警察大學 102 學年度碩士班入學考試試題

英文 1

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。

## 一、 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. 自白 | 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 words</u> and <u>no more than 200 words</u>.

### How to Create an Anti-Graft Society

# 中央警察大學 103 學年度碩士班入學考試試題

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。

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？

# 中央警察大學 104 學年度碩士班入學考試試題

所　別：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 no less than 100 words and no more than 200 words.

**"Mobile Police Station" and its Impacts**

# 中央警察大學 100 學年度碩士班入學考試試題

所　別：交通管理研究所
科　目：交通統計

作答注意事項：
　1. 本試題共 4 題，每題各占 25 分；共 6 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、內政部警政署交通組欲瞭解員警處理交通事故所需時間，共抽樣調查280件事故處理所花時間的次數分配如下表，試在$\alpha=0.05$檢定員警交通事故處理時間分配是否為常態分配？

| 分鐘 | 40~50 | 50~60 | 60~70 | 70~80 | 80~90 |
|------|-------|-------|-------|-------|-------|
| 件數 | 43 | 74 | 67 | 60 | 36 |

二、為比較國道一號與國道三號高速公路車輛違規超速情形是否相同，從兩條高速公路抽取數處雷達測速紀錄，得其違規超速件數如下：

| 地點 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 國道一號 | 603 | 533 | 463 | 550 | 433 | 600 | 496 | 512 | 544 |
| 國道三號 | 575 | 572 | 604 | 555 | 497 | 589 | 615 | 617 | |

　(a) 請檢定國道一號與國道三號高速公路之母體變異數是否相同？($\alpha=0.05$)
　(b) 試分別以 t 分配與 F 分配檢定國道一號與國道三號兩條高速公路違規超速情形是否相同？($\alpha=0.05$)

三、(a)假設常態分配 (normal distribution) $X = N(\mu, \sigma^2)$，求動差生成函數

(moment generating function) $m_X(t)$　　(13 分)

(b)假設隨機變數(random variable) X 和 Y 獨立(independent)，證明

$m_{X+Y}(t) = m_X(t) m_Y(t)$　　(7 分)

(c)假設 X 和 Y 獨立，$X = N(\mu_1, \sigma_1^2)$，$Y = N(\mu_2, \sigma_2^2)$，證明 $X + Y$ 服從 $N(\mu_1 + \mu_2, \sigma_1^2 + \sigma_2^2)$　　(5 分)

四、隨機變數 (random variable) X 的期望值 (expected value, mean, 平均數) $\mu$ 及變異數 (variance) $\sigma^2$, $X_1, \ldots, X_n$ 為一組隨機樣本 (random sample, $X_1, \ldots, X_n$ 彼此獨立，具有相同機率分配)

(a)定義樣本平均數　　(3 分)

(b)定義樣本變異數　　(5 分)

(c)證明樣本平均數是 $\mu$ 的不偏估計量 (unbiased estimator)　　(5 分)

(d)證明樣本變異數是 $\sigma^2$ 的不偏估計量 (unbiased estimator) (12 分)

# 附表 1－卡方分配表



$0$ $\chi^2$
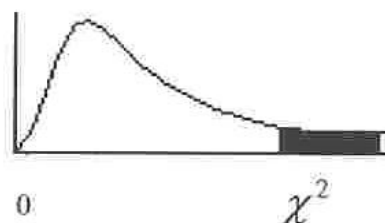
| 自由度 | 卡方分配底下之右尾面積 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | .995 | .990 | .975 | .950 | .900 | .100 | .050 | .025 | .010 | .005 |
| 1 | 0.000 | 0.000 | 0.001 | 0.004 | 0.016 | 2.706 | 3.841 | 5.024 | 6.635 | 7.878 |
| 2 | 0.010 | 0.020 | 0.051 | 0.103 | 0.211 | 4.605 | 5.991 | 7.378 | 9.210 | 10.597 |
| 3 | 0.072 | 0.115 | 0.216 | 0.352 | 0.584 | 6.251 | 7.815 | 9.348 | 11.345 | 12.838 |
| 4 | 0.207 | 0.297 | 0.484 | 0.711 | 1.064 | 7.779 | 9.488 | 11.143 | 13.277 | 14.860 |
| 5 | 0.412 | 0.554 | 0.831 | 1.145 | 1.610 | 9.236 | 11.070 | 12.833 | 15.086 | 16.750 |
| 6 | 0.676 | 0.872 | 1.237 | 1.635 | 2.204 | 10.645 | 12.592 | 14.449 | 16.812 | 18.548 |
| 7 | 0.989 | 1.239 | 1.690 | 2.167 | 2.833 | 12.017 | 14.067 | 16.013 | 18.475 | 20.278 |
| 8 | 1.344 | 1.646 | 2.180 | 2.733 | 3.490 | 13.362 | 15.507 | 17.535 | 20.090 | 21.955 |
| 9 | 1.735 | 2.088 | 2.700 | 3.325 | 4.168 | 14.684 | 16.919 | 19.023 | 21.666 | 23.589 |
| 10 | 2.156 | 2.558 | 3.247 | 3.940 | 4.865 | 15.987 | 18.307 | 20.483 | 23.209 | 25.188 |
| 11 | 2.603 | 3.053 | 3.816 | 4.575 | 5.578 | 17.275 | 19.675 | 21.920 | 24.725 | 26.757 |
| 12 | 3.074 | 3.571 | 4.404 | 5.226 | 6.304 | 18.549 | 21.026 | 23.337 | 26.217 | 28.300 |
| 13 | 3.565 | 4.107 | 5.009 | 5.892 | 7.042 | 19.812 | 22.362 | 24.736 | 27.688 | 29.819 |
| 14 | 4.075 | 4.660 | 5.629 | 6.571 | 7.790 | 21.064 | 23.685 | 26.119 | 29.141 | 31.319 |
| 15 | 4.601 | 5.229 | 6.262 | 7.261 | 8.547 | 22.307 | 24.996 | 27.488 | 30.578 | 32.801 |
| 16 | 5.142 | 5.812 | 6.908 | 7.962 | 9.312 | 23.542 | 26.296 | 28.845 | 32.000 | 34.267 |
| 17 | 5.697 | 6.408 | 7.564 | 8.672 | 10.088 | 24.769 | 27.587 | 30.191 | 33.409 | 35.718 |
| 18 | 6.265 | 7.018 | 8.231 | 9.390 | 10.865 | 25.989 | 28.869 | 31.526 | 34.805 | 37.156 |
| 19 | 6.844 | 7.633 | 8.907 | 10.117 | 11.651 | 27.204 | 30.144 | 32.852 | 36.191 | 38.587 |
| 20 | 7.434 | 8.260 | 9.591 | 10.851 | 12.443 | 28.412 | 31.410 | 34.170 | 37.566 | 39.997 |
| 21 | 8.034 | 8.897 | 10.283 | 11.591 | 13.240 | 29.615 | 32.671 | 35.479 | 38.932 | 41.401 |
| 22 | 8.643 | 9.542 | 10.982 | 12.338 | 14.041 | 30.813 | 33.924 | 36.781 | 40.289 | 42.796 |
| 23 | 9.260 | 10.196 | 11.689 | 13.091 | 14.848 | 32.007 | 35.172 | 38.076 | 41.638 | 44.181 |
| 24 | 9.886 | 10.856 | 12.401 | 13.848 | 15.659 | 33.196 | 36.415 | 39.364 | 42.980 | 45.559 |
| 25 | 10.520 | 11.524 | 13.120 | 14.611 | 16.473 | 34.382 | 37.652 | 40.646 | 44.314 | 46.928 |
| 26 | 11.160 | 12.198 | 13.844 | 15.379 | 17.292 | 35.563 | 38.885 | 41.923 | 45.642 | 48.290 |
| 27 | 11.808 | 12.879 | 14.573 | 16.151 | 18.114 | 36.741 | 40.113 | 43.195 | 46.963 | 49.645 |
| 28 | 12.461 | 13.565 | 15.308 | 16.928 | 18.939 | 37.916 | 41.337 | 44.461 | 48.278 | 50.993 |
| 29 | 13.121 | 14.256 | 16.047 | 17.708 | 19.768 | 39.087 | 42.557 | 45.722 | 49.588 | 52.330 |
| 30 | 13.787 | 14.953 | 16.791 | 18.493 | 20.599 | 40.256 | 43.773 | 46.979 | 50.892 | 53.672 |
| 40 | 20.707 | 22.164 | 24.433 | 26.509 | 29.051 | 51.805 | 55.58 | 59.342 | 63.691 | 66.766 |
| 50 | 27.991 | 29.707 | 32.357 | 34.764 | 37.689 | 63.167 | 67.505 | 71.420 | 76.154 | 79.490 |
| 60 | 35.534 | 37.485 | 40.482 | 43.188 | 46.459 | 74.397 | 79.082 | 83.298 | 88.379 | 91.952 |
| 70 | 43.275 | 45.442 | 48.758 | 51.739 | 55.329 | 85.527 | 90.531 | 95.023 | 100.425 | 104.215 |
| 80 | 51.172 | 53.540 | 57.153 | 60.391 | 64.278 | 96.578 | 101.879 | 106.629 | 112.329 | 116.321 |
| 90 | 59.196 | 61.754 | 65.647 | 69.126 | 73.291 | 107.565 | 113.145 | 118.136 | 124.116 | 128.299 |
| 100 | 67.328 | 70.065 | 74.222 | 77.929 | 82.358 | 118.498 | 124.342 | 129.561 | 135.807 | 140.169 |

# 附表 2 - t 分配表

t－分配右尾百分點 $t_\alpha(d.f.)$
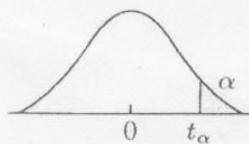
| d.f. | .25 | .1 | .05 | .025 | .01 | .005 |
|------|-----|-----|-----|-----|-----|-----|
| 1 | 1.000 | 3.078 | 6.314 | 12.706 | 31.821 | 63.657 |
| 2 | .816 | 1.886 | 2.920 | 4.303 | 6.965 | 9.925 |
| 3 | .765 | 1.638 | 2.353 | 3.182 | 4.541 | 5.841 |
| 4 | .741 | 1.533 | 2.132 | 2.776 | 3.747 | 4.604 |
| 5 | .727 | 1.476 | 2.015 | 2.571 | 3.365 | 4.032 |
| 6 | .718 | 1.440 | 1.943 | 2.447 | 3.143 | 3.707 |
| 7 | .711 | 1.415 | 1.895 | 2.365 | 2.998 | 3.499 |
| 8 | .706 | 1.397 | 1.860 | 2.306 | 2.896 | 3.355 |
| 9 | .703 | 1.383 | 1.833 | 2.262 | 2.821 | 3.250 |
| 10 | .700 | 1.372 | 1.812 | 2.228 | 2.764 | 3.169 |
| 11 | .697 | 1.363 | 1.796 | 2.201 | 2.718 | 3.106 |
| 12 | .695 | 1.356 | 1.782 | 2.179 | 2.681 | 3.055 |
| 13 | .694 | 1.350 | 1.771 | 2.160 | 2.650 | 3.012 |
| 14 | .692 | 1.345 | 1.761 | 2.145 | 2.624 | 2.977 |
| 15 | .691 | 1.341 | 1.753 | 2.131 | 2.602 | 2.947 |
| 16 | .690 | 1.337 | 1.746 | 2.120 | 2.583 | 2.921 |
| 17 | .689 | 1.333 | 1.740 | 2.110 | 2.567 | 2.898 |
| 18 | .688 | 1.330 | 1.734 | 2.101 | 2.552 | 2.878 |
| 19 | .688 | 1.328 | 1.729 | 2.093 | 2.539 | 2.861 |
| 20 | .687 | 1.325 | 1.725 | 2.086 | 2.528 | 2.845 |
| 21 | .686 | 1.323 | 1.721 | 2.080 | 2.518 | 2.831 |
| 22 | .686 | 1.321 | 1.717 | 2.074 | 2.508 | 2.819 |
| 23 | .685 | 1.319 | 1.714 | 2.069 | 2.500 | 2.807 |
| 24 | .685 | 1.318 | 1.711 | 2.064 | 2.492 | 2.797 |
| 25 | .684 | 1.316 | 1.708 | 2.060 | 2.485 | 2.787 |
| 26 | .684 | 1.315 | 1.706 | 2.056 | 2.479 | 2.779 |
| 27 | .684 | 1.314 | 1.703 | 2.052 | 2.473 | 2.771 |
| 28 | .683 | 1.313 | 1.701 | 2.048 | 2.467 | 2.763 |
| 29 | .683 | 1.311 | 1.699 | 2.045 | 2.462 | 2.756 |
| 30 | .683 | 1.310 | 1.697 | 2.042 | 2.457 | 2.750 |
| 40 | .681 | 1.303 | 1.684 | 2.021 | 2.423 | 2.704 |
| 60 | .679 | 1.296 | 1.671 | 2.000 | 2.390 | 2.660 |
| 120 | .677 | 1.289 | 1.658 | 1.980 | 2.358 | 2.617 |
| ∞ | .674 | 1.282 | 1.645 | 1.960 | 2.326 | 2.576 |

## 附表 3－ 常態分配表

交通統計 5
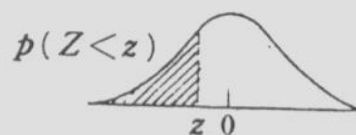


| z | .00 | .01 | .02 | .03 | .04 | .05 | .06 | .07 | .08 | .09 |
|---|---|---|---|---|---|---|---|---|---|---|
| −3.5 | .0002 | .0002 | .0002 | .0002 | .0002 | .0002 | .0002 | .0002 | .0002 | .0002 |
| −3.4 | .0003 | .0003 | .0003 | .0003 | .0003 | .0003 | .0003 | .0003 | .0003 | .0002 |
| −3.3 | .0005 | .0005 | .0005 | .0004 | .0004 | .0004 | .0004 | .0004 | .0004 | .0003 |
| −3.2 | .0007 | .0007 | .0006 | .0006 | .0006 | .0006 | .0006 | .0005 | .0005 | .0005 |
| −3.1 | .0010 | .0009 | .0009 | .0009 | .0008 | .0008 | .0008 | .0008 | .0007 | .0007 |
| −3.0 | .0013 | .0013 | .0013 | .0012 | .0012 | .0011 | .0011 | .0011 | .0010 | .0010 |
| −2.9 | .0019 | .0018 | .0018 | .0017 | .0016 | .0016 | .0015 | .0015 | .0014 | .0014 |
| −2.8 | .0026 | .0025 | .0024 | .0023 | .0023 | .0022 | .0021 | .0021 | .0020 | .0019 |
| −2.7 | .0035 | .0034 | .0033 | .0032 | .0031 | .0030 | .0029 | .0028 | .0027 | .0026 |
| −2.6 | .0047 | .0045 | .0044 | .0043 | .0041 | .0040 | .0039 | .0038 | .0037 | .0036 |
| −2.5 | .0062 | .0060 | .0059 | .0057 | .0055 | .0054 | .0052 | .0051 | .0049 | .0048 |
| −2.4 | .0082 | .0080 | .0078 | .0075 | .0073 | .0071 | .0069 | .0068 | .0066 | .0064 |
| −2.3 | .0107 | .0104 | .0102 | .0099 | .0096 | .0094 | .0091 | .0089 | .0087 | .0084 |
| −2.2 | .0139 | .0136 | .0132 | .0129 | .0125 | .0122 | .0119 | .0116 | .0113 | .0110 |
| −2.1 | .0179 | .0174 | .0170 | .0166 | .0162 | .0158 | .0154 | .0150 | .0146 | .0143 |
| −2.0 | .0228 | .0222 | .0217 | .0212 | .0207 | .0202 | .0197 | .0192 | .0188 | .0183 |
| −1.9 | .0287 | .0281 | .0274 | .0268 | .0262 | .0256 | .0250 | .0244 | .0239 | .0233 |
| −1.8 | .0359 | .0351 | .0344 | .0336 | .0329 | .0322 | .0314 | .0307 | .0301 | .0294 |
| −1.7 | .0446 | .0436 | .0427 | .0418 | .0409 | .0401 | .0392 | .0384 | .0375 | .0367 |
| −1.6 | .0548 | .0537 | .0526 | .0516 | .0505 | .0495 | .0485 | .0475 | .0465 | .0455 |
| −1.5 | .0668 | .0655 | .0643 | .0630 | .0618 | .0606 | .0594 | .0582 | .0571 | .0559 |
| −1.4 | .0808 | .0793 | .0778 | .0764 | .0749 | .0735 | .0721 | .0708 | .0694 | .0681 |
| −1.3 | .0968 | .0951 | .0934 | .0918 | .0901 | .0885 | .0869 | .0853 | .0838 | .0823 |
| −1.2 | .1151 | .1131 | .1112 | .1093 | .1075 | .1056 | .1038 | .1020 | .1003 | .0985 |
| −1.1 | .1357 | .1335 | .1314 | .1292 | .1271 | .1251 | .1230 | .1210 | .1190 | .1170 |
| −1.0 | .1587 | .1562 | .1539 | .1515 | .1492 | .1469 | .1446 | .1423 | .1401 | .1379 |
| −.9 | .1841 | .1814 | .1788 | .1762 | .1736 | .1711 | .1685 | .1660 | .1635 | .1611 |
| −.8 | .2119 | .2090 | .2061 | .2033 | .2005 | .1977 | .1949 | .1922 | .1894 | .1867 |
| −.7 | .2420 | .2389 | .2358 | .2327 | .2297 | .2266 | .2236 | .2206 | .2177 | .2148 |
| −.6 | .2743 | .2709 | .2676 | .2643 | .2611 | .2578 | .2546 | .2514 | .2483 | .2451 |
| −.5 | .3085 | .3050 | .3015 | .2981 | .2946 | .2912 | .2877 | .2843 | .2810 | .2776 |
| −.4 | .3446 | .3409 | .3372 | .3336 | .3300 | .3264 | .3228 | .3192 | .3156 | .3121 |
| −.3 | .3821 | .3783 | .3745 | .3707 | .3669 | .3632 | .3594 | .3557 | .3520 | .3483 |
| −.2 | .4207 | .4168 | .4129 | .4090 | .4052 | .4013 | .3974 | .3936 | .3897 | .3859 |
| −.1 | .4602 | .4562 | .4522 | .4483 | .4443 | .4404 | .4364 | .4325 | .4286 | .4247 |
| −.0 | .5000 | .4960 | .4920 | .4880 | .4840 | .4801 | .4761 | .4721 | .4681 | .4641 |

# 附表 4 - F 分配表
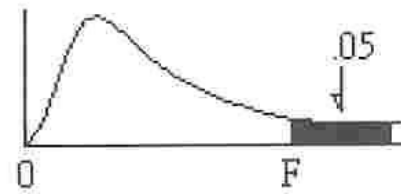
| $\alpha$ =0.05 | 分子自由度 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 | 161.5 | 199.5 | 215.7 | 224.6 | 230.2 | 234.0 | 236.8 | 238.9 | 240.5 | 241.9 |
| 2 | 18.51 | 19.00 | 19.16 | 19.25 | 19.30 | 19.33 | 19.35 | 19.37 | 19.38 | 19.40 |
| 3 | 10.13 | 9.55 | 9.28 | 9.12 | 9.01 | 8.94 | 8.89 | 8.85 | 8.81 | 8.79 |
| 4 | 7.71 | 6.94 | 6.59 | 6.39 | 6.26 | 6.16 | 6.09 | 6.04 | 6.00 | 5.96 |
| 5 | 6.61 | 5.79 | 5.41 | 5.19 | 5.05 | 4.95 | 4.88 | 4.82 | 4.77 | 4.74 |
| 6 | 5.99 | 5.14 | 4.76 | 4.53 | 4.39 | 4.28 | 4.21 | 4.15 | 4.10 | 4.06 |
| 7 | 5.59 | 4.74 | 4.35 | 4.12 | 3.97 | 3.87 | 3.79 | 3.73 | 3.68 | 3.64 |
| 8 | 5.32 | 4.46 | 4.07 | 3.84 | 3.69 | 3.58 | 3.50 | 3.44 | 3.69 | 3.35 |
| 9 | 5.12 | 4.26 | 3.86 | 3.63 | 3.48 | 3.37 | 3.29 | 3.23 | 3.18 | 3.14 |
| 10 | 4.96 | 4.10 | 3.71 | 3.48 | 3.33 | 3.22 | 3.14 | 3.07 | 3.02 | 2.98 |
| 11 | 4.84 | 3.98 | 3.59 | 3.36 | 3.20 | 3.09 | 3.01 | 2.95 | 2.90 | 2.85 |
| 12 | 4.75 | 3.89 | 3.49 | 3.26 | 3.11 | 3.00 | 2.91 | 2.85 | 2.80 | 2.75 |
| 13 | 4.67 | 3.81 | 3.41 | 3.18 | 3.03 | 2.92 | 2.83 | 2.77 | 2.71 | 2.67 |
| 14 | 4.60 | 3.74 | 3.34 | 3.11 | 2.96 | 2.85 | 2.76 | 2.70 | 2.65 | 2.60 |
| 15 | 4.54 | 3.68 | 3.29 | 3.06 | 2.90 | 2.79 | 2.71 | 2.61 | 2.59 | 2.54 |
| 16 | 4.49 | 3.63 | 3.24 | 3.01 | 2.85 | 2.74 | 2.66 | 2.59 | 2.54 | 2.49 |
| 17 | 4.45 | 3.59 | 3.20 | 2.96 | 2.81 | 2.70 | 2.61 | 2.55 | 2.49 | 2.45 |
| 18 | 4.41 | 3.55 | 3.16 | 2.93 | 2.77 | 2.66 | 2.58 | 2.51 | 2.46 | 2.41 |
| 19 | 4.38 | 3.52 | 3.13 | 2.90 | 2.74 | 2.63 | 2.54 | 2.48 | 2.42 | 2.38 |
| 20 | 4.35 | 3.49 | 3.10 | 2.87 | 2.71 | 2.60 | 2.51 | 2.45 | 2.39 | 2.35 |
| 21 | 4.32 | 3.47 | 3.07 | 2.84 | 2.68 | 2.57 | 2.49 | 2.42 | 2.37 | 2.32 |
| 22 | 4.30 | 3.44 | 3.05 | 2.82 | 2.66 | 2.55 | 2.46 | 2.40 | 2.34 | 2.30 |
| 23 | 4.28 | 3.42 | 3.03 | 2.80 | 2.64 | 2.53 | 2.44 | 2.37 | 2.32 | 2.27 |
| 24 | 4.26 | 3.40 | 3.01 | 2.78 | 2.62 | 2.51 | 2.42 | 2.36 | 2.30 | 2.25 |
| 25 | 4.24 | 3.39 | 2.99 | 2.76 | 2.60 | 2.49 | 2.40 | 2.34 | 2.28 | 2.24 |
| 30 | 4.17 | 3.32 | 2.92 | 2.69 | 2.53 | 2.42 | 2.33 | 2.27 | 2.21 | 2.16 |
| 40 | 4.08 | 3.23 | 2.84 | 2.61 | 2.45 | 2.34 | 2.25 | 2.18 | 2.12 | 2.08 |
| 50 | 4.03 | 3.18 | 2.79 | 2.56 | 2.40 | 2.29 | 2.20 | 2.13 | 2.07 | 2.03 |
| 100 | 3.94 | 3.07 | 2.70 | 2.46 | 2.31 | 2.19 | 2.10 | 2.03 | 1.97 | 1.93 |

（分母自由度）

# 中央警察大學 101 學年度碩士班入學考試試題

所　別：交通管理研究所
科　目：交通統計

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、假設A1道路交通事故的發生，屬於波氏（Poisson）分配，某警察分局轄區一年共發生12件A1，(1)請問一個月的平均數及其標準差為多少？(2)繪製一個月發生件數的機率分配圖；(3)請問該轄區一個月會發生A1事故超過三件的機率為多少？（25分）

二、若在一定的條件下每人飲用一定比例的酒量，身體酒精濃度呈常態分配，今隨機實驗6名，得血液酒精濃度為：45　40　51　55　59　50（mg/dl），請估計母體平均數（平均血液酒精濃度）與母體變異數的95%信賴區間，並繪製兩者之抽樣分配圖。參考數值：$Z_{0.05}$=1.645、$Z_{0.025}$=1.96、 $t_{0.05(5)}$=2.015、 $t_{0.025(5)}$=2.571、 $\chi^2_{0.025(5)}$=12.8325、$\chi^2_{0.975(5)}$=0.8312（25分）

三、今於某公路隧道內之某地點，連續記錄3分鐘所有車輛通過內車道參考線(reference line)的時間（單位：秒）如下：1.07, 4.06, 10.00, 12.15, 16.12, 20.36, 26.06, 35.24, 39.00, 42.01, 48.36, 51.20, 55.06, 59.11, 61.18, 64.51, 66.77, 70.32, 73.39, 76.25, 79.32, 81.11, 87.17, 98.85, 102.10, 107.90, 109.95, 113.45, 114.76, 117.10, 119.22, 121.12, 131.24, 137.11, 144.23, 153.17, 155.23, 158.29, 163.29, 172.30, 175.60, 179.65

（一）請以2秒為組距，製作這些車輛的到達時間間隔(time headway)之統計表。(6分)

（二）請計算調查時段內車輛之到達時間間隔（秒／車）的平均值（mean）、中位數（median）、變異數（variance）及變異係數（coefficient of variation）。（12分）

（三）請計算車輛到達率（arrival rate）並說明其意義。（7分）

四、試說明單因子（One-way）變異數分析（Analysis of Variances, ANOVA）方法之基本假設，並舉一例說明其於交通運輸領域之應用（包括問題描述、變數定義、虛無假設與對立假設、檢定量之計算與決策法則）。（25分）

# 中央警察大學 102 學年度碩士班入學考試試題

交通統計

所　別：交通管理研究所
科　目：交通統計

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、請問T檢定（T-test）主要是要檢驗什麼？卡方檢定（Chi-square test）
　　主要是要檢驗什麼？請各舉一可適用之交通實務案例說明之。

二、某市停車管理處欲瞭解該市路邊停車狀況，特選定某條路段進行調
　　查，該路段收費停車格的停車狀況如下表所示：

| 停車時間（$x$）<br>（分鐘） | 車輛數 |
| --- | --- |
| $0 < x \le 5$ | 29 |
| $5 < x \le 10$ | 29 |
| $10 < x \le 15$ | 13 |
| $15 < x \le 20$ | 4 |
| $20 < x \le 25$ | 4 |
| $25 < x \le 30$ | 2 |
| $30 < x \le 35$ | 1 |
| $60 < x \le 65$ | 2 |

（一）試估計每輛車平均停車時間及標準差。
（二）若停車費為每15分鐘5元，試估計每輛車平均停車費及標準差。

三、假設給定如下資料：

| X | 2573 | 2224 | 2092 | 2047 | 2117 |
|---|------|------|------|------|------|
| Y | 4007 | 3646 | 3464 | 3515 | 3470 |

（一）試求 X 與 Y 之樣本相關係數 $R_{x,y}$？（5 分）

（二）請求出迴歸線 $\hat{Y}=b_0+b_1X$？（10 分）

（三）請在顯著水準 $\alpha=0.05$ 下（參閱附表），用 F 檢定迴歸線是否顯著？（10分）

四、高速公路某一交通警察隊為瞭解避車彎重點守望勤務對行車速率之影響，乃同時於 A、B、C 三處避車彎前隨機調查 5 部車輛的車速（單位為 KPH），測得結果如下表所示，假設經過避車彎前之行車速率呈常態分配，在顯著水準 $\alpha=0.05$ 下（參閱附表），檢定經過 A、B、C 三處之行車速率是否有差異：

| 避車彎 | 車速（KPH） |
|--------|-------------|
| A | 72,78,85,70,83 |
| B | 72,83,86,84,75 |
| C | 65,70,71,63,62 |

（一）請問此項檢定之「虛無假設 $H_0$」與「對立假設 $H_1$」各為何？（5分）

（二）檢定的決策準則為何？（5 分）

（三）檢定之結果為何？（15 分）

# 附表　F分配表

(ii) $\alpha = 0.05$

$P(F_{m,n} \geq F_{m,n,\alpha}) = \alpha$
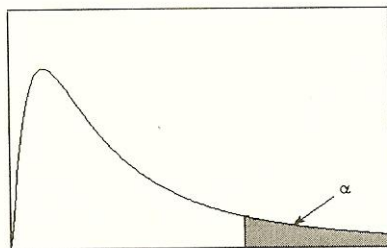


$F_{m,n,\alpha}$

| | 分子自由度 m | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1 | 161.448 | 199.500 | 215.707 | 224.583 | 230.162 | 233.986 | 236.768 | 238.883 | 240.543 |
| 2 | 18.5128 | 19.0000 | 19.1643 | 19.2468 | 19.2964 | 19.3295 | 19.3532 | 19.3710 | 19.3848 |
| 3 | 10.1280 | 9.5521 | 9.2766 | 9.1172 | 9.0135 | 8.9406 | 8.8867 | 8.8452 | 8.8123 |
| 4 | 7.7086 | 6.9443 | 6.5914 | 6.3882 | 6.2561 | 6.1631 | 6.0942 | 6.0410 | 5.9988 |
| 5 | 6.6079 | 5.7861 | 5.4095 | 5.1922 | 5.0503 | 4.9503 | 4.8759 | 4.8183 | 4.7725 |
| 6 | 5.9874 | 5.1433 | 4.7571 | 4.5337 | 4.3874 | 4.2839 | 4.2067 | 4.1468 | 4.0990 |
| 7 | 5.5914 | 4.7374 | 4.3468 | 4.1203 | 3.9715 | 3.8660 | 3.7870 | 3.7257 | 3.6767 |
| 8 | 5.3177 | 4.4590 | 4.0662 | 3.8379 | 3.6875 | 3.5806 | 3.5005 | 3.4381 | 3.3881 |
| 9 | 5.1174 | 4.2565 | 3.8625 | 3.6331 | 3.4817 | 3.3738 | 3.2927 | 3.2296 | 3.1789 |
| 10 | 4.9646 | 4.1028 | 3.7083 | 3.4780 | 3.3258 | 3.2172 | 3.1355 | 3.0717 | 3.0204 |
| 11 | 4.8443 | 3.9823 | 3.5874 | 3.3567 | 3.2039 | 3.0946 | 3.0123 | 2.9480 | 2.8962 |
| 12 | 4.7472 | 3.8853 | 3.4903 | 3.2592 | 3.1059 | 2.9961 | 2.9134 | 2.8486 | 2.7964 |
| 13 | 4.6672 | 3.8056 | 3.4105 | 3.1791 | 3.0254 | 2.9153 | 2.8321 | 2.7669 | 2.7144 |
| 14 | 4.6001 | 3.7389 | 3.3439 | 3.1122 | 2.9582 | 2.8477 | 2.7642 | 2.6987 | 2.6458 |
| 15 | 4.5431 | 3.6823 | 3.2874 | 3.0556 | 2.9013 | 2.7905 | 2.7066 | 2.6408 | 2.5876 |
| 16 | 4.4940 | 3.6337 | 3.2389 | 3.0069 | 2.8524 | 2.7413 | 2.6572 | 2.5911 | 2.5377 |
| 17 | 4.4513 | 3.5915 | 3.1968 | 2.9647 | 2.8100 | 2.6987 | 2.6143 | 2.5480 | 2.4943 |
| 18 | 4.4139 | 3.5546 | 3.1599 | 2.9277 | 2.7729 | 2.6613 | 2.5767 | 2.5102 | 2.4563 |
| 19 | 4.3807 | 3.5219 | 3.1274 | 2.8951 | 2.7401 | 2.6283 | 2.5435 | 2.4768 | 2.4227 |
| 20 | 4.3512 | 3.4928 | 3.0984 | 2.8661 | 2.7109 | 2.5990 | 2.5140 | 2.4471 | 2.3928 |
| 21 | 4.3248 | 3.4668 | 3.0725 | 2.8401 | 2.6848 | 2.5727 | 2.4876 | 2.4205 | 2.3660 |
| 22 | 4.3009 | 3.4434 | 3.0491 | 2.8167 | 2.6613 | 2.5491 | 2.4638 | 2.3965 | 2.3419 |
| 23 | 4.2793 | 3.4221 | 3.0280 | 2.7955 | 2.6400 | 2.5277 | 2.4422 | 2.3748 | 2.3201 |
| 24 | 4.2597 | 3.4028 | 3.0088 | 2.7763 | 2.6207 | 2.5082 | 2.4226 | 2.3551 | 2.3002 |
| 25 | 4.2417 | 3.3852 | 2.9912 | 2.7587 | 2.6030 | 2.4904 | 2.4047 | 2.3371 | 2.2821 |
| 26 | 4.2252 | 3.3690 | 2.9752 | 2.7426 | 2.5868 | 2.4741 | 2.3883 | 2.3205 | 2.2655 |
| 27 | 4.2100 | 3.3541 | 2.9604 | 2.7278 | 2.5719 | 2.4591 | 2.3732 | 2.3053 | 2.2501 |
| 28 | 4.1960 | 3.3404 | 2.9467 | 2.7141 | 2.5581 | 2.4453 | 2.3593 | 2.2913 | 2.2360 |
| 29 | 4.1830 | 3.3277 | 2.9340 | 2.7014 | 2.5454 | 2.4324 | 2.3463 | 2.2783 | 2.2229 |
| 30 | 4.1709 | 3.3158 | 2.9223 | 2.6896 | 2.5336 | 2.4205 | 2.3343 | 2.2662 | 2.2107 |
| 35 | 4.1213 | 3.2674 | 2.8742 | 2.6415 | 2.4851 | 2.3718 | 2.2852 | 2.2167 | 2.1608 |
| 40 | 4.0847 | 3.2317 | 2.8387 | 2.6060 | 2.4495 | 2.3359 | 2.2490 | 2.1802 | 2.1240 |
| 45 | 4.0566 | 3.2043 | 2.8115 | 2.5787 | 2.4221 | 2.3083 | 2.2212 | 2.1521 | 2.0958 |
| 50 | 4.0343 | 3.1826 | 2.7900 | 2.5572 | 2.4004 | 2.2864 | 2.1992 | 2.1299 | 2.0734 |
| 60 | 4.0012 | 3.1504 | 2.7581 | 2.5252 | 2.3683 | 2.2541 | 2.1665 | 2.0970 | 2.0401 |
| 70 | 3.9778 | 3.1277 | 2.7355 | 2.5027 | 2.3456 | 2.2312 | 2.1435 | 2.0737 | 2.0166 |
| 80 | 3.9604 | 3.1108 | 2.7188 | 2.4859 | 2.3287 | 2.2142 | 2.1263 | 2.0564 | 1.9991 |
| 90 | 3.9469 | 3.0977 | 2.7058 | 2.4729 | 2.3157 | 2.2011 | 2.1131 | 2.0430 | 1.9856 |
| 100 | 3.9361 | 3.0873 | 2.6955 | 2.4626 | 2.3053 | 2.1906 | 2.1025 | 2.0323 | 1.9748 |
| 120 | 3.9201 | 3.0718 | 2.6802 | 2.4472 | 2.2899 | 2.1750 | 2.0868 | 2.0164 | 1.9588 |

分母自由度 n

# 中央警察大學 103 學年度碩士班入學考試試題

所　別：交通管理研究所
科　目：交通統計

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一、若道路交通事故的發生屬於波氏（Poisson）分配，而經統計某條道
　　路一年共發生 365 件交通事故，請問：
　（一）其每天發生的平均數及標準差為多少？
　（二）請繪製每天發生件數的機率分配圖？
　（三）請問該道路一天會發生事故超過 4 件的機率為多少？

　參考公式：$f(x) = \dfrac{e^{-\lambda} * \lambda^x}{x!}$，x=0, 1, 2, 3, …

二、若在一定的條件下，每人以一公斤體重飲用一毫升（ml）的酒精量，
　　身體酒精濃度呈常態分配。今隨機實驗男女各 21 名，得血液酒精濃
　　度（mg/dl；毫克/100 毫升）為：男平均 $\overline{x}_1$=49，女平均 $\overline{x}_2$=52；男
　　標準差 $S_1$=16，女標準差 $S_2$=18。
　（一）請估計男性平均血液酒精濃度的 95%信賴區間？
　（二）請檢定在每人以一公斤體重飲用一毫升的酒精量下，女性平均酒
　　　　精濃度是否高於男性？（請寫出假設檢定的過程並繪製其抽樣分
　　　　配圖，$\alpha$ 自定）
　參考數值：$t_{0.05(20)}$=1.725、$t_{0.025(20)}$=2.086、$t_{0.05(40)}$=1.684、$t_{0.025(40)}$=2.021

三、經統計某兩個交通分隊的員警，處理 A1 類道路交通事故的時間（指
　　接獲報案到現場處理完成的時間）如下表：

| 交通分隊 | 平均值(分/件) | 標準差(分/件) | 樣本數 |
|---|---|---|---|
| A | 114.62 | 8.54 | 31 |
| B | 110.11 | 10.68 | 31 |

　　請回答以下問題【可能使用到的統計量：$Z_{0.025} = 1.96$，$Z_{0.05} = 1.64$，
　$F_{30,30,0.025} = 2.07$，$F_{30,30,0.05} = 1.84$】：
　（一）此兩個交通分隊處理 A1 類交通事故時間之變異數是否相同？

（10 分）

（二）此兩個交通分隊處理 A1 類交通事故之平均時間是否相同？
（10 分）

（三）由上表之平均數及標準差數值與檢定結果，可發現哪些特性？請
說明之。（5 分）

四、臺灣地區之高速公路於基本路段上之內側車道容量（capacity）約
2,400 pcu/h，當觀測中低流率狀況下通過某定點之車輛數時，如
以下列不同時段長度計數，其通過之車輛數（$X$）最可能的統計分配
為何？並請說明理由。

（一）每秒鐘計數一次。（5 分）

（二）每 15 秒鐘計數一次。（5 分）

（三）每 10 分鐘計數一次。（5 分）

（四）請說明如何利用配適度（goodness of fit）檢定來探討某時段長
度之通過車輛數（$X$），係呈現何種統計分配？（10 分）

# 中央警察大學 104 學年度碩士班入學考試試題

所　　別：交通管理研究所
科　　目：交通統計

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一、今欲調查與分析某快速公路內側車道之平均自由車流速率（average free-flow speed），乃利用雷射測速槍於路側，並在不干擾車流行進狀況下，蒐集於自由車流狀況之車輛的現點速率（spot speed）。試回答以下問題：
（一）何謂 outlier？如何檢測？（8 分）
（二）若已蒐集有效樣本 100 筆，其平均數為 78 kph，樣本標準差為 7.8 kph，則平均數之估計誤差為何？（7 分）
（三）依前題，若欲控制對於平均自由車流速率之估計誤差在 1.0 kph 之內，則至少需要多少的樣本數？（10 分）
【Hint：Z(0.05) = 1.645；Z(0.025) = 1.96。】

二、請寫出以下統計分配之機率密度函數（Probability Density Function, PDF）：
（一）常態分配（normal distribution）。（9 分）
（二）波桑分配（poisson distribution）。（8 分）
（三）均一分配（uniform distribution）。（8分）

三、試回答下列問題：
（一）解釋說明分層抽樣（Stratified Sampling）、集群抽樣（Cluster Sampling）與系統抽樣（Systematic Sampling）之意義與應用。（9 分）
（二）如何決定抽樣的樣本數（Sample Size）？（6 分）
（三）臺中市公車捷運系統（BRT）的存廢問題，引發一些爭議。假設在一項針對市民的調查中發現，贊成繼續使用的民眾有 6 成，假若由市民中隨機抽取 500 人，則贊成比例在 55% 到 65% 之間的機率為何？（10 分）

四、試回答下列問題：
（一）已知某號誌化交叉路口之交通號誌週期長度為 90 秒，某時相之有效綠燈時間為 45 秒，在有效綠燈時間內停等車隊以 1200 輛/小時流量通過交叉路口。假設該號誌化路口上游車輛抵達率為 400 輛/小時，且服從波氏分配(Poisson Distribution)，試求：
   1、一個週期內到達車輛不超過 10 輛的機率。（7 分）
   2、到達車輛不會停等 2 次的週期最大百分率。（8 分）
（二）為了解某號誌化路口車流抵達型態是否服從波氏分配，經現地調查（以每 20 秒為一間隔，計算車輛抵達輛數，共調查 100 次），其調查資料之分布次數及波氏分配之理論次數以及已知 $\chi^2_{0.05}$ 如下表，請說明其抵達率是否為

波氏分配？（10 分）

| Number of Vehicles | Observed Frequency | Computed Frequency |
|:---:|:---:|:---:|
| 0 | 34 | 30 |
| 1 | 34 | 36 |
| 2 | 16 | 20 |
| 3 | 9 | 10 |
| 4 | 5 | 2.5 |
| 5 | 1 | 0.8 |
| 6 | 1 | 0.7 |

| Values of Chi-square | | | | | | | | |
|:---:|:---:|:---:|:---:|:---:|:---:|:---:|:---:|:---:|
| 自由度 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| $\chi^2_{0.05}$ | 3.841 | 5.991 | 7.815 | 9.488 | 11.070 | 12.592 | 14.067 | 15.507 |

# 中央警察大學 100 學年度碩士班入學考試試題

所　別：交通管理研究所
科　目：交通工程與管制
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一、用路人在進行交通行為時，必須與前車保持適當的安全距離，此一
　　距離的大小取決於用路人之反應時間，又稱之為 PIEV 或 PIJR 時
　　間，試問 PIEV 或 PIJR 所代表的意義為何？又國道對大型車輛安全
　　距離的規定，其設定的反應時間為何？
二、現今世界各先進國家無不盡全力發展智慧型運輸系統（ITS），我國
　　亦不例外，請就解決交通問題方面，說明我國為何要發展 ITS。
三、解釋名詞：（每小題 5 分）
　　1. D-Factor
　　2. Isolated Intersection
　　3. Critical Gap
　　4. Occupancy
　　5. Ramp Metering
四、交通工程師常利用績效指標(Measure of Effectiveness, MOE)來衡量
　　公路設施之運作品質，或用以訂定不同的服務水準等級(Level of
　　Service, LOS)。請分別說明何謂阻斷性設施(interrupted facility)及其
　　常用的 MOE。

# 中央警察大學 101 學年度碩士班入學考試試題

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一、解釋名詞與簡答：（每小題 5 分）

　（一）何謂：密度(density)及佔有率(occupancy)，二者有何關係？

　（二）解釋說明：單方向設計小時交通量(DDHV)與第 30 最高小時交通量(30HV)、年平均每日交通量(AADT)及 D 因素(D-factor)之間的關係。

　（三）道路施工區之交通管制通常分為五個區段，試簡述之。

　（四）簡述「平均車位小時轉換率」(turn-over rate)之調查與應用。

　（五）簡述「運輸需求管理」(TDM)之意義與措施。

二、試回答下列有關交叉路口設計與管制之問題：（每小題 5 分）

　（一）交叉路口之衝突點，其形成原因為何？若僅考慮單一車種，試以雙向各一車道之正交四叉路口為例，以圖示法標繪該路口衝突點之型態及數量。

　（二）為區分交叉路口之路權，交叉路口之管制方式可分為哪幾種？試依不同管制層級之順序及特性加以說明。

　（三）號誌化路口時相設計，有所謂「允許左轉」(permitted left-turn)及「保護左轉」(protected left-turn)，其意義為何？並請依允許左轉、允許兼保護左轉及保護左轉等三種型態，各舉一種完整一週期之交通號誌時相設計圖。

（四）配合圖示解釋飽和流量之意義並說明其調查方法。

（五）號誌化路口之容量，如何透過飽和流量進行計算推估？（如需相關變數，請自行假設）

三、透過 TSM 之手段欲增加既有道路系統設施之道路容量與行車安全，可採用之策略與作為(Strategy Group and Actions)有那些？（25 分）

四、各都會區為解決其大眾運輸之問題無不思考興建 MRT，但 MRT 興建成本昂貴與施工期程長的缺點，又使得 BRT 成為可能之替代方案，請說明興建 BRT 之基本要件有那些？（25 分）

# 中央警察大學 102 學年度碩士班入學考試試題

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一、請說明平面交叉路口的型式及衝突點的型式？其道路使用權（路權）
　　管制方式？

二、請說明單行道、調撥式車道與專用車道之定義與區別？其設置應具
　　備的條件？

三、解釋名詞：
　　（一）Free-flow Speed
　　（二）Lane Capacity
　　（三）Crash Cushion
　　（四）Traffic Demand
　　（五）Right-of-Way

四、目前國內之高、快速公路、重要省、縣道或是市區重要幹道，均設
　　置各式的車輛偵測器（Vehicle Detector, VD），請說明：
　　（一）使用 VD 的目的。
　　（二）常設置 VD 的地點。
　　（三）常見的 VD 類型及其技術。
　　（四）VD 能提供的交通資料。
　　（五）國內使用 VD 的現況問題。

# 中央警察大學 103 學年度碩士班入學考試試題

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一、號誌依運作的方式來區分可分為哪幾種？各自適用於何種路口？其動作的原理和方式又各自為何？

二、車輛能依設計之曲率沿彎道繞行之最大行車速率稱為「臨界車速」，其公式為 $S = \sqrt{127Rf}$ ［KPH］。其中 S 為臨界車速、R 為曲率半徑、f 為車輪與地面之摩擦係數、[KPH]為臨界車速之單位：公里/小時，請依　離心力＝最大摩擦力　之假設證明上列公式。

三、試回答以下有關行人穿越道路之相關問題：

（一）依相關法令，行人穿越道路有哪些規定?（相關條件請自行假設）（6分）

（二）試依繪設方式、設置條件及設置地點等條件，分析比較不同種類之行人穿越道線設施。（9分）

（三）分析比較行人專用號誌與行人穿越道號誌之異同。（4分）

（四）號誌時制設計，為何有行人最短綠燈時間之限制？考慮因子為何？如何計算？（6分）

四、解釋名詞與簡答：（每小題5分）

（一）解釋說明：設計車輛(Design Vehicle)之意義、分類與在交通工程或道路設計上之應用。

（二）解釋說明：小客車當量(PCE)與小客車當量數(PCU)之意義與應用。

（三）路邊停車管制有所謂空間管制與時間管制，請簡要說明其管制方法。

（四）車輛於彎道行駛之轉彎半徑，為何有最小值($R_{min}$)之限制？影響因素為何？

（五）何謂「幹道連鎖號誌」？常見之設計方法有哪些？

# 中央警察大學 104 學年度碩士班入學考試試題

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一、車輛行駛於道路上，往往因道路幾何設計或車輛結構不同，而影響其操作之穩定性與安全性，各變數間之關係表示如：$\dfrac{u^2}{gR} \lessgtr \dfrac{T}{2H}$，為避免車輛產生滑動或翻覆現象，達到行車安全管控，有何策略以對？

二、在兩條各為雙向二車道的十字交叉路口，設有三燈頭的二時相號誌管制，試回答下列問題：
（一）繪出二時相劃分之車流運行與管制分配圖。
（二）試問該路口透過號誌管制，仍存有哪些潛在的衝突？
（三）在不對號誌硬體設施進行變更的情況下，有何具體措施可降低潛在衝突，提升該路口之運行安全？

三、何謂現點速率研究（Spot Speed Study）？試繪製速率調查後之次數分配曲線圖（x 軸為速率；y 軸為觀測車輛數的百分率％）與累加次數曲線圖（x 軸為速率；y 軸為累加百分率％），並由上述兩圖關係說明第 85 百分位數、第 15 百分位數、10KPH 在速限設計之意義。

四、在現行的肇事資料分析中，可以分為「曝光量分析」（Exposure Analysis）及「非曝光量分析」（Non-Exposure Analysis），試說明其意義。各分別列舉至少兩種計算模式，說明並比較兩者之差異。

# 中央警察大學 100 學年度碩士班入學考試試題

所　別：交通管理研究所
科　目：道路交通法規

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一、自去年底五都選舉結束後，政府機關組織邁入一個新紀元，各直轄
　　市無不勵精圖治，對於交通管理更是積極創新研擬對策，甚至因地
　　制宜，朝訂定地方單行法規在努力，試問各直轄市訂定地方單行法
　　規之立法依據為何？又如何依循？
二、98 年 10 月 16 日上午有一大客車駕駛在中山高北上埔鹽系統路段，
　　連續追撞前方堵車車隊，造成 4 死 8 傷的重大交通事故，經查駕駛
　　人有「疲勞駕駛」現象，試問現行道路交通管理法規規定為何？為
　　促進交通安全有何策略以對？
三、肇事致人傷亡而逃逸者，可能要負哪些法律責任？其主要依據的法
　　律條文為何？並請說明各該構成要件。
四、發生道路交通事故是否一定有違反「道路交通安全規則」哪些規定
　　(條文)？汽車駕駛人肇事最常違反的是哪些規定？在肇事責任分析
　　中，這些規定(條文)的構成要件為何？

# 中央警察大學 101 學年度碩士班入學考試試題

所　　別：交通管理研究所
科　　目：道路交通法規

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一、近來有許多車主在汽車上加裝具錄影功能之行車紀錄器，並提供車輛違規事件之錄影畫面向警察機關檢舉，試說明車輛裝設行車紀錄器與檢舉交通違規之適法性？（25 分）

二、請說明汽機車駕駛執照種類，以及各類駕駛執照所准許駕駛之車輛種類為何？並說明駕駛計程車、遊覽車應具備之駕駛資格為何？（25 分）

三、在路段上同一車道，前、後車發生追撞事故，請問事故責任在哪一車？有責的車輛通常會有哪兩種基本肇事原因？又如何判斷區別此兩種原因？（25 分）

四、線條之特性有所謂「實線」、「虛線」，「粗」、「細」及不同顏色，交通標線的設計，充分運用這些線條特性加以組合來達成交通管制之目的，試說明線條特性與管制原理之關係？並分別說明其功能與意義？（25 分）

# 中央警察大學 102 學年度碩士班入學考試試題

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一、酒後駕車長久以來都是社會關注的焦點，自中華民國 102 年 1 月 1 日起，有關酒測值標準有何新變革？其立法目的為何？

二、102 年 3 月 18 日下午 14 時 50 分，樹人派出所警員張三至龍山街 135 號前，針對南向路側停車格內車頭朝北之 AB-1234 自小客車，以未依順向停車製單舉發，其間住戶施某發現員警針對他所有之車輛在製單，承認逆向停車要求不要開單，並立即把車頭調整向南，警員張三告知違規單已開立，並交由施某簽收，施某向其表達車頭逆向停於自家門前的停車格並無積極妨害交通，而且前後還有其他車輛違規停車，為何不告發只告發他的車輛，警員張三向施某表示因民眾檢舉後即逕行離開。施某就前述情節向分局申訴，試問如何查處函覆？

三、請簡要說明「違反道路交通管理事件」新修正的救濟制度、程序及其法規（具體條文）依據；又其與一般行政處罰的救濟制度有何差異？

四、請說明以錄影監視器逕行舉發交通違規的法律依據（具體條文規定）及其現實可行性如何？

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一、道路交通管理處罰條例第 48 條第 1 項第 6 款、道路交通安全規則第 102 條第 1 項第 7 款有關「轉彎車讓直行車先行」規定，其立法管理對象係針對在哪裡發生的交通行為？如何運用交通管制措施減少此一路權衝突？試說明之。

二、違反道路交通管理事件之受處分人，依現行道路交通管理處罰條例與相關子法規定，不服主管機關之處罰應如何救濟？而實務上採何種方式救濟？原因為何？

三、「砂石車」係指一般載運砂石、土方之車輛，請說明目前法規對「砂石車」的管理規範？並說明「砂石車」違規超載之罰則？

四、近年來隨科技進步，汽車車主或駕駛人於車輛中裝置或使用科技設備，但使用部分科技設備影響行車安全，請說明使用車輛科技設備對行車安全之影響？並說明目前法規如何規範？

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一、車輛裝載危險物品應申請臨時通行證，請問於「道路交通安全規則」中，有關該臨時通行證之相關規定為何？

二、依據「道路交通事故處理規範」，交通事故處理單位應將相關交通事故處理資料送審之規定為何？

三、新修正道路交通管理處罰條例第 43 條第 1 項，增訂第 3 款「任意以迫近、驟然變換車道或其他不當方式，迫使他車讓道。」及第 4 款「非遇突發狀況，在行駛途中任意驟然減速、煞車或於車道中暫停。」請申論該條款與刑法第 185 條第 1 項「損壞或壅塞陸路、水路、橋樑或其他公眾往來之設備或以他法致生往來之危險者，處五年以下有期徒刑，拘役或五百元以下罰金。」兩者之適用情形。

四、在高速公路甲車被乙車追撞，甲車駕駛人下車查看，自認非其責任，有別人報案，甲車駕駛人等到救護車抵達，因有其他顧慮，不願被警察調查，先行離去；乙車駕駛人隨即死亡。警察調閱路中監視器影像，經過 8 小時找到甲車駕駛人到案接受調查。請論述甲車駕駛人違反哪些法律條文？又該如何處罰？