

※ 考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

**I. Select one optimal answer. (30 points)**

1. Which of the following is incorrect for management hypertension?
  - A. A goal BP of <140/90 mmHg is recommended for most patients in JNC7 guideline.
  - B. Most patients with stage II hypertension should be initially treated with a first-line antihypertensive drug
  - C. Lifestyle modification alone is appropriate for most patients with prehypertension
  - D. Candesartan may cause hyperkalemia in patients with chronic kidney disease.
  
2. Which of the following drugs can be used to treat chronic hypertension in pregnancy?
  - A. Labetalol
  - B. Captopril
  - C. Losartan
  - D. Esmolol
  
3. Which of the following statement is incorrect?
  - A. Dosing alterations of cyclosporine do not appear to be required after hemodialysis procedures.
  - B. The predominant ranges for severe renal insufficiency can be defined as a CLcr of 30 to 59 ml/min.
  - C. The initial or "loading" dose for should be the same for patients with impaired renal function as those with normal renal function.
  - D. Proper assessment of total serum calcium concentrations includes measurement of the patient's serum albumin concentration.
  
4. Which of the following statement for controlled release is incorrect?
  - A. Reduction in drug plasma level fluctuation
  - B. Reduction in dosing frequency enhances patient's compliance
  - C. Good for patients to avoid night time dosing
  - D. Good flexibility in accurate dose adjustment
  
5. Which the following drug is the only oral hypoglycemic mediation proven to reduce the risk of total mortality, and therefore, should be included in the therapy for all type 2 diabetes, if tolerated and not contraindicated?
  - A. Sulfonylurea
  - B. Metformin
  - C. Dipeptidyl peptidase-4 inhibitors (DPP4 inhibitors)
  - D. Selective sodium-dependent glucose cotransporter-2 inhibitors (SGLT2 inhibitors)

6. Among patients with diabetes, in order to reduce the risk for major adverse cardiovascular events (MACE) or death, aggressive management of cardiovascular risk factors is important. Which the following strategy is correct for the prevention of MACE?
  - A. Targeted goal for low-density lipoprotein cholesterol (LDL-C):  $<100\text{mg/dl}$  ( $<2.59\text{ mmol/L}$ )
  - B. Targeted goal for high-density lipoprotein cholesterol (HDL-C):  $\geq 40\text{ mg/dl}$  ( $\geq 1.03\text{ mmol/L}$ )
  - C. Targeted goal for blood pressure:  $< 130/80\text{ mm Hg}$
  - D. All above are correct.
  
7. For patients with asthma, which the following therapy is typically recommended as the initial therapy?
  - A. Inhaled corticosteroids (ICS)
  - B. Long-acting  $\beta$ -agonist (LABA)
  - C. Short-acting  $\beta$ -agonist (SABA)
  - D. Oral corticosteroids
  
8. Which drug is not adjusted for its dose when it is used in patients with creatinine clearance  $<30\text{ mL/min}$  ( $<0.50\text{ mL/s}$ ) or for patients receiving hemodialysis?
  - A. Isoniazid
  - B. Pyrazinamide
  - C. Ethambutol
  - D. Streptomycin
  
9. Which the following antimicrobial agent is the preferred choice for prophylaxis in the most surgical procedures because of their spectrum of activity, safety, and cost.
  - A. Third-line cephalosporins (e.g., ceftriaxone)
  - B. Vancomycin
  - C. First-generation cephalosporins (e.g., cefazolin)
  - D. Clindamycin
  
10. Which the following consideration with regard to the use of combined hormonal contraceptives (CHC) is **incorrect**?
  - A. CHC can be used for women older than 35 years with migraine, uncontrolled hypertension, or diabetes with vascular diseases.
  - B. Smoking 15 or more cigarettes per day women over 35 years is a contraindication to the use of CHCs. This is because women older than 35 years who smoke and take oral contraceptives have an increased risk of myocardial infarction.
  - C. Progestin-only method should be considered among the women older than 35 years who smoke.
  - D. Women with controlled dyslipidemias can use low-dose CHCs, with monitoring of fasting lipid

profiles.

11. Attention deficit hyperactivity disorder (ADHD) affects children and teens and can continue into adulthood. Which of the following sentence about ADHD treatment is incorrect?
- A. In Taiwan, use of amphetamine is the most common psychostimulant treatment for all ages with ADHD, following by non-psychostimulant atomoxetine.
  - B. Alpha-2-adrenergic agents such as guanfacine and clonidine are less effective than stimulants.
  - C. We can consider to use sustained release methylphenidate to improve adherence of patients.
  - D. Atomoxetine is a good option to manage ADHD symptoms in adolescents and adults with substance abuse disorders.
12. Benign prostatic hyperplasia (BPH) is an enlarged prostate gland that may cause urinary problems. Which of following drug for BPH interferes with testosterone stimulatory effect and can decrease prostate size?
- A. Finasteride
  - B. Tamsulosin
  - C. Tadalafil
  - D. Oxybutynin
13. Which of the following drug for reliving urinary incontinence symptoms is not anticholinergic agent?
- A. Oxybutynin
  - B. Trospium
  - C. Tolterodine
  - D. Mirabegron
14. In any form of glaucoma, reduction of intraocular pressure (IOP) is essential. Which class of drug is generally not considered as first line treatment for glaucoma because of increased frequency of adverse effect and reduced efficacy?
- A. Cholinergic agonists (e.g., pilocarpine)
  - B. Beta-adrenergic blocking agents (e.g., timolol)
  - C. Prostaglandin analogs (e.g., latanoprost)
  - D. Alpha-2-adrenergi agonists (e.g., brimonidine)
15. Alzheimer's disease is a neurodegenerative disorder marked by cognitive and behavioral impairment that significantly interferes with social and occupational functioning. Which of the following sentence about the treatment of Alzheimer's disease is incorrect?
- A. In the mild-to-moderate Alzheimer's disease, consider therapy with cholinesterase inhibitors.
  - B. Cholinesterase inhibitors such as memantine are indicated for treatment of Alzheimer's disease,

- C. There is no evidence supporting combination therapy of more than one cholinesterase inhibitors.
- D. Ginkgo biloba may increase blood flow and decrease blood viscosity that with potential to prevent or treat Alzheimer's disease.

**II. For each drug in column A, match most relevant description in column B. (20 points)**

A.

- (1) Beers Criteria
- (2) Bevacizumab
- (3) Clozapine
- (4) Cinacalcet
- (5) Ivabradine
- (6) Eplerenone
- (7) Tacrolimus
- (8) Tofacitinib
- (9) Trastuzumab
- (10) Venlafaxine

B.

- (1) For patients with stable, symptomatic chronic heart failure.
- (2) Fewer acute rejection episodes than cyclosporine-treated in kidney transplant patients.
- (3) Serotonin–norepinephrine reuptake inhibitor
- (4) High degree of selectivity for the aldosterone receptor
- (5) JAK inhibitor for use in patients with moderate to severe rheumatoid arthritis who have intolerance to methotrexate
- (6) Closely monitoring WBC count to avoid agranulocytosis.
- (7) Treatment of early stage HER2 positive breast cancer
- (8) Potentially inappropriate medication use in older adults
- (9) Life-threatening and fatal hypocalcemic events have been reported
- (10) Recombinant humanized monoclonal antibody inhibiting vascular endothelial growth factor A

**III. Fill the blank with proper answer. (30 points)**

1. \_\_\_\_\_ (1) \_\_\_\_\_ block gastric acid secretion by inhibiting gastric \_\_\_\_\_ (2) \_\_\_\_\_ in gastric parietal cells, are superior to H<sub>2</sub>-receptor antagonists in treating patients with moderate to severe GERD.
2. Prophylaxis medications is recommended for high emetogenic chemotherapy, includes a \_\_\_\_\_ (3) \_\_\_\_\_ (eg. Ondansetron), \_\_\_\_\_ (4) \_\_\_\_\_, and NK1 receptor antagonist (eg. \_\_\_\_\_ (5) \_\_\_\_\_ or \_\_\_\_\_ (6) \_\_\_\_\_).
3. The KDIGO definition of anemia is the Hb is less than \_\_\_\_\_ (7) \_\_\_\_\_ for adult males and less than \_\_\_\_\_ (8) \_\_\_\_\_ for adult females.
4. In the pharmacotherapy for patients with asthma, \_\_\_\_\_ (9) \_\_\_\_\_ are effective to prevent bronchial smooth muscle constriction. \_\_\_\_\_ (10) \_\_\_\_\_ are recommended as the initial therapy for chronic obstructive pulmonary disease (COPD) patients with mild or intermittent symptoms.
5. \_\_\_\_\_ (11) \_\_\_\_\_ and \_\_\_\_\_ (12) \_\_\_\_\_ are two essential therapy in drug regimens for patients with tuberculosis from initial to continuation phases, if tolerated or not contraindicated.
6. \_\_\_\_\_ (13) \_\_\_\_\_ is one of the most common side effects of haloperidol. Anticholinergic drugs such as trihexyphenidyl are frequently used to control such side effects.
7. Antipsychotic agent, \_\_\_\_\_ (14) \_\_\_\_\_, has a unique mechanism of action as a dopamine D<sub>2</sub> partial agonist, serotonin 5-HT<sub>1A</sub> partial agonist and serotonin 5-HT<sub>2A</sub> antagonist.
8. Stalevo® is a combination of \_\_\_\_\_ (15) \_\_\_\_\_, carbidopa and entacapone used for the treatment of Parkinson's disease.

**IV. Answer the Questions: (20 points)**

1. Dispensing in error is traumatic for the pharmacist as well as the patient; therefore, the goal of every pharmacy is to reduce the amount of dispensing errors. Dispensing errors include any inconsistencies or deviations from the prescription order, such as dispensing the incorrect drug, dose, dosage form, wrong quantity, or inappropriate, incorrect, or inadequate labeling. Also, confusing or inadequate directions for use, incorrect or inappropriate preparation, packaging, or storage of medication prior to dispensing are considered to be errors. Please address the strategy to reduce these dispensing errors.
2. A 7-year-old boy with type 1 diabetes is recently switched his basal insulin regimens from neutral protamine hagedorn (NPH) insulin (i.e., Humulin N® NPH) to basal insulin analog (i.e., Lantus® insulin glargine). These two insulins are in disposable “pen” forms. Please provide education to his parents with regard to the differences in pharmacokinetics between NPH and insulin glargine, how to use “pen” insulin, and any considerations when using pen insulin.