

國立中山大學 104 學年度碩士暨碩士專班招生考試試題

科目名稱：管理學甲【企管系企管甲班碩士班甲組】

題號：441007

※本科目依簡章規定「不可以」使用計算機(混合題)

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一、單選題，每題 2 分，不倒扣，合計 80 分

1. A manager attempting to select a test for a job applicant that will be a good predictor of the applicant's performance on the job if hired should be primarily concerned with the _____ of the test.
A) validity
B) outsourcing capability
C) reliability
D) personality
E) consistency
2. Aricelli, a manager, negotiates with her superior to expand her authority to initiate proposals for possible new product launches, Aricelli has increased which type of power?
A) Reward power
B) Referent power
C) Coercive power
D) Legitimate power
E) None of the above
3. Andrew Grove, CEO of Intel, holds a Ph.D. in chemical engineering and is very knowledgeable about the microprocessors that Intel produces. He advises an R&D scientist about a possible new product idea. Which type of power does Grove have?
A) Expert power
B) Empowerment power
C) Consideration power
D) Relationship-oriented power
E) None of the above
4. TWA gives its gate supervisor the authority to decide when to give a free ticket for a future flight to a passenger who has volunteered to give up his seat when a flight has been overbooked. This represents which type of transfer of authority to the gate agent?
A) Consideration power
B) Relationship-oriented power
C) Referent power
D) Charismatic power
E) Empowerment
5. Meg, a manager at XYZ Company, treats her managers with respect. We say that she has engaged in which type of behavior?
A) Initiating structure
B) Consideration
C) Empowerment
D) Task-structure
E) Referent power

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6. An organization gives very specific specifications to its suppliers of raw materials the organization needs to produce goods, in an attempt to improve the quality of those raw materials. This is an example of:
- A) concurrent control.
 - B) feedforward control.
 - C) feedback control.
 - D) bureaucratic control.
 - E) MBO control.
7. The manager of a 7-Eleven convenience store keeps track of the average sale amount for each customer as a way of deciding on the product mix to be carried in the store. This is an example of:
- A) bureaucratic control.
 - B) feedforward control.
 - C) output control.
 - D) input control.
 - E) MBO control.
8. Given the information below, what is this organization's return on investment (ROI)?
- Net Income: \$20,000
Advertising Expenses: \$220,000
Total Liabilities: \$120,000
Total Assets: \$160,000
Gross Margin: \$80,000
- A) 4 percent
 - B) 7.5 percent
 - C) 10 percent
 - D) 12.5 percent
 - E) None of the above
9. In general, the more complicated the technology, the _____ the need for a flexible organizational structure; and the _____ routine the technology, the _____ appropriate is the use of a formal organizational structure.
- A) greater; more; less
 - B) less; more; less
 - C) greater; more; more
 - D) greater; less; less
 - E) none of the above
10. An accounting firm sends a small team of auditors to evaluate the accounting procedures of a large business. What type of technology are they applying to this task?
- A) Mass-production technology
 - B) Continuous-process technology
 - C) Matrix technology
 - D) Small-batch technology
 - E) Hybrid technology

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11. In which step of SWOT analysis would "slower market growth" be most likely to arise?
 - A) S
 - B) W
 - C) O
 - D) T
 - E) Either S or W

12. Firestone Tire and Rubber Company set up a chain of Firestone retail stores to sell its tires to American consumers. This is an example of:
 - A) forward vertical integration.
 - B) a global strategy.
 - C) a focused-differentiation strategy.
 - D) a multidomestic strategy.
 - E) backward vertical integration.

13. Which of the following is NOT a step in implementing strategy?
 - A) SWOT analysis
 - B) allocating responsibilities
 - C) holding people responsible
 - D) establishing a timetable
 - E) allocating resources

14. Ford Motor Co. gives assembly-line workers the authority to shut down the production line whenever they believe that there is a quality defect in the production process. This would be an example of what type of transfer of authority to these workers?
 - A) Empowerment
 - B) Relationship-oriented power
 - C) Consideration power
 - D) Referent power
 - E) Charismatic power

15. Which of the following is an example of a tangible reward that a manager can give to a subordinate?
 - A) An attractive job assignment
 - B) A cash bonus
 - C) A pay raise
 - D) Stock options
 - E) All of the above

16. What is the main concern of first-level managers?
 - A) Monitoring the external environment and determining the best strategy to be competitive
 - B) Putting top management plans into action across the organization
 - C) Allocating resources and coordinating teams
 - D) Linking groups of people
 - E) Facilitating individual performance

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17. The majority of the incubators are operated by
- A) large corporations.
 - B) non-profit organizations.
 - C) small businesses.
 - D) international businesses.
 - E) college drop-outs.
18. The nineteenth and early twentieth centuries saw the development of which management perspective?
- A) The human relations movement
 - B) The behavioral sciences approach
 - C) The classical perspective
 - D) The quantitative management approach
 - E) The TQM approach
19. Frank Gilbreth felt that efficiency equated with ____.
- A) one best way to do work
 - B) leadership flows from the top down
 - C) procedures and policies
 - D) scientific management
 - E) bureaucracy
20. All of the following are characteristics of Weberian bureaucracy EXCEPT:
- A) Labor is divided with clear definitions of authority and responsibility that are legitimized as official duties.
 - B) Positions are organized in a hierarchy of authority, with each position under the authority of a higher one.
 - C) All personnel are selected and promoted based on technical qualifications.
 - D) Administrative acts and decisions are recorded in writing.
 - E) Management is the same as the ownership of the organization.
21. Concern for the environment has prompted companies to take all of the following actions, EXCEPT:
- A) Eliminating nonbiodegradable plastic bags from the environment
 - B) Hiring an environmental specialist
 - C) Improving efficiency of plants and factories
 - D) Investing in cleaner technologies
 - E) All of these
22. In relationship-oriented societies, leaders should
- A) take a strong personal interest in employees.
 - B) feel free to criticize as much as they feel they need to.
 - C) reprimand in public whenever possible. It is an especially effective technique in these societies.
 - D) minimize the emphasis on relations given the society's interest.
 - E) maintain the traditional command-and-control management style.

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23. Sherry is a first-line supervisor at Rooftop Corporation. She is most concerned with which level of goals?
- A) Operational goals
 - B) Tactical plans
 - C) Strategic goals
 - D) Mission statement
 - E) Vision
24. When properly managed, ____ can create additional value with existing resources, providing a big boost to the bottom line.
- A) synergy
 - B) competitors
 - C) government contacts
 - D) command structure
 - E) cooperation among customers
25. Bierderlack has a policy that states that more than three absences in a six-month period shall result in a suspension. Colleen, the manager, has just decided to suspend one of her shift employees for violating this policy. This is an example of
- A) a programmed decision.
 - B) a nonprogrammed decision.
 - C) an insignificant decision.
 - D) poor management.
 - E) personal grudge.
26. Beth's Barnyard, Inc. has decided to restructure the entire organization. You hold a meeting with your employees to notify them of the change. You do not give them any detailed information. Which of the barriers to change would you expect your employees to exhibit?
- A) Disagreements about the benefits
 - B) Uncertainty about the future
 - C) A lack of trust
 - D) Fear of organizational loss
 - E) All of these
27. With ____, compensation is linked to the specific tasks that an employee performs.
- A) skill-based pay
 - B) incentive pay
 - C) job-based pay
 - D) salary
 - E) competency-based pay
28. All of the following are things bad bosses do to create stress for their subordinates EXCEPT:
- A) Bully and harass people to keep them on their toes.
 - B) Create perpetual doubt about how well employees are performing.
 - C) Fail to give people credit for their contributions and achievements.
 - D) Impose unreasonable demands and overwhelming workloads.
 - E) Tell people exactly what is expected of them.

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29. On the continuum of empowerment, what is the highest level of empowerment that requires the most complex skills?
- A) Self-management
 - B) Suggestion programs
 - C) Participation groups
 - D) Cross-functional teams
 - E) Periodic briefings
30. Tiffany recently discovered that the reject rate for her department has exceeded the standard for performance in this area. What should Tiffany do to exercise effective control?
- A) She should order more training for her workforce.
 - B) She should contact the maintenance department and have them come fix her machinery.
 - C) She should suspend the poorer workers in her department.
 - D) She should investigate and discover the cause of the problem.
 - E) None of these
31. Although it lacks sources of timber and oil, Chablis has a plentiful supply of grapes for its many wineries. Which statement about Chablis is true?
- A) It has a comparative advantage in wine production.
 - B) It has a comparative advantage in timber and oil production.
 - C) It has an absolute advantage in the production of wine.
 - D) It has an absolute advantage in timber and oil production.
 - E) It has no comparative or absolute advantages.
32. Tony Shinn is applying for a mortgage to purchase his first home. His credit rating is mediocre due to several late payments on his credit cards and car loan. He is upset because his friend Jerry was offered an interest rate 3 percent less than what Tony was offered by the same mortgage company. This mortgage company's actions were
- A) unethical—both Tony and Jerry should have been charged the same interest rates, regardless of their credit histories.
 - B) ethical—this is just a part of doing business because credit history is an important indicator of future payments.
 - C) illegal—subjective factors may not be used when determining which credit offers may be extended to certain customers.
 - D) unethical if Tony is a minority and Jerry is not.
 - E) unethical and illegal—customers must all be treated the same.
33. Vice president, marketing—Regional sales manager—District manager—Sales supervisor represents a(n)
- A) organization chart.
 - B) command hierarchy.
 - C) corporate organization.
 - D) chain of command.
 - E) departmentalization.

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34. Kraft Foods began producing Jell-O over sixty years ago, and the product continues to be profitable. All of the following are methods Kraft Foods has probably used to lengthen Jell-O's product life cycle EXCEPT
- A) product refinement.
 - B) advertising and promotion.
 - C) product integration.
 - D) research and development.
 - E) product extension.
35. Daniel, Thomas, and Lucas are partners in a law firm under a typical partnership agreement in which each owns an equal share of the business. Thomas dies suddenly of a heart attack. What will most likely become of the partnership?
- A) It will immediately cease to exist and Daniel and Lucas will have to find new jobs.
 - B) Thomas's share of the business will automatically be split between Daniel and Lucas.
 - C) Daniel and Lucas will be able to purchase Thomas's interest from his estate.
 - D) Daniel and Lucas will have to quickly find a new partner to take Thomas's place.
 - E) It will dissolve, and Daniel and Lucas will lose personal property to pay business debts.
36. Coca-Cola wants to determine how popular its new soft drink will be before launching it nationwide. What will Coca-Cola most likely use?
- A) Its marketing information system
 - B) External data
 - C) Internal data
 - D) Marketing research
 - E) Employee survey
37. In a meeting to generate new products, the advisory committee felt that it had come up with some excellent ideas. Now that there is a list of product ideas, the next step is
- A) business analysis.
 - B) product development.
 - C) screening.
 - D) test marketing.
 - E) commercialization.
38. A clothing retailer has been striving to reduce the costs of its inventory, but many of its customers are switching to competitors because they do not want to wait for the retailer to order the items. This retailer is experiencing
- A) customer satisfaction.
 - B) stock-out costs.
 - C) production concerns.
 - D) holding costs.
 - E) just-in-time inventory.
39. A closed shop means that
- A) a person is not allowed to work for a company if he or she is planning on being a member of a union.
 - B) union members get paid a higher wage than nonunion employees.
 - C) union members receive many more benefits than nonunion employees.
 - D) employees are protected against loss of their jobs by being members of a union.
 - E) a person must join the union before being hired.

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40. If a company distributes information about its sexual harassment and discrimination policies to its employees through its intranet or the Internet, what function is this technology providing?
- A) Assisting the sales force
 - B) Conducting financial activities
 - C) Training employees
 - D) Helping employees communicate
 - E) Recruiting employees

二、申論題，合計 20 分

SLP 是一家多國籍企業(multinational enterprise)，主要產品為創意燈具。母公司在台灣，是全球管理營運中心擁有生產、研發、行銷、人資和財務五大部門，各分公司之相關部門直屬於全球管理營運中心五大部門。其最主要大量生產線在越南專責生產，台灣生產線主要製作樣品以供展示和客製化高價產品。SLP 產品行銷北美、西歐、北歐、南歐、日本和中國，也因此在美國、瑞典、德國、西班牙、日本和中國都設有分公司；各國分公司都設有研發和行銷兩大部門(越南除外)以了解所在國當地所需和趨勢，其他人資和財務人員則依照其所在規模調整人員配置。

請就上述，幫 SLP 繪製一組織架構圖，並說明是以何種功能為導向所設計出的組織架構圖(10 分)，有何優點(5 分)和缺點(5 分)?

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壹、單選題〈1 至 10 題為中文題，每題 3 分；11 題至 16 題為英文題，每題 5 分；總計 60 分〉

- 下列何者在國民所得帳中不列入消費支出？
 - 耐久財支出(consumer durables)
 - 非耐久財支出(nondurable goods)
 - 勞務支出(services)
 - 房屋購買支出(housing purchases)
 - 以上 ABCD 都列入消費支出
- 下列何者會造成勞動需求曲線向左移動？
 - 產品售價上升
 - 實體資本數量減少
 - 生產技術進步
 - 僱工成本上升
 - 以上 ABCD 都會使勞動需求曲線左移
- 假設安倍經濟學只是增加貨幣供給，沒有搭配其他提升經濟體系生產效率的做法。這樣的安倍經濟學在長期下將使實質利率__，物價水準__，實質產出__。
 - 下降，增加，增加
 - 下降，增加，不變
 - 增加，下降，下降
 - 不變，增加，不變
 - 下降，下降，下降
- 若政府支出與政府稅收等量減少，則
 - 實質利率上升，投資支出上升
 - 實質利率上升，消費支出下降
 - 實質利率下降，消費支出下降
 - 實質利率下降，投資支出上升
 - 實質利率不變，投資支出不變
- 下列何者不是 AD 曲線呈負斜率的原因？
 - 較高物價水準使實質財富降低，消費支出減少
 - 較高物價水準使貿易餘額降低
 - 較高物價水準使實質貨幣需求上升，利率上升，投資支出減少
 - 較高物價水準使實質貨幣供給降低，利率上升，投資支出減少
 - 以上 ABCD 都是 AD 曲線呈負斜率的原因
- 下列何者因素會使 IS 曲線右移？
 - 國民所得上升
 - 實質利率下降
 - 實質利率上升
 - 台股指數下跌
 - 以上皆非
- 金融創新使貨幣需求減少，將使
 - IS 曲線左移
 - LM 曲線左移
 - AD 曲線右移
 - 短期總合供給(SRAS)曲線右移
 - 以上皆非

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8. 短期下的凱因斯模型中，原油價格下降將使產出____，實質利率____。
- 上升，下降
 - 上升，上升
 - 下降，上升
 - 下降，下降
 - 以上皆非
9. 下列敘述何者為偽？
- 如果貨幣數量的衡量為 M1，活期存款利率上升將使實質貨幣需求上升
 - 瓦拉斯法則(Walras Law)保證貨幣市場與債券市場都會達到均衡
 - 自然失業率上升使短期菲力浦曲線右移
 - 短期總合供給曲線與短期菲力浦曲線具有一對一的對應關係
 - 總要素生產力上升使長期總合供給曲線右移
10. 長期下，下列何者因素會使新台幣升值？
- 美國政府購買增加
 - 中國大陸國民所得下降
 - 台灣實施緊縮性財政政策
 - 台灣實施擴張性貨幣政策
 - 以上皆非
11. Consider the market of scallion (蔥) in Taiwan. The Central Weather Bureau predicts that a typhoon will arrive three days later. Both sellers and buyers expect that the price of scallion will increase **several days later** after the typhoon hits Taiwan. What will happen to the equilibrium price and quantity of scallion **today**?
- The equilibrium quantity and price will both increase.
 - The equilibrium quantity will decrease but the equilibrium price will be uncertain.
 - The equilibrium price will increase but the equilibrium quantity will decrease.
 - The equilibrium price will increase but the equilibrium quantity will be uncertain.
12. Which statement below regarding housing markets in Taiwan is wrong?
- A trend away from multi-generational to single-generation households (由多代同堂的家庭轉換為小家庭之趨勢) will increase the demand for housing in Taiwan.
 - The expectations of an increasing interest rate will reduce housing prices.
 - A regulation discouraging banks from lending to investors buying more than one residential unit will reduce housing prices.
 - Imposing a luxury tax (奢侈稅) on sellers can reduce housing prices.
13. Peter's factory produces a toxic waste by-product. If Peter dumps it in the river, he causes damage to John, a fisherman. Peter can install a filter, in which case John will suffer no damage. The following table shows their payoffs in two scenarios. Which statement is true below?
- If the government prohibits Peter from polluting the river, it will be **socially** optimal.
 - If the river is John's property, he must stop Peter from polluting the river to maximize his payoff.
 - If John has the right to keep the river clean, Peter will choose to compensate John and keep polluting the river.
 - If Peter has the right to pollute, he will not to pollute the river because of John's compensation (補償金).

	Pollution	No pollution
Peter	US\$ 1000/day	US\$ 800/day
John	US\$ 150/day	US\$ 250/day

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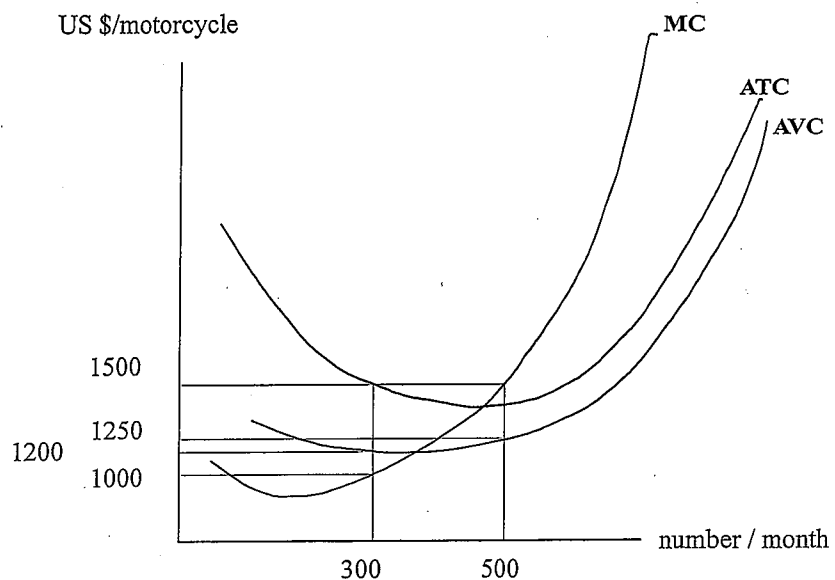
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14. For the motorcycle factory whose marginal, average variable, and average total cost curve in the short run (in a month) are shown in the diagram below, how much profit will this producer earn if the price of a motorcycle is US\$ 1,500?
- US\$ 35,000
 - US\$ 65,000
 - US\$ 125,000
 - US\$ 750,000
15. Refer to problem 14. If the price of a motorcycle is US\$ 1,250, in the short run, what is the possible number of motorcycle produced by this factory for profit-maximization?
- 500
 - 400
 - 300
 - 0



16. Whole Foods and Trader Joe's are two famous supermarket chains (連鎖超市) in the US. Assume that they are considering setting up their new shops in Las Vegas. Both of them have three options: uptown, east, and west, and below is the payoff matrix. If **Whole Foods sets up their shop first**, what is the payoff of the sub-game perfect equilibrium (SPE: the equilibrium you get by backward induction in an extensive form game) in this game?
- (90,110)
 - (100,90)
 - (90,110) and (100,90)
 - (180,50) and (45,170)

		Trader Joe's		
		<i>Uptown</i>	<i>East</i>	<i>West</i>
Whole Foods	<i>Uptown</i>	(20,30)	(45,140)	(45,170)
	<i>East</i>	(180,50)	(80,70)	(100,90)
	<i>West</i>	(150,50)	(90,110)	(75,85)

貳、填充題 (只需填寫答案; 每小格 4 分, 共 20 分)

- 假設某國生產函數為 $Y=10AL-AL^2$, 其中 Y 為產出, A 為總要素生產力, L 為總勞動工時。若該國總要素生產力 $A=2$, 且在無彈性的勞動供給之下, 總勞動工時 $L=4$, 則長期下的全國產出為 (1), 均衡實質工資為 (2)。
- 假設某一封閉經濟體系某一年的部分總體經濟資料如下: $Y=10,000$, $C=6,000$, $T=1,500$,

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$G=1,700$; 其中 Y 為 GDP, C 為消費支出, T 為稅收, G 為政府購買。另外, 該國投資函數為 $I=3,000-100r$, 其中 r 為以百分比所表示的實質利率。則此封閉經濟體系均衡實質利率為__ (3) __、全國儲蓄(national saving)為__ (4) __、私人儲蓄(private saving)為__ (5) __。

參、計算申論題〈共計 20 分；請簡附計算或推導過程〉

1. (20 分) 設若你在花蓮慕谷慕魚觀光區裡面開熱炒店, C 店。觀光區原住民並沒有外食的需求, 只有觀光客才會去你的店裡消費。為了簡化起見, 假設你賣套餐的邊際成本 (marginal cost) 是 NT80 元 (水平線), 沒有固定成本。雖然 C 店曾是那一帶唯一的一家熱炒店, 但是前年平地人在觀光區的入口處也開了一家熱炒店, M 店。在慕谷慕魚的道路可讓外車隨意進出的情況下, 對觀光客來說, 開車往返於入口處的 M 店和裡面的 C 店幾乎是沒有成本的。而在當地的道路可讓外車隨意進出的情況下, 平均每天來訪的觀光客約為 900 人, 早上 600 人 (有中午用餐需求), 下午則為 300 人 (無中午用餐需求)。此外, 你和 M 店賣的餐點對消費者來說也幾乎沒有差別, 你們只能在價格上作競爭。為簡化起見, M 店賣套餐的邊際成本是 NT70 元, 也沒有固定成本。
 - a. 若套餐的價格只能設為整數, 請寫下在 Nash equilibrium 時, 兩組可能的套餐價格。(5 分)
 - b. 近來因大量外車 (尤其是大型車輛) 湧入慕谷慕魚, 帶來大量垃圾、汙染與交通擁塞, 去年在原居民不堪其擾的情況下, 決定封路。觀光客現在欲進入該區, 只能步行, 不得開車。慕谷慕魚在封路後平均每天的觀光客預計將縮減為 450 人, 早上預計有 300 人步行進入 (假設均在上午八點前入山), 而下午則有約 150 人入山。若上午步行進入的觀光客, 於一個上午的遊玩後, 均有用餐的需求。不過, 要讓他們於中午用餐時間由區內步行到入口的 M 店用餐, 除非你額外付給他們至少 NT50 元 (步行到入口的成本為 NT50 元)。而下午入山的遊客, 則悉數在外地用完餐後才會到達入口步行入山。若套餐的價格只能設為整數, 請寫下在 Nash equilibrium 時, 兩組可能的套餐價格。(5 分)
 - c. 承 b 小題, 假設下午入山的遊客, 大約有一半的人 (75 人) 會選擇在 M 店用完餐後再步行進入, 另一半則在外地用完餐後才會過來。下午入山的遊客中, 選擇在 M 店用餐的人, 能夠接受的用餐價格最高均為 NT100 元 (山下的行情, 價格太高就會在別地用完餐後再過來)。若 M 店無法針對上午入山與下午入山的遊客索取不同價格, 而套餐的價格只能設為整數, 請簡短說明此時 M 店定價的幾種考慮, M 店是否會和 C 店競相追價? 由此三小題觀之, 請問你 (C 店老闆) 是否應支持封山? (10 分)

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一、單選題，每題 2 分，不倒扣，合計 80 分

1. Ford Motor Co. tests applicants for assembly-line positions on their reading and mathematical abilities in order to determine if they have the mental abilities necessary to do these types of jobs. What type of screening procedure is being used?
 - A) Personality tests
 - B) Ability tests
 - C) Situational tests
 - D) Unstructured tests
 - E) Ad hoc tests
2. The supervisor of a newly hired school bus driver rides with the new driver for the first week on the new job to be sure that the driver follows the correct route and the proper safety procedures. In which aspect of the HRM process is this supervisor involved?
 - A) Simulation
 - B) Needs assessment
 - C) Role-playing
 - D) On-the-job training
 - E) Development
3. Getting researchers in different scientific disciplines to work together is difficult because:
 - A) They probably come from different countries
 - B) They concentrate too heavily on theoretical issues
 - C) They approach the research process differently
 - D) They are likely to suffer from groupthink
 - E) They are likely to suffer from social loafing
4. To encourage group cohesiveness, managers should:
 - A) Discourage the group from forming an identity
 - B) Encourage competition between members of a team
 - C) Reward cooperation between groups
 - D) Keep measure of group performance confidential
 - E) Promote inter-group competition
5. Joe, a manager, can hire a new supervisor for his division, Joe has which type of power?
 - A) Reward power
 - B) Referent power
 - C) Legitimate power
 - D) Coercive power
 - E) Expert power
6. A production supervisor delegates to a production worker the responsibility to schedule his own work activities depending on the job requirements on the daily schedule. What type of transfer of authority has occurred?
 - A) Referent power
 - B) Empowerment
 - C) Relationship-oriented power
 - D) Consideration power
 - E) None of the above

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7. A supermarket manager schedules the workers in the supermarket to ensure that enough cash register clerks are available at different times during the day depending on the expected demand from customers. This manager has engaged in which type of behavior?
- A) Relationship-oriented
 - B) Consideration
 - C) Initiating structure
 - D) Empowerment
 - E) Referent power
8. At the _____ stage of the process of transforming raw materials into finished goods, managers typically use _____ control procedures to obtain immediate feedback about how efficiently the raw materials are being transformed into finished goods.
- A) conversion; concurrent
 - B) input; feedback
 - C) output; feedforward
 - D) input; concurrent
 - E) output; concurrent
9. An organization sets up a system to monitor unit sales of its products in an attempt to provide a measure of the changes taking place in customer tastes and the possible resulting impact on future sales. This is an example of:
- A) feedforward control.
 - B) feedback control.
 - C) MBO control.
 - D) bureaucratic control.
 - E) concurrent control.
10. The manager of a fast-food restaurant such as McDonald's keeps track of the number of customers served at different periods of the day in an attempt to plan a schedule for workers that matches the demand for the restaurant's products. This is an example of:
- A) output control.
 - B) bureaucratic control.
 - C) input control.
 - D) MBO control.
 - E) feedforward control.
11. Given the information below, what is this organization's gross profit ratio?
- Net Sales: \$200,000
 - Cost of Goods Sold: \$150,000
 - Operating Profit: \$20,000
 - Total Assets: \$250,000
 - Total Liabilities: \$130,000
- A) 15 percent
 - B) 20 percent
 - C) 25 percent
 - D) 30 percent
 - E) None of the above

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12. When a custom-built Rolls Royce automobile is manufactured, what type of technology is being used?
- A) Mass-production technology
 - B) Continuous-process technology
 - C) Small-batch technology
 - D) Matrix technology
 - E) Hybrid technology
13. When a Ford Explorer SUV is produced, what type of technology is being used?
- A) Matrix technology
 - B) Small-batch technology
 - C) Hybrid technology
 - D) Continuous-process technology
 - E) Mass-production technology
14. All of the following are principle corporate-level strategies that managers can use to help their organization increase its sales and profits EXCEPT:
- A) concentration on a single business.
 - B) diversification.
 - C) international expansion.
 - D) vertical integration.
 - E) focus.
15. Horse Tire and AR Company purchases rubber plantations in Africa so that it will have a source of supply for its tire manufacturing plants in Akron, Ohio. This is an example of:
- A) forward vertical integration.
 - B) a global strategy.
 - C) a multidomestic strategy.
 - D) backward vertical integration.
 - E) a focused-differentiation strategy.
16. Consider the following three managers from Outrageous Outfitters, Inc. Tiffany Blanchard is the president, Timothy Thompson is the director of marketing, and Karen Baxter is a maintenance supervisor. Which of the following statements is true?
- A) Karen Baxter does more planning than Tiffany Blanchard.
 - B) Timothy Thompson does more leading than Karen Baxter.
 - C) Tiffany Blanchard does more controlling than Timothy Thompson.
 - D) Tiffany Blanchard does more planning than Karen Baxter.
 - E) None of these.
17. Which of the following is the belief by individuals that their future is not within their control but rather is influenced by external forces?
- A) Awareness of passing time
 - B) Tolerance for ambiguity
 - C) Internal locus of control
 - D) External locus of control
 - E) Deferred locus of control

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18. The three subfields of the classical perspective include
- A) quantitative management, behavioral science, and administrative management.
 - B) bureaucratic organization, quantitative management, and the human relations movement.
 - C) administrative management, bureaucratic organization, and scientific management.
 - D) scientific management, quantitative management, and administrative management.
 - E) none of these.
19. Which of the following is not a criticism of scientific management?
- A) It does not appreciate the social context of work.
 - B) It does not appreciate the higher needs of workers.
 - C) It does not appreciate the careful study of tasks and jobs.
 - D) It does not acknowledge variance among individuals.
 - E) It tends to regard workers as uninformed and ignored their ideas and suggestions.
20. According to Weber's ideas on bureaucracy, organizations should be based on which of these?
- A) Personal loyalty
 - B) Personal references
 - C) Rational authority
 - D) Family ties
 - E) Charismatic authority
21. Integrated Computers, Inc. wants to compile a profile of the customer it will target in its next promotional mailing. What environment would this be found in?
- A) Internal environment
 - B) Task environment
 - C) Work environment
 - D) General environment
 - E) None of these
22. All of the following are components of cultural intelligence, EXCEPT:
- A) Physical
 - B) Cognitive
 - C) Emotional
 - D) Analytical
 - E) All of these
23. The _____ is the basis for the strategic level of goals and plans which in turn shapes the _____ and _____ level.
- A) goal, mission, tactical
 - B) objective, operational, mission
 - C) operational goal, mission and tactical
 - D) mission, tactical, operational
 - E) tactical plan, operational, mission
24. When AT&T decided to buy Media One, a cable company, it was pursuing a
- A) functional-level strategy.
 - B) internal growth strategy.
 - C) multi-domestic strategy.
 - D) corporate-level strategy.
 - E) business-level strategy.

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25. Mark, a production manager at Kaylie's Kookware, recently chose to schedule his workers to work overtime. His alternative was to hire more workers. He is now monitoring the consequences of his choice. This is an example of
- A) planning.
 - B) decision-making.
 - C) organizing.
 - D) controlling.
 - E) leading.
26. Harvest International is anticipating changes in their production procedures. You have been assigned to identify potential barriers to the change and suggest solutions to these barriers. You are using
- A) force field analysis.
 - B) barrier analysis.
 - C) negotiation.
 - D) assessment of goals.
 - E) all of these.
27. Colby is a new interviewer who just finished an interview with Renee. Her professional style and her flawless grooming immediately struck him. Colby gave Renee a very good evaluation although her previous work experience and educational background were not that exceptional. What rating error did Colby succumb to?
- A) Halo effect
 - B) Central tendency
 - C) Homogeneity
 - D) Leniency
 - E) General tendency
28. Which of the following describes a person with the learning characteristics of being good at implementing decisions and carrying out plans?
- A) Diverger
 - B) Assimilator
 - C) Converger
 - D) Accommodator
 - E) None of these
29. The job characteristic of feedback provides the worker with
- A) employee growth-need strength.
 - B) experienced meaningfulness of work.
 - C) experienced responsibility.
 - D) knowledge of actual results.
 - E) demotivation.
30. Zachary, a manager at ExecuComp, receives quarterly reports, which tracks his department's production statistics. However, these reports lack key information regarding reject rates. Which of the following components of the control model need improvement?
- A) Measuring actual performance
 - B) The planning and setting of performance standards
 - C) SWOT analysis
 - D) The ability to take corrective action when necessary
 - E) All of these

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31. Japanese tourists come to experience the magic of Disney World and other attractions around Orlando, Florida. These tourists are
- A) contributing to the United States' deficit balance of payments.
 - B) helping increase the balance of payments for Japan.
 - C) exporting products and services back to Japan.
 - D) further decreasing the United States' balance of payments.
 - E) helping the United States' balance of payments.
32. Brant promised to repair Carolyn's car on Thursday. After picking up the necessary part at a junkyard, he discovered he could not do the job after all and that the junkyard would not buy back the part. Carolyn does not know about these developments. However, she thinks Brant will be finished with her car sometime today. What should Brant do?
- A) Try to repair the car even though he does not really know how.
 - B) Try to repair the car so he can at least get his money's worth out of it.
 - C) Call Carolyn to inform her of the problem, and recommend a reputable repair shop.
 - D) Fake an emergency and contact Carolyn on Monday.
 - E) Stall for time to read up on car repairs so he can practice on Carolyn's car.
33. Upon beginning her career at Davidson Inc., a small consulting firm, Stephanie Benjamin receives a copy of the firm's organization chart, which will
- A) demonstrate the firm's informal network of communication.
 - B) clarify positions and reporting relationships within the firm.
 - C) not be very useful because small firms don't usually adhere to a formal structure.
 - D) probably be outdated because small firms are always changing.
 - E) indicate the short-, medium-, and long-term goals of the company.
34. Scientists at R&D Labs worked for two years on a project to eventually add more knowledge to the science of photography. But in a meeting with the board of directors last week, they had nothing new to report. This is always a risk with
- A) basic research.
 - B) applied research.
 - C) development and implementation.
 - D) a lack of research.
 - E) underfunded research projects.
35. Kerry wants to start a business to sell handmade jewelry. She is very competent at making the jewelry and teaching others to make it, and she has saved a reasonable amount of money to start the business. Who of the following would make the best partner for Kerry?
- A) Bailey, an artist with a real flair for new-aged jewelry design
 - B) Ashley, Kerry's best friend who is fun to hang out with and good at solving problems
 - C) Natalie, who has business experience with accounting, management, and marketing
 - D) Janette, who used to work at the jewelry counter at a department store
 - E) Darla, an engineer with industrial management experience but no money
36. Which of the following is not a step in the consumer buying decision process?
- A) Evaluate alternatives
 - B) Evaluate after the purchase
 - C) Acknowledge that a problem exists
 - D) Look for information
 - E) Tell other people about the product

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37. As the product idea committee of Foster Manufacturing Company went through its list of possible new products, it rejected various ideas for one or more reasons. Which of the following is least likely to be a reason for rejection?
- A) The company lacked the expertise to develop and market the product.
 - B) The product did not match organizational resources.
 - C) The product would allow the company to increase its annual sales by 20 percent.
 - D) The product was not consistent with the company's objectives.
 - E) The company lacked the needed human resources.
38. The cost of lost sales due to insufficient inventory is called _____ cost.
- A) stock-out
 - B) order processing
 - C) holding
 - D) inventory reduction
 - E) direct
39. Suppose the economy is enduring a period of higher than usual inflation. What will union representatives most likely rely on to protect the financial well-being of their members during this time?
- A) Incentive pay raises
 - B) Seniority
 - C) Decreasing profits
 - D) Overtime pay
 - E) Cost-of-living clause
40. A geographically dispersed group of employees who work for IKEA must work on a project together. The team leader needs to be able to monitor progress and check availability of employees around the world very quickly. IKEA would most likely use _____ to accomplish its objectives.
- A) a spreadsheet program
 - B) a database system
 - C) a management information system
 - D) groupware
 - E) collaborative sharing

二、申論題，20 分

組織可以透過哪些正式的機制強化倫理的決策與行為？請說明之。

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壹、單選題〈1 至 10 題為中文題，每題 3 分；11 題至 16 題為英文題，每題 5 分；總計 60 分〉

1. 請問下列哪一個經濟活動對今年台灣的 GDP 沒有貢獻？
 - a. 某甲今年夏天到日本東京築地市場消費一盤高檔握壽司
 - b. 外籍生付學費來台就讀
 - c. 某建設公司今年有一建案，蓋了每間價值 2,000 萬的透天厝 10 間，但今年內一間都沒賣出去
 - d. 某甲以 50 萬元向某乙購買未上市股票 5 張，付給律師見證費 1 萬元
 - e. 以上 ABCD 對今年台灣的 GDP 都有貢獻
2. 下列何者會造成勞動需求曲線向左移動？
 - a. 產品售價上升
 - b. 實體資本數量減少
 - c. 生產技術進步
 - d. 僱工成本上升
 - e. 以上 ABCD 都會使勞動需求曲線左移
3. 假設安倍經濟學只是增加貨幣供給，沒有搭配其他提升經濟體系生產效率的做法。這樣的安倍經濟學在長期下將使實質利率__，物價水準__，實質產出__。
 - a. 下降，增加，增加
 - b. 下降，增加，不變
 - c. 增加，下降，下降
 - d. 不變，增加，不變
 - e. 下降，下降，下降
4. 若政府支出與政府稅收等量減少，則
 - a. 實質利率上升，投資支出上升
 - b. 實質利率上升，消費支出下降
 - c. 實質利率下降，消費支出下降
 - d. 實質利率下降，投資支出上升
 - e. 實質利率不變，投資支出不變
5. 下列何者因素會使 IS 曲線右移？
 - a. 國民所得上升
 - b. 實質利率下降
 - c. 實質利率上升
 - d. 台股指數下跌
 - e. 以上皆非
6. 金融創新使貨幣需求減少，將使
 - a. IS 曲線左移
 - b. LM 曲線左移
 - c. AD 曲線右移
 - d. 短期總合供給(SRAS)曲線右移
 - e. 以上皆非
7. 短期下的凱因斯模型中，原油價格下降將使產出__，實質利率__。
 - a. 上升，下降
 - b. 上升，上升
 - c. 下降，上升
 - d. 下降，下降
 - e. 以上皆非

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8. 下列敘述何者為偽？
- 如果貨幣數量的衡量為 M1，活期存款利率上升將使實質貨幣需求上升
 - 瓦拉斯法則(Walras Law)保證貨幣市場與債券市場都會達到均衡
 - 自然失業率上升使短期菲力浦曲線右移
 - 短期總合供給曲線與短期菲力浦曲線具有一對一的對應關係
 - 總要素生產力上升使長期總合供給曲線右移
9. 長期下，下列何者因素會使新台幣升值？
- 美國政府購買增加
 - 中國大陸國民所得下降
 - 台灣實施緊縮性財政政策
 - 台灣實施擴張性貨幣政策
 - 以上皆非
10. 長期下，一小型開放經濟體系投資需求外生減少，此將使國際利率 _____，此經濟體當期帳 _____
- 下降；下降
 - 不變；上升
 - 下降；上升
 - 不變；下降
 - 以上皆非
11. According to *Compendium of Materia Medica* (本草綱目), *Lonicera Confusa* (金銀花, a kind of medicinal herb) has a good effect on flu. Now, there is an outbreak of bird flu (such as H5N1) in China; people **expect** that there will also be an outbreak in Taiwan **next several weeks**. What will happen to the equilibrium price and quantity in the market for *Lonicera Confusa* **in this week**?
- The equilibrium price and quantity will increase.
 - The equilibrium quantity will decrease but the equilibrium price will increase.
 - The equilibrium quantity will increase but the equilibrium price will be uncertain.
 - The equilibrium price will increase but the equilibrium quantity will be uncertain.
12. Consider the market of luxury apartments (豪宅) in Taipei. To stop speculation (投機炒作), the government imposes a 40% luxury tax (奢侈稅) in the market, which is collected from the sellers. The price elasticity of demand is not equally to zero. What will happen to the market of luxury apartments in Taiwan?
- The equilibrium price will decrease but the equilibrium quantity will be uncertain.
 - The equilibrium price will increase but the equilibrium quantity will be uncertain.
 - The equilibrium price will decrease but the equilibrium quantity will increase.
 - The equilibrium price will increase but the equilibrium quantity will decrease.
13. Peter's factory produces a toxic waste by-product. If Peter dumps it in the river, he causes damage to John, a fisherman. Peter can install a filter, in which case John will suffer no damage. The following table shows their payoffs in two scenarios. Which statement is true below?
- If the government prohibits Peter from polluting the river, it will be **socially** optimal.
 - If the river is John's property, he must stop Peter from polluting the river to maximize his payoff.
 - If John has the right to keep the river clean, Peter will choose to compensate John and keep polluting the river.
 - If Peter has the right to pollute, he will not to pollute the river because of John's compensation (補償金).

國立中山大學 104 學年度碩士暨碩士專班招生考試試題

科目名稱：經濟學乙【企管系企管甲班碩士班乙組】

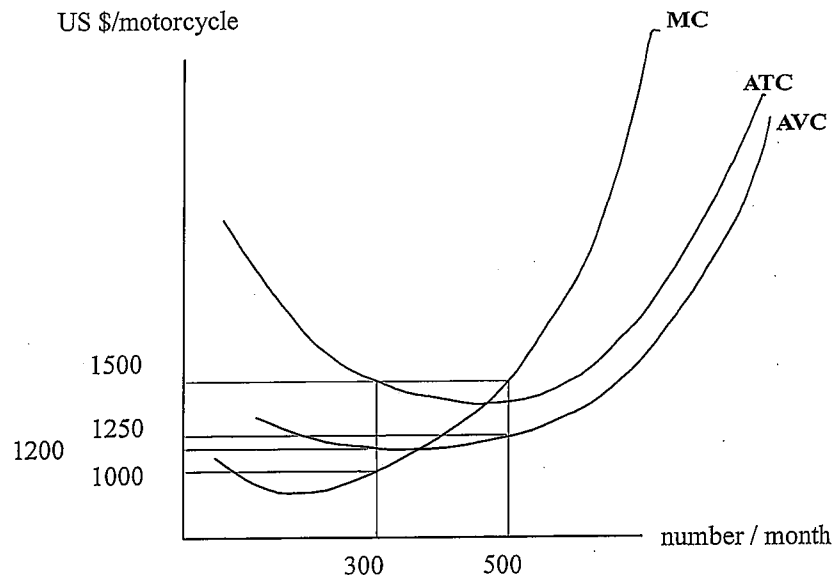
題號：441001

※本科目依簡章規定「不可以」使用計算機(混合題)

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	Pollution	No pollution
Peter	US\$ 2000/day	US\$ 1500/day
John	US\$ 200/day	US\$ 300/day

14. For the motorcycle factory whose marginal, average variable, and average total cost curve in the short run (in a month) are shown in the diagram below, how much profit will this producer earn if the price of a motorcycle is US\$ 1,500?
- US\$ 35,000
 - US\$ 65,000
 - US\$ 125,000
 - US\$ 750,000
15. Refer to problem 14. If the price of a motorcycle is US\$ 1,250, in the short run, what is the possible number of motorcycle produced by this factory for profit-maximization?
- 500
 - 400
 - 300
 - 0



16. COMAC and Embraer are considering entering the market for narrow-body jets. The table below represents the strategies and corresponding payoffs of the two manufacturers in different scenarios; in each cell containing two numbers, the left number represents the payoff earned by COMAC, while the right one represents the payoff of Embraer. If **COMAC moves first**, what is the sub-game perfect equilibrium (SPE: the equilibrium you get by backward induction in an extensive form game) in this game?
- Embraer enters and COMAC does not enter.
 - Embraer does not enter and COMAC enters.
 - Embraer enters and COMAC enters.
 - Embraer does not enter and COMAC does not enter.

		Embraer	
		Enter	No Enter
COMAC	Enter	-1, -2	2, 0
	No Enter	0, 1	0, 0

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科目名稱：經濟學乙【企管系企管甲班碩士班乙組】

題號：441001

※本科目依簡章規定「不可以」使用計算機(混合題)

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貳、填充題（只需填寫答案；每小格 4 分，共 20 分）

1. 假設某國生產函數為 $Y=10AL-AL^2$ ，其中 Y 為產出， A 為總要素生產力， L 為總勞動工時。若該國總要素生產力 $A=2$ ，且在無彈性的勞動供給之下，總勞動工時 $L=4$ ，則長期下的全國產出為 (1)，均衡實質工資為 (2)。
2. 假設某一封閉經濟體系某一年的部分總體經濟資料如下： $Y=10,000$ ， $C=6,000$ ， $T=1,500$ ， $G=1,700$ ；其中 Y 為 GDP， C 為消費支出， T 為稅收， G 為政府購買。另外，該國投資函數為 $I=3,000-100r$ ，其中 r 為以百分比所表示的實質利率。則此封閉經濟體系均衡實質利率為 (3)、全國儲蓄(national saving)為 (4)、私人儲蓄(private saving)為 (5)。

參、計算申論題（共計 20 分；請簡附計算或推導過程）

1. （20 分）設若你在花蓮慕谷慕魚觀光區裡面開熱炒店，C 店。觀光區原住民並沒有外食的需求，只有觀光客才會去你的店裡消費。為了簡化起見，假設你賣套餐的邊際成本（marginal cost）是 NT80 元（水平線），沒有固定成本。雖然 C 店曾是那一帶唯一的一家熱炒店，但是前年平地人在觀光區的入口處也開了一家熱炒店，M 店。在慕谷慕魚的道路可讓外車隨意進出的情況下，對觀光客來說，開車往返於入口處的 M 店和裡面的 C 店幾乎是沒有成本的。而在當地的道路可讓外車隨意進出的情況下，平均每天來訪的觀光客約為 900 人，早上 600 人（有中午用餐需求），下午則為 300 人（無中午用餐需求）。此外，你和 M 店賣的餐點對消費者來說也幾乎沒有差別，你們只能在價格上作競爭。為簡化起見，M 店賣套餐的邊際成本是 NT70 元，也沒有固定成本。
 - a. 若套餐的價格只能設為整數，請寫下在 Nash equilibrium 時，兩組可能的套餐價格。（5 分）
 - b. 近來因大量外車（尤其是大型車輛）湧入慕谷慕魚，帶來大量垃圾、汙染與交通擁塞，去年在原居民不堪其擾的情況下，決定封路。觀光客現在欲進入該區，只能步行，不得開車。慕谷慕魚在封路後平均每天的觀光客預計將縮減為 450 人，早上預計有 300 人步行進入（假設均在上午八點前入山），而下午則有約 150 人入山。若上午步行進入的觀光客，於一個上午的遊玩後，均有用餐的需求。不過，要讓他們於中午用餐時間由區內步行到入口的 M 店用餐，除非你額外付給他們至少 NT50 元（步行到入口的成本為 NT50 元）。而下午入山的遊客，則悉數在外地用完餐後才會到達入口步行入山。若套餐的價格只能設為整數，請寫下在 Nash equilibrium 時，兩組可能的套餐價格。（5 分）
 - c. 然而，實務上，開熱炒店不可能沒有固定成本。承 a 小題，在沒有封路的情況下，現假設 C 店賣套餐的邊際成本是 NT60 元（水平線），每月的固定成本為 NT300,000 元，平均每月營運 25 天，故攤提到每天的固定成本為 NT12,000 元；而 M 店的邊際成本則為 NT50 元，每月亦營運 25 天，平均攤提到每天的固定成本則是 NT18,000 元。兩間店休假日期皆相同。若套餐的價格只能設為整數，請討論在短期的情況下，於 Nash equilibrium 時兩組可能的套餐價格。由此三小題觀之，請問你（C 店老闆）是否應支持封山？（10 分）

國立中山大學 104 學年度碩士暨碩士專班招生考試試題

科目名稱：經濟學丙【企管系企管甲班碩士班丙組】

題號：441002

※本科目依簡章規定「不可以」使用計算機(混合題)

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壹、單選題〈1 至 10 題為中文題，每題 3 分；11 題至 16 題為英文題，每題 5 分；總計 60 分〉

1. 下列敘述何者為偽？
 - a. 名目 GDP 是以當期年產品價格計算的生產價值
 - b. GDP deflator 是以當期年產品數量作為計算物價指數的權數
 - c. CPI 是以當期年消費品數量作為計算物價指數的權數
 - d. 內生變數是模型設立者想藉由模型來決定的變數
 - e. 自發性因素變動本質上屬於外生變數的變動
2. 下列何者會造成勞動需求曲線向左移動？
 - a. 產品售價上升
 - b. 實體資本數量減少
 - c. 生產技術進步
 - d. 僱工成本上升
 - e. 以上 ABCD 都會使勞動需求曲線左移
3. 假設安倍經濟學只是增加貨幣供給，沒有搭配其他提升經濟體系生產效率的做法。這樣的安倍經濟學在長期下將使實質利率__，物價水準__，實質產出__。
 - a. 下降，增加，增加
 - b. 下降，增加，不變
 - c. 增加，下降，下降
 - d. 不變，增加，不變
 - e. 下降，下降，下降
4. 若政府支出與政府稅收等量減少，則
 - a. 實質利率上升，投資支出上升
 - b. 實質利率上升，消費支出下降
 - c. 實質利率下降，消費支出下降
 - d. 實質利率下降，投資支出上升
 - e. 實質利率不變，投資支出不變
5. 下列何者不是 AD 曲線呈負斜率的原因？
 - a. 較高物價水準使實質財富降低，消費支出減少
 - b. 較高物價水準使貿易餘額降低
 - c. 較高物價水準使實質貨幣需求上升，利率上升，投資支出減少
 - d. 較高物價水準使實質貨幣供給降低，利率上升，投資支出減少
 - e. 以上 ABCD 都是 AD 曲線呈負斜率的原因
6. 金融創新使貨幣需求減少，將使
 - a. IS 曲線左移
 - b. LM 曲線左移
 - c. AD 曲線右移
 - d. 短期總合供給(SRAS)曲線右移
 - e. 以上皆非
7. 短期下的凱因斯模型中，原油價格下降將使產出__，實質利率__。
 - a. 上升，下降
 - b. 上升，上升
 - c. 下降，上升
 - d. 下降，下降
 - e. 以上皆非

國立中山大學 104 學年度碩士暨碩士專班招生考試試題

科目名稱：經濟學丙【企管系企管甲班碩士班丙組】

題號：441002

※本科目依簡章規定「不可以」使用計算機(混合題)

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8. 下列敘述何者為偽？
- 如果貨幣數量的衡量為 M1，活期存款利率上升將使實質貨幣需求上升
 - 瓦拉斯法則(Walras Law)保證貨幣市場與債券市場都會達到均衡
 - 自然失業率上升使短期菲利浦曲線右移
 - 短期總合供給曲線與短期菲利浦曲線具有一對一的對應關係
 - 總要素生產力上升使長期總合供給曲線右移
9. 長期下，下列何者因素會使新台幣升值？
- 美國政府購買增加
 - 中國大陸國民所得下降
 - 台灣實施緊縮性財政政策
 - 台灣實施擴張性貨幣政策
 - 以上皆非
10. 長期下，一小型開放經濟體系投資需求外生減少，此將使國際利率_____，此經濟體當期帳_____
- 下降；下降
 - 不變；上升
 - 下降；上升
 - 不變；下降
 - 以上皆非
11. Recently, scientists have developed an efficient method to transform corn into fuel, and some companies decide to use corn to produce fuel. At the same time, climate change is increasing the cost to grow corn; farmers have to use more fertilizer, insecticide, etc. What will happen to the equilibrium price and quantity in the market for corn in the world?
- The equilibrium quantity will increase but the equilibrium price will be uncertain.
 - The equilibrium quantity will decrease but the equilibrium price will be uncertain.
 - The equilibrium price will decrease but the equilibrium quantity will be uncertain.
 - The equilibrium price will increase but the equilibrium quantity will be uncertain.
12. Around 90 years ago, the main products of Taiwan were rice and sugar; a farm could be used for rice production or cane (甘蔗) production. The rice was basically exported to Japan. In 1920s, the price of rice in Japan greatly increased. What would happen to the equilibrium price and quantity of cane in Taiwan?
- The equilibrium price would decrease, but the equilibrium quantity would increase.
 - The equilibrium price would decrease, and the equilibrium quantity would decrease, too.
 - The equilibrium price would increase, but the equilibrium quantity would decrease.
 - The equilibrium price would increase, and the equilibrium quantity would increase, too.
13. Peter's factory produces a toxic waste by-product. If Peter dumps it in the river, he causes damage to John, a fisherman. Peter can install a filter, in which case John will suffer no damage. The following table shows their payoffs in two scenarios. Which statement is true below?
- If the government prohibits Peter from polluting the river, it will be **socially** optimal.
 - If the river is John's property, he must stop Peter from polluting the river to maximize his payoff.
 - If John has the right to keep the river clean, Peter will choose to compensate John and keep polluting the river.
 - If Peter has the right to pollute, he will not to pollute the river because of John's compensation (補償金).

國立中山大學 104 學年度碩士暨碩士專班招生考試試題

科目名稱：經濟學丙【企管系企管甲班碩士班丙組】

題號：441002

※本科目依簡章規定「不可以」使用計算機(混合題)

共 4 頁第 3 頁

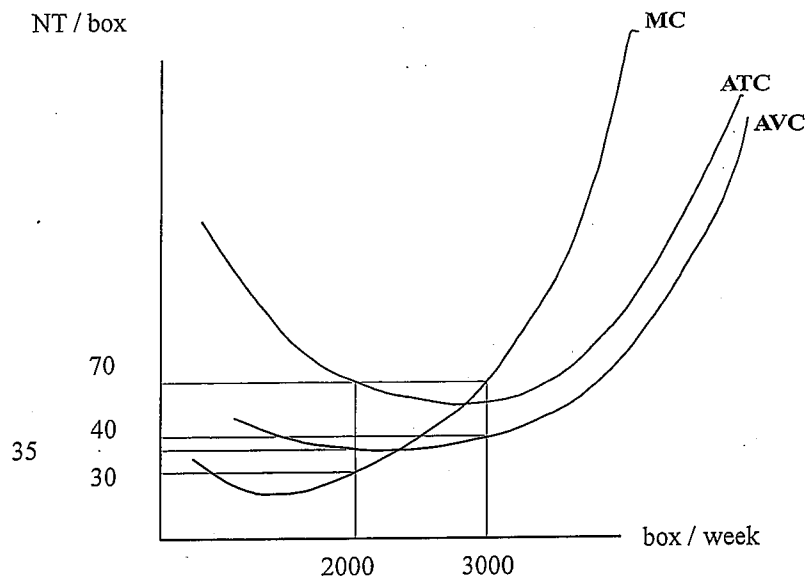
	Pollution	No pollution
Peter	US\$ 1500/day	US\$ 1300/day
John	US\$ 150/day	US\$ 300/day

14. For the lunch box (便當) seller whose marginal, average variable, and average total cost curve in the short run (in a week) are shown in the diagram below, how much profit will this seller earn if the price of each lunch box is NT30?

- a. NT 0
- b. NT -10,000
- c. NT -70,000
- d. NT -80,000

15. Refer to problem 14. How much profit will this seller earn if the price of each lunch box is NT70?

- a. NT 90,000
- b. NT 80,000
- c. NT 20,000
- d. NT 10,000



16. COMAC and Embraer are considering entering the market for narrow-body jets. The table below represents the strategies and corresponding payoffs of the two manufacturers in different scenarios; in each cell containing two numbers, the left number represents the payoff earned by COMAC, while the right one represents the payoff of Embraer. If **Embraer moves first**, what is the sub-game perfect equilibrium (SPE: the equilibrium you get by backward induction in an extensive form game) in this game?

- a. Embraer enters and COMAC does not enter.
- b. Embraer does not enter and COMAC enters.
- c. Embraer enters and COMAC enters.
- d. Embraer does not enter and COMAC does not enter.

		COMAC	
		Enter	No Enter
Embraer	Enter	-2, -1	1, 0
	No Enter	0, 2	0, 0

國立中山大學 104 學年度碩士暨碩士專班招生考試試題

科目名稱：經濟學丙【企管系企管甲班碩士班丙組】

題號：441002

※本科目依簡章規定「不可以」使用計算機(混合題)

共 4 頁第 4 頁

貳、填充題（只需填寫答案；每小格 4 分，共 20 分）

1. 假設某國生產函數為 $Y=10AL-AL^2$ ，其中 Y 為產出， A 為總要素生產力， L 為總勞動工時。若該國總要素生產力 $A=2$ ，且在無彈性的勞動供給之下，總勞動工時 $L=4$ ，則長期下的全國產出為__ (1) __，均衡實質工資為__ (2) __。
2. 假設某一封閉經濟體系某一年的部分總體經濟資料如下： $Y=10,000$ ， $C=6,000$ ， $T=1,500$ ， $G=1,700$ ；其中 Y 為 GDP， C 為消費支出， T 為稅收， G 為政府購買。另外，該國投資函數為 $I=3,000-100r$ ，其中 r 為以百分比所表示的實質利率。則此封閉經濟體系均衡實質利率為__ (3) __、全國儲蓄(national saving)為__ (4) __、私人儲蓄(private saving)為__ (5) __。

參、計算申論題（共計 20 分；請簡附計算或推導過程）

1. （20 分）設若你在花蓮慕谷慕魚觀光區裡面開熱炒店，C 店。觀光區原住民並沒有外食的需求，只有觀光客才會去你的店裡消費。為了簡化起見，假設你賣套餐的邊際成本（marginal cost）是 NT80 元（水平線），沒有固定成本。雖然 C 店曾是那一帶唯一的一家熱炒店，然而，前年平地人在觀光區的入口處也開了一家熱炒店，M 店。在慕谷慕魚的道路可讓外車隨意進出的情況下，對觀光客來說，開車往返於入口處的 M 店和裡面的 C 店幾乎是沒有成本的。而在當地的道路可讓外車隨意進出的情況下，平均每天來訪的觀光客約為 900 人，早上 600 人（有中午用餐需求），下午則為 300 人（無中午用餐需求）。此外，你和 M 店賣的餐點對消費者來說也幾乎沒有差別，你們只能在價格上作競爭。為簡化起見，M 店賣套餐的邊際成本是 NT70 元，也沒有固定成本。
 - a. 若套餐的價格只能設為整數，請寫下在 Nash equilibrium 時，兩組可能的套餐價格。（5 分）
 - b. 近來因大量外車（尤其是大型車輛）湧入慕谷慕魚，帶來大量垃圾、汙染與交通擁塞，去年在原居民不堪其擾的情況下，決定封路。觀光客現在欲進入該區，只能步行，不得開車。慕谷慕魚在封路後平均每天的觀光客預計將縮減為 450 人，早上預計有 300 人步行進入（假設均在上午八點前入山），而下午則有約 150 人入山。若上午步行進入的觀光客，於一個上午的遊玩後，均有用餐的需求。不過，要讓他們於中午用餐時間由區內步行到入口的 M 店用餐，除非你額外付給他們至少 NT50 元（步行到入口的成本為 NT50 元）。而下午入山的遊客，則悉數在外地用完餐後才會到達入口步行入山。若套餐的價格只能設為整數，請寫下在 Nash equilibrium 時，兩組可能的套餐價格。（5 分）
 - c. 然而，實務上，開熱炒店不可能沒有固定成本。承 a 小題，在沒有封路的情況下，現假設 C 店賣套餐的邊際成本是 NT60 元（水平線），每月的固定成本為 NT300,000 元，平均每月營運 25 天，故攤提到每天的固定成本為 NT12,000 元；而 M 店的邊際成本則為 NT50 元，每月亦營運 25 天，平均攤提到每天的固定成本則是 NT18,000 元。兩間店休假期皆相同。若套餐的價格只能設為整數，請討論在短期的情況下，於 Nash equilibrium 時兩組可能的套餐價格。由此三小題觀之，請問你（C 店老闆）是否應支持封山？（10 分）

國立中山大學 104 學年度碩士暨碩士專班招生考試試題

科目名稱：微積分丙【企管系企管甲班碩士班丙組選考】

題號：441005

※本科目依簡章規定「不可以」使用計算機(問答題)

共 1 頁第 1 頁

請按題號順序在答案卷上作答，並請寫出運算過程。

1. Find $\frac{dy}{dx}$ where (15%)

a. $y = \pi^{-\sqrt{x}} + \pi^{\sqrt{x}} \quad x > 0$

b. $y^{2/3} + x^{2/3} = 1,$

c. $y = \left(x - \frac{1}{x}\right)^4.$

2. Graph the function $f(x) = x + \sin x$. $0 \leq x \leq 2\pi$ State all the extrema, critical points, increasing and decreasing, concave up and/or down intervals. (15%)

3. Find the following definite and indefinite integrations. (25%)

a. $\int_1^9 \frac{dx}{\sqrt{x}}$

b. $\int_0^3 \frac{dx}{(2x-1)^{2/3}}$

c. $\int x \ln x \, dx$

d. $\int \frac{dx}{x^2 - x - 12}$

e. $\int_0^2 \int_{y/2}^1 ye^{x^3} \, dx \, dy$

4. Determine the following converge. If yes, please find the limit(s). (25%)

a. $\lim_{x \rightarrow \infty} \frac{e^{3x} - e^{-3x}}{3x}$

b. $\lim_{x \rightarrow 2^-} \sqrt{x^2 - 4}$

c. $\sum_{n=1}^{\infty} \left(\frac{1}{n}\right)^n$

d. $\sum_{n=1}^{\infty} \frac{3}{n+4}$

e. $\sum_{n=1}^{\infty} \frac{1}{n!}$

5. Use power series to estimate $\int_0^1 e^{-x^2} \, dx$ to the fourth decimal point. (10%)

6. 某一小鎮人口在 2000 年有 250,000 人，到了 2010 年增到 300,000 人。假設人口呈指數增長，增長的速率是常數的話 (grow exponentially with a constant rate)，那麼到 2030 年小鎮人口會有多少？ (10%)

國立中山大學 104 學年度碩士暨碩士專班招生考試試題

科目名稱：商用統計學丙【企管系企管甲班碩士班丙組選考】

題號：441004

※本科目依簡章規定「不可以」使用計算機(混合題)

共 5 頁第 1 頁

Notation and some information:

iid: identically independently distributed.

$N(\mu, \sigma^2)$: normal distribution with mean μ and variance σ^2 .

$exp(\lambda)$ is the exponential distribution with mean $\frac{1}{\lambda}$.

cdf: cumulative distribution function. pdf: probability density function.

$\Phi(t)$: cdf of standard normal distribution.

$\Phi(0.90)=1.28$ and $\Phi(0.95)=1.645$ and $\Phi(0.975)=1.96$ and $\Phi(0.99)=2.32$.

MGF: moment generating function. $M_X(t)$: moment generating function for the random variable X .

$Cov(X, Y)$ is the covariance of the random variables X and Y . $Var(X)$ is the variance of the random variable X . $E(X)$ is the expectation of the random variable X .

1. Consider the following linear regression model:

$$Y_i = bX_i + \epsilon_i, i = 1, \dots, n,$$

where Y_i is the i th response variable, X_i is the i th predictor variable, b is the regression coefficient, and $\epsilon_i, i = 1, \dots, n$ are the iid normal errors with mean 0 and variance σ^2 . Please answer the following questions:

(10%)(a) Please calculate the least squared estimator of b .

(5%)(b) Denote the least squared estimator of b as \hat{b} . Give a reasonable unbiased estimator for σ^2 expressed by $Y_i, i = 1, \dots, n, X_i, i = 1, \dots, n$ and \hat{b} .

Note: The intercept in this linear regression model is 0.

(15%)2. X_1, \dots, X_m are iid random variables with distribution $N(\mu_1, \sigma^2)$ and Y_1, \dots, Y_n are iid $N(\mu_2, \sigma^2)$. $X_i, i = 1, \dots, m$ and $Y_j, j = 1, \dots, n$ are independent. Please conduct a two-sample t test (two-sided test) to test the null hypothesis $\mu_1 = \mu_2$ with significance level α .

Note: You need to specify the null hypothesis, alternative hypothesis, the test statistic, and the rejection region.

3. Assume X_1, \dots, X_n are identically independently distributed with probability density function

$$f(x, \theta) = \frac{1}{2\theta} \exp\left(-\frac{|x|}{\theta}\right)$$

(10%)(a) Find the method of moment estimate of θ .

(10%)(b) Find the maximum likelihood estimate of θ .

國立中山大學 104 學年度碩士暨碩士專班招生考試試題

科目名稱：商用統計學丙【企管系企管甲班碩士班丙組選考】

題號：441004

※本科目依簡章規定「不可以」使用計算機(混合題)

共 5 頁第 2 頁

Multiple Choice Questions (Note: only one choice is correct). 5 points for each question.

1. Assume X_1, \dots, X_n are iid random variables with distribution $N(\mu, \sigma^2)$. We construct a confidence interval for μ , then the length of the confidence interval for μ would decrease if

- (a) standard error for μ increases.
- (b) σ^2 increases.
- (c) n increases.
- (d) sample mean \bar{X} increases.

2. A survey of the viewing habits of a group reveals the following information:

- (a) 30% watch gymnastics
- (b) 30% watch basketball
- (c) 20% watch soccer
- (d) 15% watch gymnastics and basketball
- (e) 10% watch basketball and soccer
- (f) 10% watch gymnastics and soccer
- (g) 4% watch all three sports

What is the percentage of the group that watch none of the three sports?

- (a) 0.49.
- (b) 0.51.
- (c) 0.53.
- (d) 0.55.

國立中山大學 104 學年度碩士暨碩士專班招生考試試題

科目名稱：商用統計學丙【企管系企管甲班碩士班丙組選考】

題號：441004

※本科目依簡章規定「不可以」使用計算機(混合題)

共 5 頁第 3 頁

3. Assume the $U \sim Unif[0, 1]$. Which of the following statements is wrong?

(a) $E(U) = 1/2$.

(b) Let $X \sim exp(1)$ and $F(t)$ be its cdf, then the distribution of $F(X)$ is $Unif[0, 1]$.

(c) $1 - U \sim Unif[0, 1]$.

(d) $Cov(U, 1 - U) \leq -\frac{1}{6}$.

Note: If $X \sim Unif[0, 1]$, then the pdf (of X) $f(x) = 1$ if $x \in [0, 1]$; $f(x) = 0$ otherwise.

4. Assume X_1, \dots, X_n are iid normal random variables with mean μ and variance σ^2 . We conduct a test to test the null hypothesis $\mu = \mu_0$, the power of the test would increase if

(a) n decreases.

(b) type II error increases.

(c) the significance level α increases.

(d) standard error for μ increases.

5. X_1, \dots, X_n are iid random variables with probability density function $f(x, \theta)$. Which of the following statements about maximum likelihood estimator (MLE) for θ is wrong?

(a) MLE is usually asymptotically normally distributed.

(b) MLE is not always unbiased.

(c) MLE uses the information of likelihood.

(d) MLE uses only the first and the second moments.

國立中山大學 104 學年度碩士暨碩士專班招生考試試題

科目名稱：商用統計學丙【企管系企管甲班碩士班丙組選考】

題號：441004

※本科目依簡章規定「不可以」使用計算機(混合題)

共 5 頁 第 4 頁

6. Toss a fair coin 10000 times. Let A be the event that the number of heads is between 4900 and 5100. Which number is closest to the probability of A ?

- (a) 0.87
- (b) 0.91
- (c) 0.95
- (d) 0.99.

7. X and Y are two normal random variables. $X \sim N(0, 4)$ and $Y \sim N(0, 4)$. Which of the following statements is correct?

- (a) (X, Y) are bivariate normal.
- (b) $Cov(X, Y) \leq 4$.
- (c) $Var(X + Y) = 8$.
- (d) $E(X + Y) \geq 2$.

8. X and Y are two independent random variables with MGF $M_X(t)$ and $M_Y(t)$, respectively and a and b are two positive constants. Which of the following statements is wrong?

- (a) $M_{aX}(t) = M_X(at)$
- (b) $M_{X+Y}(t) = M_X(t)M_Y(t)$
- (c) $M_X''(0) \geq Var(X)$, where $M_X''(0)$ is the second derivative of $M_X(t)$ at 0.
- (d) $M_{(X+b)}(t) = e^b M_X(t)$

國立中山大學 104 學年度碩士暨碩士專班招生考試試題

科目名稱：商用統計學丙【企管系企管甲班碩士班丙組選考】

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※本科目依簡章規定「不可以」使用計算機(混合題)

共 5 頁第 5 頁

9. Which of the following statements about distribution is wrong?

- (a) The expectation and variance of Poisson distribution are the same.
- (b) Sum of two independent Bernoulli random variables with same success rates p are Binomial random variables.
- (c) If $X \sim \exp(1)$, then X^2 has gamma distribution.
- (d) Assume X and Y are two independent random variables. $X \sim \exp(2)$ and $Y \sim \exp(2)$. $X + Y$ has gamma distribution.

10. A researcher wishes to estimate the average height of all students at National Sun Yat-sen University (NSYSU). He would randomly sample 30 students and measures their heights. He considers the following four ways of random sampling. Which way of random sampling do you think is most appropriate?

- (a) Go to the gym of the university and randomly select 30 students in the gym.
- (b) Stay at the main entrance of the university and randomly select 30 students who pass the entrance.
- (c) Go to one of the classes of the university and randomly select 30 students in that class.
- (d) Go to the registration office of the university and take the list of all students and randomly select 30 students from the list.