一、 選擇題，每題二分。

1. A patient's serum cholesterol value is reported as 4 mM/L. This concentration expressed in terms of mg/dL will be (mol. wt. of cholesterol = 386):
(A) 0.154 mg/dL (B) 1.54 mg/dL (C) 15.4 mg/dL (D) 154 mg/dL (E) 1540 mg/dL

2. The concentration of sodium fluoride (NaF) in a community's drinking water is 0.6 ppm. Express this concentration as a percentage.
(A) 0.6% (B) 0.06% (C) 0.006% (D) 0.0006% (E) 0.00006%

3. A solution contains 1.5 mEq of calcium per 100 mL. Express the solution's strength of calcium in terms of mg/L. (The atomic weight of calcium is 40.)
(A) 30 mg/L (B) 60 mg/L (C) 120 mg/L (D) 300 mg/L (E) 600 mg/L

4. A ready-to-use enteral nutritional solution has an osmolarity of 490 mOsm/L. How many mL of purified water are needed to adjust 8 fluid ounces of the enteral solution to an osmolarity of 280 mOsm/L?
(A) 150 mL (B) 180 mL (C) 240 mL (D) 350 mL (E) 420 mL

5. What is the minimum amount of a potent drug that may be weighted on a prescription balance with a sensitivity requirement of 6 mg if at least 98% accuracy is required?
(A) 60 mg (B) 120 mg (C) 180 mg (D) 240 mg (E) 300 mg

6. An early sign of a decomposing epinephrine solution is the presence of a
(A) Brown precipitate (B) Pink color (C) White precipitate
(D) Crystal (E) Red color

7. Potassium supplements are administered in all of the following manners EXCEPT
(A) IV infusion (B) IV bolus (C) Elixirs, po
(D) Slow-release tablets, po (E) Effervescent tables

8. Insulin preparations are usually administered by
(A) Intradermal injection (B) Intramuscular injection (C) Intravenous bolus
(D) Intravenous infusion (E) Subcutaneous injection

9. Which one of the following commonly available large-volume dextrose solutions for intravenous use is isotonic?
(A) 5.0% (B) 10% (C) 15% (D) 20% (E) 25%

(背面仍有題目,請繼續作答)

10. The term "piggyback" is most commonly associated with
(A) Intrathecal injections (B) Intermittent therapy (C) Intravenous bolus
(D) Slow intravenous infusion (E) Total parenteral nutrition

11. Which one of the following injectable solutions may result in a precipitate when added to D5W or NS?
(A) Diazepam (B) Folic acid (C) Furosemide
(D) Gentamicin sulfate (E) Succinylcholine chlride

12. A suspension is NOT a suitable dosage form for what type of injection?
(A) Intra-articular (B) Intradermal (C) Intramuscular
(D) Intravenous (E) Subcutaneous

13. Which of the following vitamin is water soluble and possesses antioxidant properties?
(A) Ascorbic acid (B) Cyanocobalamine (C) Pyridoxine
(D) Retinol (E) α - Tocopherol

14. The usual storage condition specified for biologicals is
(A) < 2℃ (B) 2-8 ℃ (C) 8-15 ℃ (D) 10-18 ℃ (E) 25℃

15. Techniques used in the development of biotechnological drugs include: I. gene splicing
II. preparation of monoclonal antibodies III. Lyophilization
(A) I only (B) III only (C) I and II only
(D) II and III only (E) I, II and III

16. Most of the recently developed biotechnological drugs are formulated into which dosage form?
(A) Inhalation solutions (B) Parenteral (C) Capsules
(D) Tablets (E) Topicals

17. Disadvantages of calcium carbonate as an antacid include all of the followings EXCEPT
(A) some patients may develop hypercalcemia
(B) capacity for acid neutralization is poor
(C) may cause constipation
(D) may induce gastric hypersecretion
(E) prolonged use may induce renal calculi and decreased renal function

18. The primary advantage of piroxicam over most other nonsteroidal anti-inflammatory drugs is that it
(A) is relatively inexpensive
(B) acts by a different mechanism of action that may be additive to other NSAIDs
(C) may be given on a once-a-day schedule
(D) has a cytoprotective effect
(E) has essentially no GI side effects

19. The most important indication for vancomycin is in the treatment of serious infections that do NOT respond to other treatment and that are caused by which of the following organisms?
(A) Gonococcal (B) Pneumococcal (C) Pseudomonal
(D) Streptococcal (E) Staphylococcal

20. Patients taking the antitubercular drug rifampin should be told that the drug
(A) may cause diarrhea
(B) may cause them to sunburn more easily
(C) may produce nausea and vomiting if alcoholic beverages are consumed
(D) may impart an orange color to their urine and sweat
(E) should be swallowed whole (ie, not chewed) to prevent staining of the teeth

21. A patient using ticlopidine should be monitored for the development of
(A) pseudomembranous enterocolitis
(B) gynecomastia
(C) xerophthalmia
(D) repiratory impairment
(E) abnormal bleeding

22. A disadvantage of using cromolyn sodium in asthma treatment is
(A) its brief duration of action
(B) its nephrotoxicity
(C) that it may cause tachyphylaxis
(D) that it is ineffective in treating acute attacks
(E) that it causes cardiac stimulation

23. Benzoyl peroxide is commonly employed in the treatment of
(A) psoriasis (B) pinworms (C) acne
(D) trichomonal infections (E) seborrheic dermatitis

24. A unit-dose package is one that contains
(A) precisely enough medication to complete a dosage regimen
(B) solid dosage forms only
(C) a premixed drug in an IV infusion solution
(D) the exact dose of a drug ordered for a given patient
(E) a 24-hour supply of a specific drug that is sent to a nursing unit

25. Patients receiving doses of psyllium should be advised to
(A) avoid dairy products
(B) take the medication with food
(C) mix the product with water and let stand for 30 minutes before administering
(D) avoid driving or operating heavy machinery within 1 hour of taking the medication
(E) take the product with lots of water

26. Patients receiving metformin for the treatment of diabetes mellitus should be monitored for the development of
(A) agranulocytosis (B) hearing loss (C) lactic acidosis
(D) respiratory alkalosis (E) mental disorder

27. A nutritional product is said to contain 14 g of protein, 18 g of carbohydrate, and 10 g of fat in each 100-mL serving. The caloric content of a serving would be
(A) 168 kcal (B) 198 kcal (C) 218 kcal (D) 238 kcal (E) 378 kcal

28. Of the following glucocorticoids, which one has the greatest anti-inflammatory potency when administered systemically?
(A) Cortisone (B) Hydrocortisone (C) Dexamethasone
(D) Prednisone (E) Triamcinolone

29. The chemical ingredient of 「快樂丸」 is
(A) Cannabinoids (B) Cocaine (C) Flunitrazepam
(D) Ketamine (E) Methylenedioxymethamphetamine

30. Gingival hyperplasia, hirsutism, and ataxia are adverse effects associated with the use of
(A) Chlorpromazine (B) Ciprofloxacin (C) fluoxetine
(D) Minoxidil (E) Phenytoin

二、申論題 (40%)

1. American Society of Health-system Pharmacists has published the guideline of "Minimum standard for pharmaceutical services in ambulatory care" in *American Journal of Health-system Pharmacy,* 1999; 56:1744-53. The primary purpose of these guidelines is to outline the minimum requirements for the operation and management of pharmaceutical services for patients in the ambulatory care setting. The criteria for pharmaceutical services that are covered in these guidelines are distributed among the following categories: (1) leadership and practice management, (2) medication therapy and pharmaceutical care, (3) drug distribution and control, and (4) facilities, equipment, and other resources. The following paragraphs are part of the guidelines concerning preparing, packaging, and labeling medications. Please read it through and discuss the differences of the pharmacy practice between our country and United States. (20%)

Preparation. The pharmacist should prepare or supervise the preparation, in a timely and accurate manner, of those drug formulations, strengths, dosage forms, and packages prescribed, including those that are not commercially available but that are needed in the care of patients.
Extemporaneous compounding. Drug formulations, dosage forms, strengths, and packaging that are not available commercially but are deemed necessary for patient care should be prepared by appropriately trained personnel in accordance with applicable standards and regulations (e.g., those of FDA, USP, and state board of pharmacy). Adequate quality control and quality assurance procedures should exist for these operations. Commercially available products should be used to the maximum extent possible.
Sterile products. All sterile medications for use in the ambulatory care facility of for use by patients in the home should be prepared in s suitable environment by appropriately trained personnel and labeled appropriately for the user. Quality control and quality assurance procedures for the preparation of sterile products should exist, including periodic assessment of personnel on aseptic technique.
Cytotoxic and hazardous drug products. All cytotoxic and hazardous drug products for use in the ambulatory care facility or for use by patients in the home should be prepared in a suitable environment by appropriately trained personnel and labeled appropriately for the user. Special precautions, equipment, supplies (spill kits), and training for storage, handling, and disposal of cytotoxic and hazardous drug products should exist to ensure the safety of personnel, patients, and visitors. Quality control and quality assurance procedures for the preparation of cytotoxic and hazardous products should exist. Personnel handling cytotoxic and hazardous drug products should be monitored periodically for adverse effects.
Controlled substances. Pharmacists are responsible for a lead role in the control of drug products that are subject to diversion and misuse. Pharmacists have primary responsibility for receipt, storage, security, distribution within the facility and to patients for home use, and disposal of controlled substances, as well as for related records. Policies and procedures shall exist to ensure compliance with the Comprehensive Drug Abuse Prevention and Control Act of 1970 and with state laws and regulations that may be more stringent. Storage within the pharmacy and in nonpharmacy areas (e.g., the emergency room) shall be secure, and access

(背面仍有題目,請繼續作答)

shall be available to authorized personnel only. Procedures shall be in place to detect and investigate inventory shrinkage.

Packaging. Medications dispensed to ambulatory care patients shall be packaged and labeled in compliance with applicable federal and state laws and regulations and with USP and other standards. When feasible, dispensing in unopened manufacturers' packages and in tamper-evident packages is desirable. Packaging materials shall be selected that preserve the integrity, cleanliness, and potency of compounded and commercially available drug products. Containers, including unit dose packages, for patient home use shall comply with the Poison Prevention Packaging Act.

Labeling. At a minimum, labels for home use of medications shall comply with applicable federal and state laws and regulations. Generally, labels contain the name, address, and telephone number of the pharmacy; the date of dispensing; the serial number of the prescription; the patient's full name; the name, strength, and dosage form of the medication; directions to the patient for use of the medication; the name of the prescriber; precautionary information; the number of authorized refills; and the initials (or name) of the responsible pharmacist. Other information may be required by state laws and regulations.

2.請由藥劑學、調劑學及臨床實務等方面討論下列報導。(20%)

磨粉費？醫療收費標準沒這一項

醫院遭檢舉 指成本高又費時 健保不給付 醫院不能做白工

【記者黃靜宜／報導】台北市議員李建昌接獲民眾陳情指出，國泰內湖分院違法向病人收取數元到數十元不等的「磨粉費」，即將錠劑研磨成粉的費用；由於金額不大，一般民眾不易發覺，但李建昌粗估，醫院一年因此超收了近一百萬元費用，因而要求衛生局徹查。

李建昌近日接獲一名家長陳情表示，他五歲的女兒去年一月起，陸續至國泰醫院內湖分院就醫；從醫療費用收據明細中竟發現，藥費自費欄中有數元到數十元不等的小額費用，他向醫院詢問後才知道，這是磨粉費。這名家長覺得不合理，向中央健保局及該院投訴，院方竟透過相關人員表示願私下拜訪他，並退還磨粉費，但希望他不要張揚。李建昌獲知後，派助理前往醫院實地察訪，證明確爲實情。

李建昌表示，衛生局統計六歲以下兒童醫療補助申報人次數，國泰內湖分院每月申報三四千人次，若以每次均收取二十元磨粉費計算，一年下來收入達九十七萬四千七百元。國泰醫院內湖分院表示，該院規定，需磨粉的病人一次領藥若超過十二包，每包收取三元磨粉費，十二包內免收。這是因爲磨粉需花三到五分鐘，耗費的時間、人力較高，因此酌收「工本費」，若民眾不願花錢，醫師可以一次只開三天份的藥，但如此一來民眾就得多上幾次醫院了。該院並表示，不只國泰，多家醫院也有收費情形。

台北市衛生局指出，醫療法第十八條第二項規定，醫療機構不得違反收費標準或超額收費，而在北市醫院診所收費標準中，並無磨粉費項目，因此，醫院若向健保病人收取磨粉費，衛生局可依法處以五千到五萬元罰鍰。

台北市立仁愛醫院藥劑科主任李碧玉表示，小兒科用藥大部分需磨成粉，因爲幼兒藥量比成人少，一顆藥得分成好幾份，需磨成粉才能算準藥量。該院對磨粉服務都自行吸收人力、時間及包藥紙的成本，沒有向民眾收取磨粉費。

【記者楊惠君／報導】台北市議員昨舉發各大醫院均違法超收磨藥費，被指控的醫院十分無奈，指醫院提供錠劑磨藥粉服務，費工耗時，成本遠超過全民健保給付的藥事服務費，而中央健保局對此是否違法，答案反覆不定，讓醫院無法適從。

昨天被指控的國泰醫院下午即緊急召開院務會議，決定暫停磨藥粉服務，以免引發不必要的誤會；台北馬偕醫院則將視各醫院的做法及健保局反應，再做決定。至於台大、榮總、長庚都表示，未額外收取磨藥費。

台北國泰醫院院長室主任王榮宗指出，磨藥粉十分麻煩，很多醫院都已不提供這項服務，據台大醫院藥劑部於八十二年臨床醫學會期刊第二期發表的藥品磨粉成本分析顯示，每包藥粉的工錢成本六點零四元，若以一天四包、三天份藥計，成本即達七十二點四八元；但目前健保給付每張處方箋藥事服務費只有三十二元，根本是要讓醫院做賠本生意。台北馬偕醫院曾針對此事詢問健保局，但健保局每一處室答覆不一，一下說沒問題，一下說違法，讓醫院不知所措。

目前國泰醫院的做法是，十二包藥粉以下不收磨藥費，超過十二包以上，每包收取三元磨藥費；台北馬偕醫院只針對一顆藥分成六分的六分一藥粉提供磨藥服務，過去每包藥粉收取磨藥費五元，去年十月起降價，改以每張處方箋收一百五十元。不過，有藥劑師透露，各大醫院若要加收費用，事前都先協商，其實，各醫院都收取了磨藥費，只是有些醫院將此項費用算在其他成本中，消費者無從得知；但誠實在費用明細列出磨藥費的醫院，反倒引來病人聲討，未來那還有醫院敢誠實做生意？

台大醫院藥劑部主任陳燕惠指出，磨藥確實耗時費工，雖然醫院都有磨藥機，但在切割藥品、以免破壞稀釋、劑量計算，都必須以人力來做，加上在每磨一次藥，就須仔細清洗磨藥機，以免藥品交互汙染，人力成本確實遠超過一般開劑，該院藥劑部雖然曾向院方反映應加收費用，但院方擔心違反健保規定，而未收費。

藥事服務費已含磨粉成本

健保局：額外收取 處5倍罰鍰

【記者張耀懋／報導】對部分醫療院所另向病患收取藥丸磨粉費用一事，中央健保局昨天強調，健保所給付的藥事服務費已內含磨粉費用，醫療院所不得巧立名目另向病患收費，違者除應退還病患超收的金額外，還會被處以五倍罰鍰。

由於醫療院所向藥廠購買的藥品多是藥丸，若要磨成藥粉，常要藥局人員另行加工，還要依量分包，十分費時、費工，因此，許多提供磨粉服務的醫療院所會另向病患收費，有些怕麻煩的醫療院所則乾脆拒絕提供這項服務。

不過，健保局醫務管理處經理林金龍指出，健保法第五十八條規定，除健保法規定的收費項目以外，特約醫療院所不得另向保險對象收取費用，而磨粉費用應內含在醫療給付內，當然不該另向病患收費，健保局也呼籲被要求付費的保險對象，可檢具收據向健保局檢舉，健保局除會代保險對象索還磨粉費用外，還會對違法收費的醫療院所處以超收費用的五倍罰鍰。