



# UNIVERSITY OF NAIROBI

## UNIVERSITY EXAMINATIONS 2017/2018

### SIXTH YEAR EXAMINATIONS FOR THE DEGREE OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY

#### HME 600: MEDICINE

#### MULTIPLE CHOICE QUESTIONS

**DATE: OCTOBER 17, 2018**

**TIME: 2.00 P.M. – 3.30 P.M.**

#### INSTRUCTIONS:

1. There are 75 Multiple Choice Questions (MCQs) in this paper. Ensure that your paper has all the questions.
2. Each question has **ONE BEST ANSWER.**
3. There is no negative marking for incorrect responses.
4. No mark will be given if more than one answer is marked in a single question.
5. An answer sheet is provided where all your answers should be appropriately marked as per instructions.
6. The examination question paper should be left in the examination room.

- Parkinsons
- A 62 year old female presents with slowed shuffling gait, stooping forward and right hand tremor. What is the **MOST APPROPRIATE** drug to start? *no dyskinesia*

(a) Acetylcholine agonists *>70y/Ltd fan - L dopa/carbidopa*

(b) **Dopamine agonists** - *delays dyskinesia, weak functional - Dopamine agonists -*

(c) Catechol-O-methyl transferase (COMT) inhibitors *pramipexole, bromocriptine, carbegoline*

(d) Levodopa/carbidopa *-65-70yr* **Worsening - add selegiline, entacapone**

(e) Vitamin B Supplements **Deep brain stimulation**
  - A 32 year old female is on follow up for SLE and is on prednisone 30 mg/day and hydroxychloroquine 200 mg daily. In the surveillance of anticipated adverse drug outcomes, which one of the following is **NOT** an anticipated outcome from her current therapy?

(a) Retinopathy ✓

(b) Osteopaenia ✓

(c) **Haematuria**

(d) Elevated blood sugar ✓

(e) Elevated blood pressure ✓
  - Which one of the following statements is **NOT TRUE** regarding typhoid fever?

(a) Blood culture is usually positive in the 1<sup>st</sup> week of illness ✓ *Week 1 → Blood, Stool, Urine*

(b) Widal test is likely to be positive in the 2<sup>nd</sup> week of illness *(7-4d) 2 → Widal test*

(c) Urine culture is likely to be positive in the 4<sup>th</sup> week of illness ✓ *3 → Bm, urine 98*

(d) Stool culture is likely to be positive in the 1<sup>st</sup> week of illness ✓ *4 → Bm, urine*

(e) **Leucopenia with relative lymphocytosis is known to occur** *lymphocytosis*
  - Which one of the following anti-neoplastic agents is **CORRECTLY-MATCHED** with the dose-limiting toxicity?

(a) Cytosine arabinoside - Cardiotoxicity *neutropenia*

(b) **Cyclophosphamide - Haemorrhagic cystitis**

(c) Doxorubicin - Cerebellar toxicity *neutropenia*

(d) Methotrexate - Peripheral neuropathy *neutropenia*

(e) Vincristine - Nephrotoxicity *neutropenia*
  - A 58 year old female on follow-up for erosive rheumatoid arthritis well controlled on etanercept and methotrexate is scheduled for laparoscopic gall bladder surgery for recurrent biliary colic due to gall stones. The surgery will be done under general anaesthesia with endo-tracheal intubation. The physical examination is essentially normal except for bilateral ulnar deviation. Which one of the following tests would be **INDICATED** in this patient pre-operatively?

(a) High resolution CT scan of the chest

(b) **MRI of the cervical spine**

(c) Cervical spine radiograph

(d) Pulmonary function tests

(e) Echocardiography

6. A 38 year old male is found to have systemic hypertension. Which one of the following finding is NOT suggestive of secondary hypertension?
- (a) History of heavy snoring <sup>OSA</sup>
  - (b) Low serum potassium <sup>renal disease</sup>
  - (c) Red blood cell casts on urinalysis <sup>renal dx</sup>
  - (d) Sinus tachycardia <sup>white hemocytoma</sup>
  - Failure to respond to monotherapy
7. A 68 year old male with type 2 diabetes for 10 years presents with enuresis that is disturbing to him. He is on glibenclamide and metformin. Recently, the dose of glibenclamide was enhanced to improve his glucose control. Which of the following does NOT explain his new onset enuresis?
- (a) Hypoglycemia
  - (b) Nocturnal seizures ✓
  - Chronic kidney disease
  - (d) Adverse effect of metformin
  - (e) Prostatism
8. A 79 year old female with severe constipation is found to have multiple diverticuli on colonoscopy. Which one of the following is the MOST APPROPRIATE next step in her management?
- (a) Stool softeners
  - (b) Prophylactic surgery
  - (c) Phenolphthalein laxatives
  - Increasing dietary fibre ✓
  - (e) Psychotherapy
9. A patient who has had diarrhea and vomiting for the last 4 days is evaluated. His blood pressure is 92/52 mmHg. Which of the following is an expected additional finding in this patient?
- (a) Bounding pulses
  - Tachycardia
  - (c) Polyuria
  - (d) Central cyanosis
  - (e) Cardiomegaly
10. A 20 year old female presents with a 2 week history of weakness predominantly of the proximal region. She is unable to comb her hair and squat from a sitting position. Which of the following is NOT an appropriate investigation? <sup>Polyomyelitis</sup>
- (a) Aldolase level
  - (b) Creatinine phosphokinase (CPK) level
  - (c) Electromyogram (EMG)
  - (d) Muscle biopsy
  - Troponin level

11. A 46 year old female is found to have fatigue of undue proportions. She has menorrhagia against her expectations. Five years earlier, she was treated with radioactive iodine for Graves' disease. Which one of the following is the diagnostic **TEST OF CHOICE** to establish the diagnosis?

- Serum thyroid-stimulating hormone (TSH)
- (b) Serum tri-iodothyronine (T<sub>3</sub>)
- (c) Thyrotrophin-releasing hormone (TRH) stimulating test
- (d) Thyroid ultrasound scan
- (e) Radio-active iodine uptake scan

12. Which one of the poisons/drugs is **NOT** appropriately paired with its antidote?

- (a) Codeine - Naloxone ✓
- (b) Iron - Desferrioxamine ✓
- (c) Paracetamol - Acetylcysteine
- (d) Methanol - Ethanol
- Organophosphorus insecticides - Dicobalt edetate

13. A 45 year old female presents with a 3 month history of axillary and neck swellings, fever and weight loss. She was started on empiric anti-tuberculous therapy without improvement. You suspect that she could be having a lymphoma. Her urea and creatinine are deranged (urea - 20 mmol/L and creatinine 320 umol/L) with a low serum calcium level of 1.9 mmol/L (Normal range - 2.2 to 2.6 mmol/L). What is the **MOST LIKELY** explanation for her biochemical abnormalities?

- (a) Dehydration
- (b) Lymph nodes causing obstructive uropathy
- (c) Acute kidney injury due to sepsis
- Tumour lysis syndrome
- (e) Nephrotoxicity of anti-tuberculous drugs

14. A 43 year old male is brought to the Accidents and Emergency Department because of alcohol intoxication. He has had repeated bouts of emesis and is found choking. Lung examination reveals right basal crackles. Which one of the following is the **MOST SUITABLE** course of action?

- Prescribe azithromycin and metronidazole
- (b) Observe and follow-up with chest radiograph
- (c) Initiate corticosteroid therapy
- (d) Prescribe metoclopramide
- (e) Prescribe moxifloxacin

15. An 18 year old girl known to have rheumatic valvular heart disease presents with several weeks of fever, night sweats and worsening dyspnoea. She has pallor, finger clubbing and splenomegaly. Which one of the following test is **NOT** useful in making the diagnosis?

- (a) Blood culture ✓
- Culture of a throat swab ✓ (LRHD)
- (c) Echocardiography ✓
- (d) Haemogram ✓
- (e) Urinalysis ✓

16. A 49-year old female is being investigated for chronic diarrhea and weight loss. Which one of the following investigations will **MOST LIKELY** yield the definitive diagnosis?
- (a) D-xylose test
  - (b) Fecal osmotic gap
  - (c) Fecal fat measurement
  - (d) Mucosal biopsy
  - (e) Schilling test
17. A 23 year old female patient presents with frequency, dysuria and urge incontinence. Which one of the following is **TRUE** concerning this presentation? *E. coli*
- (a) The commonest cause is a fungal infection  $\times$
  - (b) Use of condoms during sexual exposure prevents attacks  $\times$
  - (c) Her male sexual partner will need attention too
  - (d) Gram negative bacilli are usually grown on urine culture
  - (e) Males are equally predisposed as women in this age group  $\times$
18. A 19 year old male presents with rapidly progressive weakness in the lower limbs then upper limbs over 3 days. He reports having loose stools 2 weeks before presentation. There is no change in sensation. What is the **MOST USEFUL** investigation to assist with the diagnosis *CSF*
- (a) CSF cell count and biochemistry
  - (b) Erythrocyte sedimentation rate
  - (c) Imaging of the cervical spine
  - (d) Serum electrolytes
  - (e) Stool microscopy
19. A 35 year old female on follow-up for rheumatoid arthritis is on methotrexate, prednisone and leflunomide. On review in the rheumatology clinic, she is found to have low disease activity. Which one of the following is the **MOST APPROPRIATE** action during this consultation?
- (a) Maintain current treatment
  - (b) Withdraw methotrexate
  - (c) Withdraw prednisone
  - (d) Withdraw leflunomide
  - (e) Stop treatment
20. A 35-year-old newly diagnosed HIV positive female is referred to the CCC for enrolment and treatment initiation. She has no other co-morbidity. What ART regimen would you recommend for her in keeping with current 2018 national guidelines?
- (a) Tenofovir + Lamivudine + Dolutegravir
  - (b) Tenofovir + Lamivudine + Efavirenz
  - (c) Tenofovir + Lamivudine + Nevirapine
  - (d) Zidovudine + Lamivudine + Nevirapine
  - (e) Zidovudine + Lamivudine + Atazanavir/ritonavir

21. A 55 year old female on chemotherapy for breast cancer presents to your facility 9 days after her 3<sup>rd</sup> cycle of chemotherapy with fever of 38°C and palpitations. The complete blood count shows an absolute neutrophil count of  $0.4 \times 10^9/L$ . What is the **MOST APPROPRIATE** next step?
- (a) Commence colony stimulating factors
  - Commence piperacillin + tazobactam**
  - (c) Order for urgent echocardiogram
  - (d) Order for urgent chest radiograph
  - (e) Order for abdominal ultrasound scan
22. A 68 year old male on follow-up for COPD with a 30 pack-year history of cigarette smoking presents with right shoulder pain which radiates down the arm. The pain has progressed despite physiotherapy and non-steroidal anti-inflammatory drugs. Which of the following is the **MOST APPROPRIATE** next course of action in this patient?
- (a) Cervical spine radiograph
  - CT scan of the chest**
  - (c) Chest radiograph
  - (d) Radiograph of the right shoulder
  - (e) MRI of the right shoulder
23. Which of the following cardiac lesion is **NOT** appropriately matched with the clinical finding?
- (a) Aortic stenosis – Heaving apex
  - Aortic regurgitation – Narrow pulse pressure** - *Wide pulse pressure*
  - (c) Mitral stenosis – Loud first heard sound
  - (d) Mitral regurgitation – Soft first heart sound
  - (e) Tricuspid regurgitation – Pulsatile liver
24. Which one of the following is **TRUE** regarding ascites in liver disease?
- (a) Thiazides are the diuretics of choice
  - (b) Malignant ascites responds well to diuretic therapy
  - (c) Portal hypertension is a rare cause
  - Aldosterone antagonists are the preferred diuretics** - *Spironolactone*
  - (e) Infectious aetiology is uncommon
25. A patient presents with generalized body swelling. His investigations show protein +++, serum albumin 20 g/L (Normal range – 35 to 50g/L). Which of the following conditions is **LIKELY** to present in this manner?
- (a) Renal manifestation of *Plasmodium falciparum* infection <sup>malaria</sup> ×
  - (b) Renal manifestation of *Schistosoma haematobium* infection
  - Lupus nephritis**
  - (d) Obstructive uropathy
  - (e) Tenofovir toxicity

26. A 40 year old HIV positive male has been on HAART for the last 20 years. He has had a challenge with adherence to therapy and is now on a 3<sup>rd</sup> line HAART regimen. He presents with progressive paraplegia. The **MOST LIKELY** organism responsible for this clinical picture is:-

- (a) Cytomegalovirus (CMV)
- (b) Human herpes virus 6 (HHV6)
- (c) *Herpes simplex virus* (HSV) type II
- (d) *Herpes zoster virus* (HZV)
- (e) *West Nile virus* (WNV)

27. A 47 year old female presents to the clinic with severe and progressive generalized bone pains for the past 3 years. Morning cortisol is 10 ug/dl (Normal range - 5 to 25 ug/dL) Bone mineral density is - 2.5 SD (Normal range - +1 to -1 SD). Serum protein electrophoresis is normal. The **MOST LIKELY** diagnosis is:

- (a) Osteomalacia
- (b) **Osteoporosis**
- (c) Osteonecrosis
- (d) Osteopetrosis
- (e) Multiple myeloma

28. Which one of the following is **NOT** an indication for pneumococcal vaccination?

- (a) Chronic pulmonary disease ✓
- (b) Asplenia ✓
- (c) All adults 65 years or older ✓
- (d) Dialysis dependent chronic renal failure ✓
- (e) Household contacts with a confirmed case of pneumococcal pneumonia

29. A 32 year old female presents with a 3 month history of fatigue and early satiety. Physical exam reveals a massive splenomegaly extending 32 cm below the left costal margin. The WBC is  $521 \times 10^9/L$ , Hemoglobin is 10.1 g/dl and platelet count is  $774 \times 10^9/L$ . Which of the following investigation is **LEAST USEFUL** in the next phase of evaluation?

- (a) Bone marrow biopsy ✓
- (b) Cytogenetics ✓
- (c) Peripheral blood film
- (d) **CT scan abdomen/pelvis**
- (e) Uric acid levels ✓

30. A 65 year old male presents with progressive dyspnoea on exertion and recurrent episodes of cough, often worse in the morning and productive of white-yellow sputum. He smoked for 40 years before stopping 5 years ago. Examination is notable for bipedal oedema and mild prolonged expiratory phase and some wheeze. Which of the following tests would confirm the underlying diagnosis in this clinical picture?

- (a) Chest radiograph
- (b) CT scan of the chest
- (c) Echocardiography
- (d) **Spirometry**
- (e) Sputum cytology, gram stain and culture

36. A Pa  
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31. A 56 year old male with history of alcohol abuse presents with features of congestive heart failure. He has a BMI of 33 kg/m<sup>2</sup>. The left ventricular ejection fraction is 30%. Advice on lifestyle management should include all of the following EXCEPT:

- (a) Loss of weight
- (b) Influenza vaccination
- (c) Moderation of alcohol intake
- (d) Regular physical activity
- (e) Reduction in salt intake

32. A 45 year old male presents with increasing fatigue over the last few months. He has also noticed that his face has darkened and he has joint pains. He reports reduced libido and increased thirst. On examination his facial skin appears dark grey and he has a hepatomegaly. What is the MOST LIKELY diagnosis?

- (a) Wilson's disease
- (b) Haemochromatosis
- (c) Alpha-1 antitrypsin deficiency
- (d) Autoimmune hepatitis
- (e) Primary sclerosing cholangitis

33. In patients with CKD, which of the following manifestation is a definite indication for dialysis?

- (a) Anaemia not responding to erythropoiesis stimulating agents (ESA)
- (b) Severe metabolic acidosis
- (c) Hypocalcemia with tetany
- (d) Hyperthyroidism
- (e) Hypovolemia

34. A 25 year old female presents with a 3-day history of visual loss on the left eye, with pain on eye movement. What is the MOST LIKELY diagnosis?

- (a) Myasthenia gravis *x ptosis & diplopia.*
- (b) Oculomotor nerve palsy *x eye cut & down, ptosis, large pupil.*
- (c) Optic neuritis
- (d) Ophthalmic migraine *- Temporary vision loss in one eye, associated with headache.*
- (e) Retinitis pigmentosa *- Trouble seeing at night, ↓ peripheral vision.*

35. Which one of the following is NOT associated with osteonecrosis?

- (a) Cushing's disease ✓
- (b) Oral contraceptive use
- (c) Radiotherapy ✓
- (d) Osteoarthritis
- (e) Alcohol abuse ✓

Common leads  
Trauma  
MI  
Sickle cell  
IB: phos phos  
Mechanical stress



36. A patient is treated with a 10-day course of ceftriaxone for *Haemophilus influenzae* meningitis. She makes good recovery. However, soon after the antibiotic is stopped, she develops watery diarrhea associated with abdominal pain. Two days later, she has fever and bloody diarrhea (up to 10 times per day). Appropriate management should now include:
- (a) Restarting the original antibiotic  
 (b) Intravenous vancomycin  
 (c) **Oral metronidazole** *Pseudomonas colitis*  
 (d) Corticosteroid therapy  
 (e) Intravenous levofloxacin
37. A 36 year old female is on follow up for recurrent deep venous thrombosis (DVT). She takes 5 mg of warfarin daily. Her latest INR is 2.9. She however says that she has experienced prolonged menses. It is now the 8<sup>th</sup> day of heavy flow. The last 3 consecutive months have been similar. What would you advise her to do?
- (a) Continue warfarin same doses  
 (b) Stop warfarin and change to enoxaparin  
 (c) Hold warfarin for expected duration of menses and restart at 5 mg after the menses  
 (d) **Reduce dose of warfarin to 2.5 mg daily**  
 (e) Prescribe vitamin K tablets to take each time she is on her menses
38. A 32 year-old female presents with a 12 week history of unproductive cough, fatigue and shortness of breath despite several courses of antibiotics. A chest radiograph reveals bilateral hilar lymphadenopathy. The blood calcium level is 2.8 mmol/L. (Normal range - 2.2 to 2.6 mmol/L). What is the **MOST LIKELY** diagnosis?
- (a) Acute lymphoblastic leukemia +  
 (b) Multiple myeloma +  
 (c) Mycoplasma pneumoniae +  
 (d) **Sarcoidosis**  
 (e) Tuberculosis +
39. Which one of the following conditions is **NOT** complicated by secondary osteoarthritis?
- (a) Congenital hip dislocation ✓  
 (b) Joint hypermobility syndrome ✓  
 (c) Acromegaly ✓  
 (d) Osteonecrosis  
 (e) **Systemic sclerosis**
40. A 55 year old male with history of poorly controlled hypertension presents with 6 months history of dyspnoea on exertion. He is in New York Heart Association (NYHA) class 2. The BP is 169/102 mmHg. He has pedal oedema and bibasal crepitations. The ECG shows left ventricular hypertrophy. The echocardiogram shows an ejection fraction of 35%. The following drugs are optimal choices for initial therapy **EXCEPT**:
- (a) **Amlodipine** ✓  
 (b) Enalapril ACE  
 (c) Frusemide *diuretic*  
 (d) Metoprolol *B blocker*  
 (e) Spironolactone *K sparing Aldosterone antagonist*

41. A 25 year old male with liver cirrhosis was found to have grade 2 oesophageal varices at endoscopy. He has no past or current history of bleeding. Which is the **BEST** intervention for prophylaxis against bleeding in this patient?

- (a) Octreotide infusion
- (b) Highly selective shunt procedure
- (c) Sclerotherapy
- (d) Propranolol
- (e) Transjugular intrahepatic portosystemic shunt (TIPS)

42. Which is one of the following is **NOT** a factor in the causation of anaemia of chronic kidney disease (CKD)?

- (a) Hypertension
- (b) Decreased renal synthesis of erythropoietin ✓
- (c) Inflammation ✓
- (d) Decreased red blood cell survival ✓
- (e) Chronic blood loss ✓

43. A 60 year old male presents with progressive weakness. The weakness occurs on effort. He denies any diplopia. He has recently noticed erectile dysfunction and dry mouth. Examination is normal including the reflexes. The **MOST LIKELY** diagnosis is:-

- (a) Polymyositis ✗
- (b) Eaton-Lambert syndrome - Reflexes absent ✓
- (c) Myasthenia gravis ✗
- (d) Mitochondrial disease
- (e) Gullain-Barre syndrome ✗

\* KA 44. A 54 year old male with diabetes presents with a 2 week history of polyuria and polydipsia. He is on oral agents - glibenclamide and metformin. Investigations done show:-

Fasting blood glucose - 12mmol/L -  
HbA<sub>1c</sub> - 10.2%  
Urinalysis: Ketones - 2+ -

The **APPROPRIATE** next step in his management is:-

- (a) Add another oral agent ✗
- (b) Start insulin and stop glibenclamide
- (c) Increase the dose of glibenclamide - Sulphonyl urea s/e - hypoglycaemia
- (d) Intensify diabetes education ✗
- (e) Rehydrate and reassure

45. Which one of the following is **NOT** an AIDS-defining illness?

- (a) Cryptococcal meningitis ✓
- (b) Kaposi's sarcoma ✓
- (c) Oral candidiasis ✓
- (d) *Pneumocystis jirovecii* pneumonia ✓
- (e) HIV-associated cardiomyopathy

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46. Which of the following treatments is **MOST-EFFECTIVE** in lowering uric acid levels in a patient with tumour lysis syndrome?
- (a) ~~Allopurinol~~ Allopurinol
  - (b) Colchicine
  - (c) Febuxostat - prevents tumor lysis syndrome.
  - (d) Sodium bicarbonate
  - (e) Rasburicase used when uric acid not lowered by std approaches - allopurinol.
47. A 58 year old female presents to the outpatient department with a 4-month history of hoarse voice. She has no cough, fever or throat pain. On examination, she has a wheeze over the left mid-lung zone. Which one of the following is the **BEST** next course of action in her management?
- (a) Prescribe a course of antibiotics and review after 7 days
  - (b) Write a pulmonary consultant for bronchoscopy
  - (c) Order a chest radiograph
  - (d) ~~Order a chest CT scan~~ Order a chest CT scan
  - (e) Prescribe a short acting beta adrenergic agonist
48. Which one of the following drug combinations is **NOT** recommended in the management of systemic hypertension?
- (a) Calcium channel blocker - Beta blocker
  - (b) Calcium channel blocker - Angiotensin receptor blocker
  - (c) ~~Angiotensin converting enzyme inhibitor / Angiotensin receptor blocker~~
  - (d) Thiazide - Angiotensin converting enzyme inhibitor
  - (e) Thiazide - Calcium channel blocker
49. A patient presents with bloody diarrhea. Stool analysis reveals amoebic trophozoites. Which **ONE** of the following findings is seen in this condition?
- (a) Diffuse colonic inflammation
  - (b) ~~Colonic ulcers with intervening normal mucosa~~
  - (c) Many pus cells in stool
  - (d) Crypt abscesses are seen at histology
  - (e) Involvement of the terminal ileum is common
50. A 60 year old male with known lung cancer is followed up with no major symptoms. His blood pressure is 145/90 mmHg, pulse rate is 80 beats/minute and regular. He has no leg oedema. His serum sodium is 125 mmol/L, BUN 6 mmol/L, Potassium 4.5 mmol/L, creatinine is 108 umol/L. The **MOST LIKELY** explanation for the hyponatremia is:-
- (a) Diuretic use
  - (b) Psychogenic polydipsia x
  - (c) Adrenal insufficiency
  - (d) ~~Syndrome of inappropriate anti-diuretic hormone (SIADH) secretion~~ SIADH
  - (e) Cerebral salt wasting x

51. A 25 year old female living with HIV presents with 3 weeks of headache. CD4 count is 80 cells/uL. On examination, optic discs were normal and lumbar puncture was done. CSF results showed protein 1.2 g/L, cell count 100/uL predominantly lymphocytes, negative CSF CRAG and no malignant cells on cytology. She hardly improved after 5 days of regular antibiotics for bacterial meningitis. What is the **MOST APPROPRIATE** empiric next step?

(a) Add acyclovir  
(b) Add anti-cryptococcal treatment  
(c) Add dexamethasone  
 ~~Add anti-tuberculous drugs~~ **Anti tubercular drugs**  
(e) Add anti-toxoplasmosis treatment

52. A 35 year old diabetic, alcoholic presents to Accidents and Emergency Department with a 2-day history of right knee pain and swelling, low grade fever and no history of trauma. In establishing the diagnosis, which one of the following is the **MOST APPROPRIATE** initial investigation for his work up?

(a) Blood culture, microscopy, sensitivity  
 ~~Joint aspiration~~ **Joint aspiration**  
(c) Serum uric acid assay  
(d) Total blood count and ESR  
(e) Xray of the knee

53. Which of the following anti-retroviral drug is **APPROPRIATELY MATCHED** with its pharmaco-dynamic effect?

~~Abacavir – Competitive inhibition of HIV reverse transcriptase~~  
(b) Raltegravir – Inhibition of HIV entry into T cells  
(c) Zidovudine – Non-competitive inhibition of HIV reverse transcriptase  
(d) Dolutegravir – Inhibition of HIV protease  
(e) Darunavir – Competitive inhibition of HIV integrase

54. A 22-year old previously well college-student is brought to hospital with a 2 month history of recurrent blood transfusions. He also complains of nose bleeds and fever. Physical exam reveals severe pallor, petechiae and tachycardia. He has no lymphadenopathy or hepatosplenomegaly. The complete blood count reveals hemoglobin of 2.7g/dL, WBC of  $0.3 \times 10^9/L$  and platelet count of  $9 \times 10^9/L$ . What is the **MOST LIKELY** diagnosis?

(a) Acute lymphoblastic leukemia  
 ~~Aplastic anaemia~~  
(c) Burkitt's lymphoma  
(d) Chronic myeloid leukemia + edema  
(e) Myelodysplastic syndrome \*

55. A 26 year old female on follow-up for asthma currently on regular inhaled corticosteroid and as needed inhaled salbutamol with good adherence presents with nocturnal awakenings 3 to 4 times in a week associated with cough and wheeze. Spirometry reveals mild airflow obstruction. Which one of the following is the **MOST APPROPRIATE** next step in her management?
- (a) Add theophylline  
 (b) Add low dose oral steroid  
 (c) **Add regular inhaled long-acting beta 2 agonist**  
 (d) Ask the patient to use the inhaled salbutamol on a regular basis  
 (e) Increase the dose of the inhaled steroid
56. A 40 year old female presents with progressive dyspnoea on exertion. Cardiovascular examination is significant for a left parasternal heave and a loud P<sub>2</sub>. Which of the following is **NOT** relevant to her presentation?
- (a) History of cigarette smoking  
 (b) **History of intermittent claudication**  
 (c) History of pulmonary tuberculosis  
 (d) History of pulmonary embolism  
 (e) History of systemic lupus erythematosus (SLE)
57. Which one of the following tumours is **CORRECTLY MATCHED** with its tumour marker?
- (a) Colorectal carcinoma -  $\alpha$ -fetoprotein  $\times$  CEA  
 (b) Chorio-carcinoma - Carcino-embryonic antigen (CEA)  $\times$  HCG $\beta$   
 (c) Medullary thyroid carcinoma - CA125  
 (d) **Pancreatic carcinoma - CA 19-9**  
 (e) Ovarian carcinoma - Human chorionic gonadotropin  $\times$  CA125
58. A 32 year old marathon runner faints and convulses at the end of a 26 km race. At hospital his evaluation shows no fever, no lateralizing signs. Brain CT scan is normal. Blood sugar 5.2 mmol/L, K<sup>+</sup> 3.9 mmol/L, Na<sup>+</sup> 120 mmol/L. BUN 3.9 mmol/L, Creatinine 100  $\mu$ mol/L. Which of the following statements is **NOT** correct?
- (a) Urgent 50% dextrose injection is useful  
 (b) It is likely he was hydrating with plain water during the race  
 (c) Intravenous 3% sodium chloride bolus injection is required  
 (d) Water ingestion should be restricted  
 (e) **Rehydration should be done with intravenous saline**
59. A 20 year old male presents with a history of headache, fever and photophobia. He is also noted to have a rash. What is the **MOST** important first step?
- (a) Isolate the patient  
 (b) Do lumbar puncture immediately  
 (c) Do CT scan head followed by lumbar puncture  
 (d) **Start on empiric antibiotics**  
 (e) Do blood cultures and await the results

60. A 48 year old asthmatic female has new-onset progressive weakness and amenorrhoea. She has noted change of body habitus with truncal obesity and hypertension. Which one of the following conditions cannot explain her clinical features?
- (a) Adreno-cortical tumour
  - (b) Lung tumour
  - (c) Pituitary tumour
  - (d) Prolonged steroid therapy
  - (e) Ovarian tumour
61. The plasma level of HIV virions in the infected host is highest:-
- (a) Within one week of infection
  - (b) Between the first and second year after infection
  - (c) During the asymptomatic phase of infection
  - (d) At the time of onset of symptoms
  - (e) Just before death
62. Which of the following cytotoxic drugs is **LEAST LIKELY** to cause emesis during chemotherapy?
- (a) Cisplatin<sup>x</sup>
  - (b) Dacarbazine<sup>✓</sup>
  - (c) Doxorubicin<sup>x</sup>
  - (d) Mustine
  - (e) Vincristine
63. Which of the following is the **MOST LIKELY** finding in a patient with chronic obstructive airway disease?
- (a) Finger clubbing
  - (b) Tracheal tug
  - (c) Elevated diaphragm
  - (d) Bi-basal crackles
  - (e) Third heart sound
64. A 65 year old male with history of cigarette smoking and hypertension presents to the emergency department with a 3 hour history of severe retro-sternal chest pain. A 12-lead ECG shows ST segment elevation in the anterior leads. The following are important steps in his immediate management **EXCEPT**:-
- (a) Assay of serum troponin
  - (b) Aspirin to chew
  - (c) Intravenous (IV) morphine
  - (d) Sublingual nitroglycerine
  - (e) Transfer to cardiac catheterization laboratory for urgent coronary angiogram

65. A 15 year old girl presents with longstanding recurrent abdominal pain, bloating and diarrhoea. Haemoglobin is 9 g/dL, MCV 105 fl; blood serology is positive for antigliadin antibody (AGA). Tissue transglutaminase antibodies (TTG IgA) is also positive. All of the following interventions are useful in her management **EXCEPT**:
- (a) Stop barley intake
  - (b) Stop rye intake
  - (c) Stop wheat intake
  - (d) Stop rice intake
  - (e) Stop bread consumption
66. A 39 year old patient has been followed up with hypertension and progressive reduction of GFR for the last 5 years. His current results show serum creatinine 659  $\mu\text{mol/L}$ , BUN 23  $\text{mmol/L}$  (Normal range - 3.5 to 6.5  $\text{mmol/L}$ ). All of the following are true **EXCEPT**:
- (a) Anaemia is commonly associated
  - (b) Hyperphosphatemia is commonly associated
  - (c) Proteinuria is a common feature in our setup
  - (d) Reversal and improvement in renal function usually occurs
  - (e) Patient should be prepared for chronic maintenance dialysis
67. A 68 year old heavy cigarette smoker presents with a constant droopy right eyelid for 3 weeks. On examination, his right eye seems 'small' and is found to have a tiny pupil. What is the diagnosis?
- (a) Lambert-Eaton Myasthenia Syndrome (LEMS) —
  - (b) Horner's syndrome
  - (c) Hypothyroidism
  - (d) Myasthenia gravis ✗
  - (e) Oculomotor palsy ✗ (large pupil)
68. Which one of the following is **NOT** a clinical feature of osteoarthritis?
- (a) Joint instability
  - (b) Peri-articular muscle atrophy
  - (c) Joint enlargement
  - (d) Pain worse at rest
  - (e) Limitation of joint mobility
69. Which one of the following antiretroviral therapy is **APPROPRIATELY MATCHED** with the side effect profile?
- (a) Efavirenz - Kidney damage and osteoporosis
  - (b) Tenofovir - Peripheral neuropathy lipodystrophy, lactic acidosis
  - (c) Zidovudine - Diarrhoea, increased blood sugar, increased cholesterol
  - (d) Abacavir - Potentially fatal hypersensitivity syndrome
  - (e) Nevirapine - Bad dreams, fatigue, dizziness, hallucinations

70. A 16 year old girl has bilateral haemarthrosis of elbow joints. She has a fluctuant right knee that is tender. She is bleeding from a venepuncture site for the past 24 hours. Which one of the following is the MOST LIKELY diagnosis?
- (a) Classical hemophilia
  - (b) Christmas disease
  - (c) Disseminated intravascular coagulation (DIC)
  - (d) Protein C deficiency
  - (e) Von Willebrand's disease
71. A 29 year old female presents with rapidly progressing dyspnoea and chest discomfort. She is afebrile. She has a regular tachycardia of 115 beats/minute and a tachypnoea of 25 breaths/minute. Chest and lung auscultation are unremarkable. The ECG shows sinus tachycardia but otherwise unremarkable. Which of the following tests is NOT relevant in her diagnostic work up?
- (a) CT pulmonary angiogram ✓
  - (b) Coronary angiogram
  - (c) D-Dimer assay ✓
  - (d) Echocardiogram ✓
  - (e) Ventilation-perfusion scan ✓
72. A 40 year old female presents with sudden onset of visual loss. She admits that 5 years ago, she had developed weakness of the limbs. Clinical examination reveals normal fundus with afferent papillary response. MRI reveals normal brain but with plaques in the spinal cord. The cerebrospinal fluid (CSF) test which is likely to give a diagnosis is:-
- (a) Angiotensin converting enzyme (ACE) levels
  - (b) Oligoclonal bands MM
  - (c) Neuromyelitis optica (NMO) antibodies
  - (d) Tuberculosis PCR
  - (e) VDRL
73. A 45 year old alcoholic male is on standard treatment for pulmonary tuberculosis. He initially responds well to the treatment but in the 2<sup>nd</sup> week he develops progressive lethargy with blood pressure of 80/50 mmHg. Which one of the following tests is NOT useful in his evaluation?
- (a) Serum electrolytes
  - (b) Blood cultures
  - (c) Fasting blood sugar
  - (d) Serum osmolarity
  - (e) 24-hour urine for cortisol metabolites



74. A 48 year old HIV positive male on prophylactic cotrimoxazole for a week presents with mucositis, conjunctivitis and targetoid lesions on the skin as well as erosions. More than 30% of the body surface is involved. Which one of the following is the **MOST LIKELY** diagnosis?

- (a) Steven-Johnson Syndrome (SJS)
- (b) Erythema multiforme major
- (c) Toxic epidermal necrolysis (TEN)
- (d) SJS-TEN overlap
- (e) Necrotizing vasculitis

75. A 35 year old male presents to the clinic with a 3 month history of persistent right knee pain and swelling which is non-traumatic. History is notable for recurrent genital tract infections. He is HIV negative. Investigations for TB including joint aspirate are negative. Which one of the following is the **MOST LIKELY** diagnosis?

- (a) Gouty arthritis
- (b) Reactive arthritis
- (c) Septic arthritis
- (d) Osteoarthritis
- (e) Haemarthrosis