I. Vocabulary in Context (20%)
Read the passage and choose the word or phrase that completes the sentence.

1. In law, a nuisance is an act that has no legal justification and which interferes with the safety or comfort of other people. Public nuisances, those which are injurious to the community, may be prosecuted as crimes.
   A public nuisance is
   (A) a protective law (B) an injurious act (C) a legal justification (D) a safety precaution

2. Waste that has been made useful is said to have been recycled. Empty bottles can be returned and used again. Other things that can be recycled are paper, plastic, and metals. Besides the aesthetic value of recycling, there are many environmental reasons to do so.
   Recycled material is
   (A) strewn garbage (B) common waste materials (C) paper, glass, and coffee (D) reused waste

3. Seventeenth-century attempts to preserve anatomical specimens brought about modern embalming, the preservation of the body after death by artificial chemical means. The most common agent used today is formaldehyde, which is infused to replace body fluids.
   Embalming is
   (A) death by a chemical means (B) the preservation of anatomical specimens (C) a common agent related to formaldehyde (D) the replacement of body chemicals

4. A composer indicates to a musician how a musical passage is to be played through the use of dynamic markings. The symbol for soft is \( p \), whereas the one for loud is \( f \).
   The intensity—loudness or softness—depends on the extent or amplitude of the vibrations made by the particular instrument being played.
   Intensity is
   (A) dynamic markings (B) the symbol for soft and loud (C) the extent of the vibrations (D) loudness or softness

5. Oral history, the use of the tape recorder to capture memories of the past in private interviews, has become increasingly popular among professional historians. Studs Terkel is the best known of American historians to use this method for recording historical events. He interviewed people about their experiences during important events such as the Great Depression and World War II.
   Oral history is
   (A) private interviews (B) the recording of people’s memories (C) experiences during important events (D) the history of tape recording

6. According to many psychologists, phobias, or irrational fears, represent or are symbolic of repressed anxiety. They are usually persistent, illogical, and intense. The most useful treatment has been through behavior-modification therapy.
   A phobia is
   (A) a psychologist (B) a fear (C) a symbol (D) a treatment
7. The nervous system of an animal is not a simple electrical circuit. When a signal gets to one end of a nerve cell, the cell sprays various molecules out for the next cell to pick up. The central nervous system of grasshoppers, fruit flies, and other insects includes both the brain and a chain of simpler segmental ganglia, or groups of nerve cells.

Ganglia are

(A) nervous systems (B) electrical circuits (C) groups of nerve cells (D) the molecules that the cells send out

8. The Pueblo Indians are those who dwell in pueblos, a name derived from the Spanish word for “village.” The pueblo is usually built against the face of a cliff and generally consists of connected houses rising in a series of receding terraces. The roof of one house is the yard or patio of the next house. The kiva, where Pueblo Indians hold their secret ceremonies, is entered by an opening in the roof.

A kiva is a

(A) patio (B) ceremonial room (C) series of terraces (D) Pueblo Indian village

9. At least fifty weed species fight off competitors by emitting toxins from their roots, leaves, or seeds. These poisons do their work in different ways, such as inhibiting germination of seeds and destroying photosynthesis abilities.

Toxins are

(A) roots (B) leaves (C) seeds (D) poisons

10. While the methods used at other learning institutions are based on the theory that children need a teacher, the Montessori method is based on the theory that a child will learn naturally if placed in an environment rich in learning materials to play with. These materials are suited to children’s abilities and interests, and learning takes place as the child plays. Children following this method are autodidactic, and only when a child needs help does the teacher step in.

Autodidactic is

(A) playful (B) self-taught (C) able to learn (D) dependent on teachers

II. Grammar (20%)

Each of the following sentences has four underlined parts marked A, B, C, and D. Identify the part of the sentence that is incorrect.

11. It was not until 1937 when the southernmost source of the Nile River was discovered.

A B C D

12. Platinum is a rare and value metal, white in color, and easy to work.

A B C D

13. During the two centuries between Herschel and Voyager, relatively little learned about the planet Uranus.

A B C D
14. Some conservationists attempt to save rare domestic farm animal, such as the Tamworth pig.

15. The head proctor tells the students when they should begin the exam, how long they have to complete it, and what the procedures are for turning in.

16. The bodies of cold-blooded animals have the same temperature their surroundings, but those of warm-blooded animals do not.

17. The oceans contain many forms of life that has not yet been discovered.

18. Before 1992, Bobby Fischer had not played in other chess tournament since winning the Chess World Championship in 1972.

19. Perhaps was his defiance against his parents' attitude that led Salvatore Ferragamo to fame as the shoemaker for the world's most famous women.

20. The United Nations Organization maintains what water will be at the heart of many future international disputes.

III. Reading Comprehension (60%)
This section contains reading passages and questions about the passages. Read the passages carefully and choose the best answer to each of the questions.

The influenza virus is a single molecule composed of millions of individual atoms. Although bacteria can be considered a type of plant, secreting poisonous substances into the body of the organism they attack, viruses, like the influenza virus, are living organisms themselves. We may consider them regular chemical molecules since they have strictly defined atomic structure; but on the other hand, we must also consider them as being alive since they are able to multiply in unlimited quantities.

An attack brought on by the presence of the influenza virus in the body produces a temporary immunity, but, unfortunately, the protection is against only the type of virus that caused the influenza. Because the disease can be produced by any one of three types, referred to as A, B, or C, and many varieties within each type, immunity to one virus will not prevent infection by other types or strains. Protection from the influenza virus is also complicated by the fact that immunity to a specific virus may periodically change characteristics. The problem of mutation makes it difficult to carry out a successful immunization program. Vaccines are often ineffective against newly evolving strains.
Approximately every ten years, worldwide epidemics of influenza called pandemics occur. Thought to be caused by new strains of type-A virus, these pandemic viruses have spread rapidly, infecting millions of people.

Vaccines have been developed that have been found to be 70 to 90 percent effective for at least six months against either A or B types of the influenza virus, and a genetically engineered live-virus vaccine is under development. Currently, the United States Public Health Service recommends annual vaccination only for those at greatest risk of complications from influenza, including pregnant women and the elderly. Nevertheless, many other members of the general population request and receive flu shots every year, and even more are immunized during epidemic or pandemic cycles.

21. Which of the following is the main topic of the passage?
(A) The influenza virus (B) Immunity to disease (C) Bacteria (D) Chemical molecules

22. According to this passage, bacteria are
(A) poisons (B) very small (C) larger than viruses (D) plants

23. The world “strictly” in line 5 could be best replaced by
(A) unusually (B) completely (C) broadly (D) exactly

24. The atomic structure of viruses
(A) is variable (B) is strictly defined (C) cannot be analyzed chemically (D) is more complex than that of bacteria

25. Why does the author say that viruses are alive?
(A) They have a complex atomic structure. (B) They move. (C) They multiply. (D) They need warmth and light.

26. The word “unlimited” in paragraph 1 could best be replaced by which of the following?
(A) very small (B) very large (C) very similar (D) very different

27. According to the passage, how does the body react to the influenza virus?
(A) It prevents further infection to other types and strains of the virus. (B) It produces immunity to the type and strain of virus that invaded it. (C) It becomes immune to types A, B, and C viruses, but not to various strains within the types. (D) After a temporary immunity, it becomes even more susceptible to the type and strain that caused the influenza.

28. The passage discusses all of the following as characteristics of pandemics EXCEPT
(A) they spread very quickly (B) they are caused by type-A virus (C) they are regional outbreaks (D) they occur once every ten years.
The Federal Reserve System, as an independent agency of the United States government, is charged with overseeing the national banking system. Since 1913 the Federal Reserve System, commonly called the Fed, has served as the central bank for the United States. The system consists of twelve District Reserve Banks and their branch offices, along with several committees and councils. All national commercial banks are required by law to be members of the Fed, and all deposit-taking institutions like credit unions are subject to regulation by the Fed regarding the amount of deposited funds that must be held in reserve and that by definition, therefore, are not available for loans. The most powerful body is the seven-member Board of Governors in Washington, appointed by the President and confirmed by the Senate.

The System’s primary function is to control monetary policy by influencing the cost and availability of money and credit through the purchase and sale of government securities. If the Federal Reserve provides too little money, interest rates tend to be high, borrowing is expensive, business activity slows down, unemployment goes up, and danger of recession is augmented. If there is too much money, interest rates decline, and borrowing can lead to excess demand, pushing up prices and fueling inflation.

The Fed has several responsibilities in addition to controlling the money supply. In collaboration with the U.S. Department of the Treasury, the Fed puts new coins and paper currency into circulation by issuing them to banks. It also supervises the activities of member banks abroad, and regulates certain aspects of international finance.

It has been said that the Federal Reserve is actually a fourth branch of the United States government because it is composed of national policy makers. However, in practice, the Federal Reserve does not stray from the financial policies established by the executive branch of the government. Although it is true that the Fed does not depend on Congress for budget allocations, and therefore is free from the partisan politics that influence most of the other governmental bodies, it is still responsible for frequent reports to the Congress on the conduct of monetary policies.

29. Which of the following is the most appropriate title for the passage?
   (A) Banking (B) The Federal Reserve System (C) The Board of Governors (D) Monetary Policies

30. The word “overseeing” in paragraph 1 is closest in meaning to
   (A) supervising (B) maintaining (C) financing (D) stimulating

31. The word “confirmed” in paragraph 1 could be best replaced by
   (A) modified (B) considered (C) examined (D) approved

32. According to the passage, the principal responsibility of the Federal Reserve System is
   (A) to borrow money (B) to regulate monetary policies (C) to print government securities (D) to appoint the Board of Governors

33. The word “securities” in paragraph 2 is intended to mean
   (A) debts (B) bonds (C) protection (D) confidence
34. What happens when the Federal Reserve provides too little money?
   (A) Demand for loans increases. (B) Unemployment slows down. (C) Interest rates go up. (D) Businesses expand.

35. In paragraph 2, the author suggests that inflation is caused by
   (A) high employment rates (B) too much money in the economy (C) very high fuel prices (D) a limited supply of goods

36. What does the author mean by the statement, "However, in practice, the Federal Reserve does not stray from the financial policies established by the executive branch of the government?"
   (A) The Fed is more powerful than the executive branch of the government. (B) The policies of the Fed and those of the executive branch of the government are not the same. (C) The Fed tends to follow the policies of the executive branch of the government. (D) The Fed reports to the executive branch of the government.

37. All of the following statements could be included in a summary of the passage EXCEPT:
   (A) The Federal Reserve is an independent agency of the United States government. (B) The Federal Reserve controls the flow of money and credit by buying and selling government security. (C) The Federal Reserve issues new coins and currency to banks. (D) The Federal Reserve receives its yearly budget from Congress.

The fact that most Americans live in urban areas does not mean that they reside in the center of large cities. In fact, more Americans live in the suburbs of large metropolitan areas than in the cities themselves.

The Bureau of the Census regards any area with more than 2,500 people as an urban area and does not consider boundaries of cities and suburbs. According to the Bureau, the political boundaries are less significant than the social and economic relationships and the transportation and communication systems that integrate a locale. The term used by the Bureau for an integrated metropolis is an MSA, which stands for Metropolitan Statistical Area. In general, an MSA is any area that contains a city and its surrounding suburbs and has a total population of 50,000 or more.

At the present time, the Bureau reports more than 280 MSAs, which together account for 75 percent of the US population. In addition, the Bureau recognizes eighteen megalopolises, that is, continuous adjacent metropolitan areas. One of the most obvious megalopolises includes a chain of hundreds of cities and suburbs across ten states on the East Coast from Massachusetts to Virginia, including Boston, New York, and Washington, D.C. In the Eastern Corridor, as it is called, a population of 45 million inhabitants is concentrated. Another megalopolis that is growing rapidly is the California coast from San Francisco through Los Angeles to San Diego.

38. Which of the following is the best title for the passage?
   (A) Metropolitan Statistical Areas (B) Types of Population Centers (C) The Bureau of the Census (D) Megapolises
39. According to the passage, where do most Americans live?
(A) In the center of cities (B) In the suburbs surrounding large cities (C) In rural areas (D) In small towns

40. According to the Bureau of the Census, what is an urban area?
(A) An area with 2,500 people or more (B) An area with at least 50,000 people (C) The eighteen largest cities (D) A chain of adjacent cities

41. Which of the following are NOT considered important in defining an urban area?
(A) Political boundaries (B) Transportation networks (C) Social relationships (D) Economic systems

42. The word “integrate” in paragraph 2 is closest in meaning to
(A) benefit (B) define (C) unite (D) restrict

43. The word “its” in paragraph 2 refers to
(A) the MSA’s (B) the area’s (C) the city’s (D) the population’s

44. The word “adjacent” in paragraph 3 is closest in meaning to
(A) beside each other (B) growing very fast (C) the same size (D) densely populated

45. According to the passage, what is a megapolis?
(A) One of the ten largest cities in the United States (B) One of the eighteen largest cities in the United States (C) One of the one hundred cities between Boston and Washington (D) Any number of continuous adjacent cities and suburbs

46. Why does the author mention the Eastern Corridor and the California coast in paragraph 3?
(A) As examples of megapolis (B) Because 75 percent of the population lives there (C) To conclude the passage (D) The Bureau of the Census is located there

Jacob Epstein’s sculptures were the focus of much controversy during the sculptor’s lifetime. Epstein was born in the United States of Russian-Jewish immigrants in 1880. He moved to Paris in his youth and later to England; where he eventually settled and took out British citizenship in 1907. His first major public commission, on a building in London, offended public taste because of the expressive distortion and nudity of the figures. In 1937, the Rhodesian government, which at that time owned the building, actually mutilated the sculptures to make them conform to the notions of decency. Many of Epstein’s monumental carvings received equally adverse criticism. While the general public denounced his work, many artists and critics praised it. They admired in particular the adversity of his work and noted the influence on it of primitive and ancient motifs from Africa and the Pacific. Today, Epstein’s work has received the recognition it deserves, and Epstein is considered one of the major sculptors of the twentieth century.

47. Concerning Epstein’s work, the tone of the article is
(A) critical (B) derisive (C) amusing (D) admiring
48. Which of the following was most probably an important influence on Epstein’s work?
(A) Russian painting (B) Public tastes (C) The Rhodesian government (D) African carvings

49. Today, a newly erected Epstein sculpture would probably
(A) be mutilated (B) conform to public opinions (C) be well received (D) be expressive

50. What does the author mean by the statement, “Many other Epstein’s monumental carvings received equally adverse criticism”?
(A) Many of Epstein’s monuments have been defaced (B) People have taken equal offense to other critical works of art. (C) Epstein’s monuments are usually denounced for their nudity. (D) Other sculptures of Epstein’s have elicited negative comments.
1. [20%]
   (1) Explain “the higher the price is, the more elastic the demand is”. You can always find a point on the demand curve at which the price elasticity of demand is unity.
   (2) Suppose the demand for a good is given as \( P = 1/2 - 1/2Q_d \). What are the price and quantity demanded at which the price elasticity of demand is unity. Suppose the supply is given as \( P = 1/4 Q_s \). What is the price elasticity of demand, when the market is clearing?
   (3) If the government intervenes the market and sets a price floor \( P = 6 \), what are the effects? How much is the deadweight loss? What is the relationship between the magnitude of the loss and the elasticity of the demand curve?

2. [15%]
   (1) Explain what is meant by “the law of diminishing marginal returns” and why that can be happen.
   (2) Show how a firm can adjust its production scale in the long run and illustrate its Isoquants. Explain what the Ridge lines are.

3. [15%]
   In a two-commodity economy let \( \phi \) be the price of commodity 1 in terms of commodity 2. Suppose the excess demand function for commodity 1 is given by \( 1 - 4\phi + 5\phi^2 - 2\phi^3 \).
   (1) How many equilibria are there? Are they stable or unstable?
   (2) If there is an increase in the stock of commodity 1, how the result would be affected?
4. 「15%」
A firm produces one output that it sells in two markets. Market 1 is competitive and the firm sells its output there at the price of $60 per unit while the firm is a monopoly in Market 2 where the demand curve is given by $p_2 = 100 - q_2$. The firm’s production costs are given by $C(q) = (q_1 + q_2)^2$, where $q_1$ and $q_2$ are the quantities sold in Market 1 and 2, respectively. What are the values of $q_1$ and $q_2$ that satisfy the first-order and second-order conditions for profit maximization?

5. 「15%」
Each week, an individual consumes quantities $x$ and $y$ of two goods, and works for $l$ hours. These quantities are chosen to maximize the utility function

$$U(x, y, l) = \alpha \ln x + \beta \ln y + (1 - \alpha - \beta) \ln (L - l)$$

where $0 < \alpha, \beta < 1$ and $L$ is the maximum number of hours in a week that the individual can work. The individual faces the budget constraint $px + qy = wL + m$, where $p$ and $q$ are the prices of goods $x$ and $y$, $w$ is the wage rate and $m$ is the unearned income available to the individual.

(1) Define $\gamma = (\alpha + \beta)/(1 - \alpha - \beta)$. Assume that $m \leq \gamma w L$, find the optimal values $x^*, y^*$ and $l^*$

(2) Why do we need the restriction $m \leq \gamma w L$?

6. 「20%」
Consider the following model of wage and employment determination in a unionized firm. First the union makes a wage demand, $w$. The firm observes (and accepts) $w$ and then chooses employment, $L$. Suppose that the firm’s payoff is given by $\pi = L^\alpha - wL$, and that of the union is $u = (w - \alpha)L$, where $\alpha > 0$.

(1) Derive the unique SPE outcome.

(2) Show that the level of employment maximizing the sum of the payoffs $\pi + u$ strictly exceeds the SPE employment level derived in part (1).

(2) Discuss these results.
國立高雄大學九十三學年度研究所碩士班招生考試試題

系所組別：經濟管理研究所甲組  全球經貿組  科目：總體經濟學

1. (20%) 於一時期累代模型 (Overlapping Generation Model) 中，假設人們皆只活兩期 (如
青年期及老年期)，且於青年期時人們因工作而擁有 \( Y_1 \) 的所得，此時期的消費水準為
\( C_1 \)，剩餘的所得則用於投資每期淨報酬率為 \( r \) 的資產，以為老時做為養老金之用。而
人們於老年期時退休，政府給予養老金 \( Y_2 \)，此時期的消費水準為 \( C_2 \) (假設人口成長率
為 0)
(a) 試列出代表性個人的終生預算限制式。
(b) 假設代表性個人的終生效用函數為 \( U(C_1, C_2) = C_1 + C_2 \)，則此代表性個人該如何最適配
置其兩期消費？
(c) 試以圖形分析當政府增加養老金支付時，對此代表性個人終生效用之影響，假設
此代表性個人原先於青年期時之最終消費高於其當時之所得。
(d) 同 (c) 之分析，但若此代表性個人於青年期時之消費水準受限最多不得超過當時之
所得。

2. (20%) 請首先建構一個新凱因斯理論 (New-Keynesian Theory) 模型，其中包括對失業及
總供给之理論解剖；其次依據該模型分別探討 (a) Say’s Law 之正確性，(b) the neutrality of
money。

3. (20%) 在 IS-LM 模型中之設定，請首先說明在何種行為假定下，IS 曲線得以成為正斜
率，並據以陳述或證明模型之穩定條件 (stability condition)；其次依據建構之 IS-LM 模
型另加入政府預算限制式 (government budget constraint)，分別探討於 (a) 無財富效果
(wealth effect)，(b) 有財富效果下之總體經濟政策影響，並以圖形示之。

4. (15%) 試以 Mundell 的開放經濟模型為基礎，於一小型開放經濟且金融資本可完全移動的
體系下，中央銀行為了維持固定匯率，面對其國內需求不足時，分析其國內投資的利率
彈性 (絕對值) 大小對景氣循環的影響，並分析其可能遭遇的金融危機 (financial crisis)
為何？

5. (15%) 試以 Solow-Swan 的新古典成長理論個體分析說明下列政策分別對穩定態態
(steady state) 與黃金法則 (golden rule) 下的每人產出水準 (output per worker)、每人消費
與資本勞動比 (capital-labor ratio) 的影響
(a) 政府永久性的降低其政府赤字
(b) 政府進行研發以提升技術，使得設備等資本財的耗損率降低
(c) 政府成功的提升生育力，致人口成長率增加

6. (10%) 請在以下所提供的圖形中，於封閉經濟體系下，說明所問問題對產出 (Y)、勞動就
業 (M)、物價 (P)、名目利率 (i) 與名目工資率 (W) 等變數所造成之影響 (請以箭頭指示
變動方向：上升↑，下降↓，不變→，不確定?)，所有問題均不考慮 Pigou effect 及
Ricardian equivalence。
國立高雄大學九十三學年度研究所碩士班招生考試試題

系所組別：經濟管理研究所甲組

科目：總體經濟學

(a) 為融通政府支出增加，向私部門發行國庫券

(b) 銀行超額準備率增加

(c) 技術創新，增加勞動邊際生產力與投資邊際效率

(d) 以稅收減免來獎勵投資
1. The gamma function is defined by \( \Gamma(a) = \int_0^\infty x^{a-1} \exp(-x) \, dx \), \( 0 < a \). Compute \( \Gamma(7/2) \). (10%)

2. The manager of the paint company claims that the drying time of a type of paint is at most 4 hours. To conduct the hypothesis testing, the manager needs to determine sample size. Given \( \bar{X} = 4.82 \) and \( \sigma = 3 \), please answer the following questions.

(a) State null and alternative hypotheses.
(b) Given \( \alpha = 0.05 \), if the manager wants the power of the test equal to 0.975 when the true population mean is 5.8, how many observations does he need to sample? (10%)

3. A quality control plan for an assembly line involves sampling \( n \) finishing items per day and counting \( Y \), the number of defectives. If \( p \) denotes the probability of observing a defective, then \( Y \) has a binomial distribution, assuming that a large number of items are produced by the line. But \( p \) varies from day to day and is assumed to have a uniform distribution on the interval from 0 to 1.

(a) Find the unconditional probability mass function (pmf) for \( Y \).
(b) Find the expected value and variance of \( Y \). (20%)

4. Let \( X_1, X_2, \ldots, X_n \) be i.i.d. r.v.'s from the uniform distribution \( U(0, \theta) \). (20%)

(a) Find the maximum likelihood estimator (MLE) of \( \theta \).
(b) Find the uniformly minimum variance unbiased estimator (UMVUE) of \( \theta \).

5. A random sample of 16 observations was selected from each of four populations. A portion of the ANOVA table is given as follows. (10%)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>( F )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatments</td>
<td></td>
<td>400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(a) Provide the missing entries for the ANOVA table.
(b) Describe why the rejection region of the F-test is always on the right tail.
6. A labor economist runs the following two regressions using 6000 observations: (30%)

\[
\ln HOURS = 2.85 + 0.29 \ln \text{WAGE} + 0.06 \text{MALE} + 0.03 \text{KIDS5} \\
+ 0.07 \text{KIDS5} \times \text{MALE}, \quad R^2 = 0.065 \tag{1}
\]

\[
\ln HOURS = -1.97 + 0.20 \ln \text{WAGE} + 0.07 \text{MALE} - 0.02 \text{KIDS5} \\
+ 0.08 \text{KIDS5} \times \text{MALE} + 0.41 \text{AGE} - 0.008 \text{AGE2}, \quad R^2 = 0.099 \tag{2}
\]

HOUR: hours worked per week. WAGE: hourly wage.
AGE: age. AGE2: square of age.

\[
\text{MALE} = \begin{cases} 
1 & \text{if male} \\
0 & \text{otherwise}
\end{cases} \quad \text{KIDS5} = \begin{cases} 
1 & \text{if having kids less than 5 years old} \\
0 & \text{otherwise}
\end{cases}
\]

(a) State the assumptions of the regression model?
(b) Is the second regression a linear regression?
(c) Using the second equation, explain the economic meanings of the coefficients of \ln \text{WAGE} and \text{MALE}.
(d) Does the second model outperform the first one? Please lay out your hypothesis and decision rules, given \alpha = 0.05 (You do not need to actually conduct the test).
I. Vocabulary in Context (20%)
Read the passage and choose the word or phrase that completes the sentence.

1. In law, a nuisance is an act that has no legal justification and which interferes with the safety or comfort of other people. Public nuisances, those which are injurious to the community, may be prosecuted as crimes.
A public nuisance is
(A) a protective law (B) an injurious act (C) a legal justification (D) a safety precaution

2. Waste that has been made useful is said to have been recycled. Empty bottles can be returned and used again. Other things that can be recycled are paper, plastic, and metals. Besides the aesthetic value of recycling, there are many environmental reasons to do so.
Recycled material is
(A) strewn garbage (B) common waste materials (C) paper, glass, and coffee (D) reused waste

3. Seventeenth-century attempts to preserve anatomical specimens brought about modern embalming, the preservation of the body after death by artificial chemical means. The most common agent used today is formaldehyde, which is infused to replace body fluids.
Embalmng is
(A) death by a chemical means (B) the preservation of anatomical specimens (C) a common agent related to formaldehyde (D) the replacement of body chemicals

4. A composer indicates to a musician how a musical passage is to be played through the use of dynamic markings. The symbol for soft is \( p \), whereas the one for loud is \( f \). The intensity—loudness or softness—depends on the extent or amplitude of the vibrations made by the particular instrument being played.
Intensity is
(A) dynamic markings (B) the symbol for soft and loud (C) the extent of the vibrations (D) loudness or softness

5. Oral history, the use of the tape recorder to capture memories of the past in private interviews, has become increasingly popular among professional historians. Studs Terkel is the best known of American historians to use this method for recording historical events. He interviewed people about their experiences during important events such as the Great Depression and World War II.
Oral history is
(A) private interviews (B) the recording of people’s memories (C) experiences during important events (D) the history of tape recording

6. According to many psychologists, phobias, or irrational fears, represent or are symbolic of repressed anxiety. They are usually persistent, illogical, and intense. The most useful treatment has been through behavior-modification therapy.
A phobia is
(A) a psychologist (B) a fear (C) a symbol (D) a treatment
The nervous system of an animal is not a simple electrical circuit. When a signal gets to one end of a nerve cell, the cell sprays various molecules out for the next cell to pick up. The central nervous system of grasshoppers, fruit flies, and other insects includes both the brain and a chain of simpler segmental ganglia, or groups of nerve cells.

Ganglia are

(A) nervous systems (B) electrical circuits (C) groups of nerve cells (D) the molecules that the cells send out

8. The Pueblo Indians are those who dwell in pueblos, a name derived from the Spanish word for "village." The pueblo is usually built against the face of a cliff and generally consists of connected houses rising in a series of receding terraces. The roof of one house is the yard or patio of the next house. The kiva, where Pueblo Indians hold their secret ceremonies, is entered by an opening in the roof.

A kiva is a

(A) patio (B) ceremonial room (C) series of terraces (D) Pueblo Indian village

9. At least fifty weed species fight off competitors by emitting toxins from their roots, leaves, or seeds. These poisons do their work in different ways, such as inhibiting germination of seeds and destroying photosynthesis abilities.

Toxins are

(A) roots (B) leaves (C) seeds (D) poisons

10. While the methods used at other learning institutions are based on the theory that children need a teacher, the Montessori method is based on the theory that a child will learn naturally if placed in an environment rich in learning materials to play with. These materials are suited to children's abilities and interests, and learning takes place as the child plays. Children following this method are autodidactic, and only when a child needs help does the teacher step in.

Autodidactic is

(A) playful (B) self-taught (C) able to learn (D) dependent on teachers

II. Grammar (20%)

Each of the following sentences has four underlined parts marked A, B, C, and D. Identify the part of the sentence that is incorrect.

11. It was not until 1937 when the southernmost source of the Nile River was

A B C

discovered.

D

12. Platinum is a rare and valuable metal, white in color, and easy to work.

A B C D

13. During the two centuries between Herschel and Voyager, relatively little learned

A B C D

about the planet Uranus.
14. Some conservationists attempt to save rare domestic farm animal, such as the Tamworth pig.
A B C D

15. The head proctor tells the students when they should begin the exam, how long they have to complete it, and what the procedures are for turning in.
A B C D

16. The bodies of cold-blooded animals have the same temperature their surroundings, but those of warm-blooded animals do not.
A B C D

17. The oceans contain many forms of life that has not yet been discovered.
A B C D

18. Before 1992, Bobby Fischer had not played in other chess tournament since winning the Chess World Championship in 1972.
A B C D

19. Perhaps was his defiance against his parents’ attitude that led Salvatore Ferragamo to fame as the shoemaker for the world’s most famous women.
A B C D

20. The United Nations Organization maintains what water will be at the heart of many future international disputes.
A B C D

III. Reading Comprehension (60%)
This section contains reading passages and questions about the passages. Read the passages carefully and choose the best answer to each of the questions.

The influenza virus is a single molecule composed of millions of individual atoms. Although bacteria can be considered a type of plant, secreting poisonous substances into the body of the organism they attack, viruses, like the influenza virus, are living organisms themselves. We may consider them regular chemical molecules since they have strictly defined atomic structure; but on the other hand, we must also consider them as being alive since they are able to multiply in unlimited quantities.

An attack brought on by the presence of the influenza virus in the body produces a temporary immunity, but, unfortunately, the protection is against only the type of virus that caused the influenza. Because the disease can be produced by any one of three types, referred to as A, B, or C, and many varieties within each type, immunity to one virus will not prevent infection by other types or strains. Protection from the influenza virus is also complicated by the fact that immunity to a specific virus may periodically change characteristics. The problem of mutation makes it difficult to carry out a successful immunization program. Vaccines are often ineffective against newly evolving strains.
Approximately every ten years, worldwide epidemics of influenza called pandemics occur. Thought to be caused by new strains of type-A virus, these pandemic viruses have spread rapidly, infecting millions of people.

Vaccines have been developed that have been found to be 70 to 90 percent effective for at least six months against either A or B types of the influenza virus, and a genetically engineered live-virus vaccine is under development. Currently, the United States Public Health Service recommends annual vaccination only for those at greatest risk of complications from influenza, including pregnant women and the elderly. Nevertheless, many other members of the general population request and receive flu shots every year, and even more are immunized during epidemic or pandemic cycles.

21. Which of the following is the main topic of the passage?
(A) The influenza virus (B) Immunity to disease (C) Bacteria (D) Chemical molecules

22. According to this passage, bacteria are
(A) poisons (B) very small (C) larger than viruses (D) plants

23. The world "strictly" in line 5 could be best replaced by
(A) unusually (B) completely (C) broadly (D) exactly

24. The atomic structure of viruses
(A) is variable (B) is strictly defined (C) cannot be analyzed chemically (D) is more complex than that of bacteria

25. Why does the author say that viruses are alive?
(A) They have a complex atomic structure. (B) They move. (C) They multiply. (D) They need warmth and light.

26. The word "unlimited" in paragraph 1 could best be replaced by which of the following?
(A) very small (B) very large (C) very similar (D) very different

27. According to the passage, how does the body react to the influenza virus?
(A) It prevents further infection to other types and strains of the virus. (B) It produces immunity to the type and strain of virus that invaded it. (C) It becomes immune to types A, B, and C viruses, but not to various strains within the types. (D) After a temporary immunity, it becomes even more susceptible to the type and strain that caused the influenza.

28. The passage discusses all of the following as characteristics of pandemics EXCEPT
(A) they spread very quickly (B) they are caused by type-A virus (C) they are regional outbreaks (D) they occur once every ten years.
34. What happens when the Federal Reserve provides too little money?
(A) Demand for loans increases. (B) Unemployment slows down. (C) Interest rates
go up. (D) Businesses expand.
35. In paragraph 2, the author suggests that inflation is caused by
(A) high employment rates (B) too much money in the economy (C) very high fuel
prices (D) a limited supply of goods
36. What does the author mean by the statement, “However, in practice, the Federal
Reserve does not stray from the financial policies established by the executive branch
of the government?”
(A) The Fed is more powerful than the executive branch of the government. (B) The
policies of the Fed and those of the executive branch of the government are not the
same. (C) The Fed tends to follow the policies of the executive branch of the
government. (D) The Fed reports to the executive branch of the government.
37. All of the following statements could be included in a summary of the passage
EXCEPT:
(A) The Federal Reserve is an independent agency of the United States government.
(B) The Federal Reserve controls the flow of money and credit by buying and selling
government security. (C) The Federal Reserve issues new coins and currency to
banks. (D) The Federal Reserve receives its yearly budget from Congress.

The fact that most Americans live in urban areas does not mean that they
reside in the center of large cities. In fact, more Americans live in the suburbs of
large metropolitan areas than in the cities themselves.

The Bureau of the Census regards any area with more than 2,500 people as an
urban area and does not consider boundaries of cities and suburbs. According to the
Bureau, the political boundaries are less significant than the social and economic
relationships and the transportation and communication systems that integrate a locale.
The term used by the Bureau for an integrated metropolis is an MSA, which stands for
Metropolitan Statistical Area. In general, an MSA is any area that contains a city and
its surrounding suburbs and has a total population of 50,000 or more.

At the present time, the Bureau reports more than 280 MSAs, which together
account for 75 percent of the US population. In addition, the Bureau recognizes
eighteen megapolises, that is, continuous adjacent metropolitan areas. One of the
most obvious megapolises includes a chain of hundreds of cities and suburbs across
ten states on the East Coast from Massachusetts to Virginia, including Boston, New
York, and Washington, D.C. In the Eastern Corridor, as it is called, a population of
45 million inhabitants is concentrated. Another megapolis that is growing rapidly is
the California coast from San Francisco through Los Angeles to San Diego.

38. Which of the following is the best title for the passage?
(A) Metropolitan Statistical Areas (B) Types of Population Centers (C) The
Bureau of the Census (D) Megapolises
39. According to the passage, where do most Americans live?
(A) In the center of cities (B) In the suburbs surrounding large cities (C) In rural areas (D) In small towns

40. According to the Bureau of the Census, what is an urban area?
(A) An area with 2,500 people or more (B) An area with at least 50,000 people (C) The eighteen largest cities (D) A chain of adjacent cities

41. Which of the following are NOT considered important in defining an urban area?
(A) Political boundaries (B) Transportation networks (C) Social relationships (D) Economic systems

42. The word "integrate" in paragraph 2 is closest in meaning to
(A) benefit (B) define (C) unite (D) restrict

43. The word "its" in paragraph 2 refers to
(A) the MSA’s (B) the area’s (C) the city’s (D) the population’s

44. The word "adjacent" in paragraph 3 is closest in meaning to
(A) beside each other (B) growing very fast (C) the same size (D) densely populated

45. According to the passage, what is a megalopolis?
(A) One of the ten largest cities in the United States (B) One of the eighteen largest cities in the United States (C) One of the one hundred cities between Boston and Washington (D) Any number of continuous adjacent cities and suburbs

46. Why does the author mention the Eastern Corridor and the California coast in paragraph 3?
(A) As examples of megalopolises (B) Because 75 percent of the population lives there (C) To conclude the passage (D) The Bureau of the Census is located there

* * * * * * * * * * * * * * * * * *

Jacob Epstein’s sculptures were the focus of much controversy during the sculptor’s lifetime. Epstein was born in the United States of Russian-Jewish immigrants in 1880. He moved to Paris in his youth and later to England, where he eventually settled and took out British citizenship in 1907. His first major public commission, on a building in London, offended public taste because of the expressive distortion and nudity of the figures. In 1937, the Rhodesian government, which at that time owned the building, actually mutilated the sculptures to make them conform to the notions of decency. Many of Epstein’s monumental carvings received equally adverse criticism. While the general public denounced his work, many artists and critics praised it. They admired in particular the adversity of his work and noted the influence on it of primitive and ancient motifs from Africa and the Pacific. Today, Epstein’s work has received the recognition it deserves, and Epstein is considered one of the major sculptors of the twentieth century.

47. Concerning Epstein’s work, the tone of the article is
(A) critical (B) derisive (C) amusing (D) admiring
The Federal Reserve System, as an independent agency of the United States government, is charged with overseeing the national banking system. Since 1913 the Federal Reserve System, commonly called the Fed, has served as the central bank for the United States. The system consists of twelve District Reserve Banks and their branch offices, along with several committees and councils. All national commercial banks are required by law to be members of the Fed, and all deposit-taking institutions like credit unions are subject to regulation by the Fed regarding the amount of deposited funds that must be held in reserve and that by definition, therefore, are not available for loans. The most powerful body is the seven-member Board of Governors in Washington, appointed by the President and confirmed by the Senate.

The System's primary function is to control monetary policy by influencing the cost and availability of money and credit through the purchase and sale of government securities. If the Federal Reserve provides too little money, interest rates tend to be high, borrowing is expensive, business activity slows down, unemployment goes up, and danger of recession is augmented. If there is too much money, interest rates decline, and borrowing can lead to excess demand, pushing up prices and fueling inflation.

The Fed has several responsibilities in addition to controlling the money supply. In collaboration with the U.S. Department of the Treasury, the Fed puts new coins and paper currency into circulation by issuing them to banks. It also supervises the activities of member banks abroad, and regulates certain aspects of international finance.

It has been said that the Federal Reserve is actually a fourth branch of the United States government because it is composed of national policy makers. However, in practice, the Federal Reserve does not stray from the financial policies established by the executive branch of the government. Although it is true that the Fed does not depend on Congress for budget allocations, and therefore is free from the partisan politics that influence most of the other governmental bodies, it is still responsible for frequent reports to the Congress on the conduct of monetary policies.

29. Which of the following is the most appropriate title for the passage?
   (A) Banking (B) The Federal Reserve System (C) The Board of Governors (D) Monetary Policies

30. The word "overseeing" in paragraph 1 is closest in meaning to
   (A) supervising (B) maintaining (C) financing (D) stimulating

31. The word "confirmed" in paragraph 1 could be best replaced by
   (A) modified (B) considered (C) examined (D) approved

32. According to the passage, the principal responsibility of the Federal Reserve System is
   (A) to borrow money (B) to regulate monetary policies (C) to print government securities (D) to appoint the Board of Governors

33. The word "securities" in paragraph 2 is intended to mean
   (A) debts (B) bonds (C) protection (D) confidence
48. Which of the following was most probably an important influence on Epstein’s work?
   (A) Russian painting (B) Public tastes (C) The Rhodesian government (D) African carvings

49. Today, a newly erected Epstein sculpture would probably
   (A) be mutilated (B) conform to public opinions (C) be well received (D) be expressive

50. What does the author mean by the statement, “Many other Epstein’s monumental carvings received equally adverse criticism”?
   (A) Many of Epstein’s monuments have been defaced (B) People have taken equal offense to other critical works of art. (C) Epstein’s monuments are usually denounced for their nudity. (D) Other sculptures of Epstein’s have elicited negative comments.
1. What is a business cycle? Please use a diagram to indicate the phases of the business cycle. Suppose the economy is initially in a recessionary gap, what kind of demand-side fiscal policy would you like to enact in order to move the economy to equilibrium at the Natural Real GDP? (25 points)

2. Normally there are three types of unemployment that exist in the economy. They are frictional unemployment, structural unemployment, and cyclical unemployment. Please describe what they are. Currently, there are some 460,000 persons unemployed in Taiwan, at the same time there are some 320,000 foreign workers employed by the Taiwan companies, can you explain why this situation happening? (25 points)

3. Good weather brings a bumper tomato crop. The price of tomatoes falls from $6 to $4 a basket and the quantity demanded increases from 200 to 400 baskets a day. Over this price range, please answer the following questions.
   (1) What is the price elasticity of demand? (5 points)
   (2) Assume the demand function is linear; please find the demand function for tomatoes. (5 points)
   (3) Suppose the market equilibrium price is at $5 a basket, please calculate consumer surplus for tomatoes. (5 points)

4. A firm produces a quantity Q of its output using labor L and material M with the production function \( Q = 50\sqrt{ML} + M + L \).
   (1) What is the nature of returns to scale (increasing, constant, or decreasing) for this production function? (5 points)
   (2) Is the marginal product of labor ever diminishing for this production function? If so, when? Is it ever negative, and if so, when? (5 points)

Please turn to the next page.
Nowadays, more and more people in America face overweight problems. Overweight problem causes not only personal life health threat but also the government’s financial burden on medical treatment. American Congress is currently studying the possibility of imposing taxes on those food items that will cause people overweight. For simplicity, suppose hamburger is the only food that will cause people overweight. Please help American Congress to analyze which tax scheme (lump-sum tax or excise tax) is more effective in reducing people’s consumption on hamburger and therefore reducing the nation’s overweight problem. Please answer the following questions:

(1) Take Susan as a representative consumer. Suppose Susan’s before tax income is M, please draw a diagram (diagram 1) indicating Susan’s budget constraint, utility function and her equilibrium consumption quantity before the congress imposing any tax on hamburger. Use \( X \) as consumption of hamburger and \( P_x \) as the price of hamburger before tax. (5 points)

(2) Suppose the Congress decides to impose a lump-sum tax on Susan. In order to keep consuming hamburger, Susan has to pay \( T \) lump-sum tax, \( T < 0.5M \). Please draw a diagram (on top of diagram 1) to indicate Susan’s after-tax budget constraint, utility function and after tax consumption of hamburger (denoting as \( X_T \)). (5 points)

(3) Alternatively, suppose the congress decides to impose excise tax on hamburger, the tax rate is \( t \). Please draw a diagram (on top of diagram 1) to indicate Susan’s after-tax budget constraint, utility function and equilibrium consumption of hamburger. Denote the after-tax consumption as \( X_t \). (5 points)

(4) In order to compare which tax scheme is more effective in reducing Susan’s consumption on hamburger, the congress sets the tax revenue on these two schemes equal, i.e., \( T = t \cdot X_t \). Under this condition, please draw a diagram to indicate which tax scheme can reduce Susan’s consumption on hamburger, and therefore will be a better policy for reducing overweight problem. Please also provide a brief analysis for your findings. (10 points)
Part A: Multiple Choice Questions (40%) (4 points each question)

(Notice: There is only ONE correct answer for each question.)

1. The statistical analysis of data may help to improve a process by all of the following EXCEPT
   (A) Demonstrate the need for improvements.
   (B) Identify ways to make improvements.
   (C) Assess the success of improvements.
   (D) Increase the variation of the process.
   (E) Estimate the benefits of improved strategies.

2. Which one of the following is NOT an assumption of the binomial distribution?
   (A) Sampling is with replacement.
   (B) The experiment consists of n identical trials.
   (C) The probability of success remains constant from trial to trial.
   (D) Trials are independent of each other.
   (E) Each trial results in one of two mutually exclusive outcomes.

3. In a manufacturing plant, machine A produces 10% of a certain product, machine B produces 40% of this product, and machine C produces 50% of this product. 5% of machine A products are defective, 12% of machine B products are defective, and 8% of machine C products are defective. The company inspector has just sampled a product from this plant and has found to be defective. What is the probability that the sampled product was produced by machine B?
   (A) 0.120
   (B) 0.333
   (C) 0.400
   (D) 0.480
   (E) 0.516

4. The mean life of pair of shoes is 40 months with a standard deviation of 8 months. If the life of the shoes is normally distributed, approximately how many pairs of shoes out of one million will need replacement before 36 months?
   (A) 500,000
   (B) 808,500
   (C) 191,500
   (D) 308,500
   (E) 234,510
5. In one-way ANOVA, which one of the following is TRUE:
   (A) A large value of F results when the within-treatment variability is large compared to
       the between-treatment variability.
   (B) The numerator degree of freedom equals the number of samples being compared.
   (C) Other factors being equal, the further apart the treatment means are from each other,
       the more likely we are to reject the null hypothesis associated with the ANOVA F test.
   (D) The numerator of the F statistic is an estimate of the population variance based on
       between-treatment variation.
   (E) A one-way analysis of variance is a method that allows us to estimate and compare
       the effect of a treatment on a response variable.

6. A null hypothesis was not rejected at the 0.10 level of significance. If the level of
   significance was changed to 0.05 and the same sample results were obtained, what
   decision should be made?
   (A) reject the null hypothesis
   (B) do not reject the null hypothesis
   (C) cannot be determined without further information
   (D) all of the above
   (E) none of the above.

7. In testing for the equality of means from two independent populations, if the null
   hypothesis is rejected, the test could result in:
   (A) Neither a Type I error or a Type II error.
   (B) Either a Type I error or a Type II error.
   (C) A Type I error.
   (D) A Type II error.
   (E) Both a Type I error and a Type II error.

8. A professional basketball player is averaging 21 points per game. He will be retiring at the
   end of this season. The team has multiple options to replace him. However, the owner
   feels that signing a replacement is only justified, if he can average more than 22 points per
   game. Which of the following is the appropriate hypothesis for this problem?
   (A) H₀: μ ≤ 22 vs. Hₐ: μ > 22
   (B) H₀: μ ≤ 21 vs. Hₐ: μ > 21
   (C) H₀: μ ≥ 22 vs. Hₐ: μ < 22
   (D) H₀: μ ≥ 21 vs. Hₐ: μ < 21)
   (E) H₀: μ < 22 vs. Hₐ: μ ≥ 22)
9. In testing a hypothesis $H_0: \sigma^2 = 10$ versus $H_a: \sigma^2 < 10$ for a normal population. If the sample size is 10 and the computed $\chi^2$ value from the sample variance is 2.58, what is the correct p-value for this test?
   (A) p-value < 0.01
   (B) 0.01 < p-value < 0.025
   (C) 0.025 < p-value < 0.05
   (D) 0.95 < p-value < 0.975
   (E) 0.975 < p-value < 0.99

10. The area under the normal curve between $z = 0$ and $z = 1$ is _____ the area under the normal curve between $z = 1$ and $z = 2$.
   (A) less than
   (B) greater than
   (C) equal to
   (D) A, B, or C above dependent on the value of the mean
   (E) A, B, or C above dependent on the value of the standard deviation

Part B: Short Answer Questions/Problems (60%)

(12 points) 1. The flying time of a drone airplane has a normal distribution with mean 4.76 hours and standard deviation of 0.04 hours.
   (a) What is the probability that the drone will fly less than 4.66 hours?
   (b) What is the probability that the drone will fly more than 4.80 hours?
   (c) What is the probability that the drone will fly between 4.70 and 4.82 hours?

(12 points) 2. The production manager for the XYZ manufacturing company is concerned that the customer orders are being shipped late. He asked one of his planners to check the timeliness of shipments for 1,000 orders. The planner randomly selected 1,000 orders and found that 120 orders were shipped late. Construct the 95% confidence interval for the proportion of orders shipped late.

(10 points) 3. The accompanying data are the times in seconds that it took a sample of employees to assemble a component at TSM manufacturing facility. Assembly times are normally distributed. At the 0.05 significance level, can we conclude that the mean assembly time for this component is not equal to 3 minutes?

<table>
<thead>
<tr>
<th>190</th>
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<th>180</th>
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</tbody>
</table>
(10 points) 4. A null hypothesis is $P \geq 0.65$ and the alternative hypothesis is $P < 0.65$. To test this hypothesis, a sample of 400 is taken and the level of significance is set at 0.05. If the true proportion is $P = 0.60$, what is the probability of the Type II error for this test? What is the Power-of-Test for this test?

(16 points) 5. In order to determine whether any of gasoline types A, B, and C has effects on mean Formosa gasoline mileage, researchers designed and collected the data below.

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>B</th>
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The researchers then conducted a One-Way Analysis of Variance (ANOVA). The following table shows part of the values in the ANOVA table for this test.

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<th>Mean squares</th>
<th>$F$ statistics</th>
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<td></td>
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<tr>
<td>Total</td>
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</table>

(a) Complete this ANOVA table.
(b) How many observations are there in this test?
(c) Construct an appropriate hypothesis for this test.
(d) The treatment sum of squares and the error sum of squares are said to partition the total sum of squares. Explain this.
(e) If the value of $F_{0.05}$ with 2 numerator and 12 denominator degree of freedom is found to be 3.89. How do you conclude this test?
Areas of the Standard Normal Distribution

The entries in this table are the probabilities that a standard normal random variable is between 0 and Z (the shaded area).

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國立高雄大學九十三學年度研究所碩士班招生考試試題

系所組別：經濟管理研究所乙組  全球管理組  科目：統計學

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**Example:** (Degrees of Freedom) = 5, the value above \( \chi^2 = 9.488 \), corresponding to 0.05 significance level.

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### Diagram

![Chi-Square Distribution](image-url)
Multiple Choice Questions (40%; 2% for each question)

1. The Sara Lee Company sells the Hanes brand of hosiery in the United States. The manufacturer of this hosiery in Great Britain sells under the brand name of Pretty Polly. The Sara Lee Company is using ________ to broaden its global marketing base without investing in overseas plants and equipment.
   A. Contract manufacturing
   B. Joint venture
   C. Licensing agreement
   D. Limited partnership

2. Margaret Atkins is planning on starting a business selling her raspberry salsa. What does the term unlimited liability mean to her?
   A. She has unlimited access to funds.
   B. She is free from government regulation.
   C. She usually has to put in an unlimited number of hours.
   D. She is fully liable for all business debts.

3. Which of the following statements is true?
   A. Autocratic leaders delegate authority and involve employees in decision making.
   B. Tactical planning establishes the actions and the resource allocation required to accomplish strategic goals.
   C. Planning is the primary management function.
   D. All of the above are true.

4. Which of the following statements is true?
   A. A flat organization has a narrow span of management and many hierarchical levels.
   B. The line-and-staff organization system has a clear chain of command but also includes functional groups of people who provide advice and specialized services.
   C. If a manager has very few people reporting directly to her, then she has a wide span of management.
   D. All of the above are true.

5. The situational approach to management is also termed as
   A. behavioral approach.
   B. contingency approach.
   C. scientific approach.
   D. network approach.
6. The phenomenon that group members hold back deviant, minority or unpopular views in order to show their agreement is known as
   A. group cohesiveness.
   B. Halo effect.
   C. group-think.
   D. selective perception.

7. All of the following are the characteristics of e-commerce EXCEPT
   A. exchange of digitalized information between parties.
   B. technology-enabled transactions.
   C. face-to-face relationships.
   D. intra- and inter-organizational activities.

8. Which of the following plans for the desired future state of a corporation?
   A. vision planning
   B. strategic planning
   C. PERT
   D. mission statement

9. Which of the following is one of the key situational factors proposed by Fielder’s contingency model for leadership?
   A. concern for people
   B. maturity of subordinates
   C. task structure
   D. organizational success

10. The process of selecting decision criteria is accomplished by
    A. manipulating the data that will support a given decision.
    B. determining what is relevant in making the decision.
    C. examining the difference in the opportunities available.
    D. None of the above is true.

11. Attempts to show the financial condition of the firm to employees to get them to think like owners of the firm are known as
    A. open-book management.
    B. work sharing arrangements.
    C. telecommuting.
    D. pay-for-performance programs.
12. The search for industry best practices that lead to superior performance is known as
A. BPR.
B. SCM.
C. comparative analysis.
D. benchmarking.

13. Which of the following types of processes is considered as the least flexible?
A. batch
B. assembly
C. project
D. continuous flow

14. Which of the following is NOT true for an extranet?
A. It is typically secured behind a firewall.
B. It is open to the public.
C. Regular Internet lines can be used to access it.
D. It uses the TCP/IP protocol.

Scenario Questions I (The following three multiple choice questions)

Xavier is a veteran manager with Pixel International, Inc. (PII). Recently PII purchased a
small business in the printing industry. Xavier has been assigned the task of managing this
new acquisition and is currently deciding how best to design its structure. Currently,
employees are assigned to one of three departments, including sales, production, and legal
defense.

15. In determining Xavier's span of management, she should consider all of the following
EXCEPT:
A. Is the work performed by subordinates stable and routine?
B. Do subordinates perform similar tasks?
C. Are rules and procedures defining task activities available?
D. All of the above.

16. The analysis of whether the new division should be centralized or decentralized should
include all of the following EXCEPT:
A. The level of change and uncertainty in the environment
B. The structure of competitors and customers
C. Corporate history and culture
D. The threat of crisis or the risk of company failure
17. Current departmentalization of Xavier’s new division can be characterized primarily as:
   A. Vertical functional
   B. Divisional
   C. Horizontal matrix
   D. Team-based

Scenario Questions II (The following three multiple choice questions)

The promotion to first line manager took place just six weeks ago for Stephen Hedricks. He was well qualified for the promotion, but the new job still required a lot of training. One of the challenges has been to coordinate the production of his team with the needs of the sales department and with the availability of raw materials from his suppliers. Setting priorities and developing schedules to accomplish the work is a part of Stephen’s job that he has really enjoyed. The challenges to maintain high rapport and to build a strong team with his employees have already brought him a lot of satisfaction. In reflecting about the last six weeks, Stephen concludes that he is very happy about his new job.

18. Stephen was participating in the decisional role of:
   A. Entrepreneur
   B. Disturbance handler
   C. Disseminator
   D. Resource allocator

19. The managerial skill that is least important at Stephen’s middle-level management position is:
   A. Conceptual
   B. Human
   C. Technical
   D. All of these skills are vital

20. In his job, Stephen needs to:
   A. Plan
   B. Organize
   C. Lead
   D. All of the above
Essay Questions (60%)

1. Compare the four levels of goals and plans. (15%)
2. Briefly explain expectancy theory. (15%)
3. Many successful businesses have created their own unique business models.
   (1) Please describe what a business model is. (3%)
   (2) What key components should a business model have? (5%)
   (3) Please use a real-world example to illustrate what a business model is and its corresponding key components. (7%)
4. Businesses today have been faced with severe global changes in their business environment.
   (1) What are the major global changes in the business environment today? (8%)
   (2) How should managers in businesses deal with these changes? (7%)