The sample questions aim to illustrate the various types of format of multiple-choice questions used in Part I Examination which may be used in questions of different specialties.

Basic Sciences

1. A 50-year-old woman complains of a tendency to fall when walking. When moving her upper limbs, her hands start to shake and holding a glass of water becomes a problem. When talking, she cannot produce fluent sentences. Her cognitive functions and memory are clear and unaffected. Upon examination, she is found to have hypotonia, pendular knee jerk, mild nystagmus and dysarthria.

   Which of the following areas is **MOST LIKELY** to be affected?

   A. Cerebellum
   B. Cerebral cortex
   C. Diencephalon
   D. Limbic system
   E. Substantia nigra

   (Format: Scenario-based with positive response)

2. Glucagon plays a critical role in regulating blood glucose levels in part by modulating glycogen metabolism in the liver. The major action of this hormone is mediated through the production of which of the following intracellular second messenger molecules?

   A. AMP
   B. cAMP
   C. cGMP
   D. GMP
   E. UMP

   (Format: Non-scenario-based with positive response)

3. Toxic doses of atropine typically cause all of the following effects **EXCEPT**

   A. Blurred vision
   B. Bronchospasms
   C. Hallucinations
   D. Hyperthermia
   E. Urinary retention

   (Format: Non-scenario-based with negative response)

4. Parasympathetic and sympathetic nervous systems exert opposite actions in controlling:

   A. Diameter of blood vessels.
   B. Force of ventricular contraction.
   C. Rate of heart beat.
   D. Salivary gland secretion.
   E. Sweat gland secretion.

   (Format: Non-scenario-based with positive response)

5. Which of the following is the mechanism of action of benzodiazepines?

   A. Binding to opioid receptors to produce sedation
   B. Blocking glutamate excitation
   C. Blocking the inactivation of sodium ion channel
   D. Potentiating the action of the inhibitory amino acid glycine
   E. Potentiating the effect of GABA at chloride ion channels

   (Format: Non-scenario-based with positive response)

6. Which of the following would result from the inhibition of cholinesterase at nerve endings?

   A. Decrease the concentration of acetylcholine in the synapse
   B. Increase the amount of acetylcholine released by the nerve
   C. Increase the occupation of post-synaptic acetylcholine receptors
   D. Reduce the efficiency of synaptic transmission
   E. Reduce the post-synaptic action of acetylcholine

   (Format: Non-scenario-based with positive response)

Medicine

1. A 28-year-old intravenous drug abuser is admitted with a history of low-grade fever for 1 month, cough with occasional haemoptysis and left-sided abdominal pain. On examination, he looks unwell with mild pyrexia, raised jugular venous pressure and a systolic murmur at the left sternal edge. There are scattered crepitations in the lungs, and in the abdomen there is tenderness in the left hypochondrium.

   Which of the following diagnoses would you consider to be the **MOST LIKELY**?

   A. AIDS
   B. A ruptured amoebic abscess
   C. Staphylococcal septicaemia
   D. Staphylococcal right-sided endocarditis
   E. Typhoid

   (Format: Scenario-based with positive response)

2. A 54-year-old man presents with progressive weakness for 6 months. Blood pressure is 118/60 mm Hg supine, and 84/56 mm Hg standing. He is also noted to have increased skin pigmentation. Blood test: Na 130 mmol/l, K 7.0 mmol/l, Cl 100 mmol/l, HCO3 18 mmol/l, creatinine 99 µmol/l, glucose 3.5 mmol/l.

   What is the **MOST LIKELY** diagnosis?

   A. Adrenal insufficiency
   B. Cushing's disease
   C. Haemolysis
   D. Hyporeninaemic hypoaldosteronism
   E. Lung cancer with ectopic ACTH secretion

   (Format: Scenario-based with positive response)

3. A patient is admitted with acute pancreatitis. Which of the following is **NOT** an indicator of poor prognosis?
   A. PaO_2 7.3 kPa (normal >9.5)
   B. Patient is 60 years old
   C. Serum amylase 25000 U/L (normal <110)
   D. Serum calcium 1.9 mmol/L (normal 2.11-2.55)
   E. Temperature of 40 degrees Celsius

   (Format: Non-scenario-based with negative response)

4. A patient with Alzheimer's disease is admitted into the medical ward with suspected dehydration after having refused to drink for the past 3 days. Several laboratory tests are requested. Which laboratory test result is **MOST CONSISTENT** with a diagnosis of dehydration?

   A. Haematocrit of 38%
   B. Serum albumin of 30 g/l
   C. Serum creatinine of 110 umol/l
   D. Serum sodium of 150 mmol/l
   E. Urine specific gravity of 1.005

   (Format: Scenario-based with positive response)

5. A 65-year-old man with a long history of poorly controlled hypertension complains of recurrent shortness of breath on minimal exertion. Examination of the cardiovascular system is normal except for a prominent precordial impulse. Chest x-ray is normal except for a prominent left ventricular shadow. An exercise tolerance test with thallium scanning reveals no evidence of myocardial ischaemia. Two-dimensional echocardiography reveals left ventricular hypertrophy. Radionuclide ventriculography reveals normal right and left ventricular ejection fractions.

   What is the **MOST LIKELY** explanation for the patient's symptoms?

   A. Chronic obstructive pulmonary disease
   B. Diastolic congestive heart failure
   C. Myocardial ischaemia
   D. Reactive airways disease
   E. Systolic congestive heart failure

   (Format: Scenario-based with positive response)

6. Which of the following is **NOT** a usual clinical feature of erythema nodosum?

   A. A hypersensitivity reaction to drugs and infective agents
   B. Bilateral lesions
   C. Occurs more commonly in young females
   D. Painful subcutaneous nodules
   E. Ulcerating and scarring

   (Format: Non-scenario-based with negative response)

Paediatrics

1. A 2½-year-old boy was born at 26 weeks gestation with a birth weight of 900 gram. After birth, he was found to have a grade III intraventricular haemorrhage and had developed hydrocephalus requiring a ventriculo-peritoneal shunt at 3 months. He was discharged 5 months later. The mother notices that he cannot lift up his head, roll over or even sit. He cannot reach out for toys. Physical examination shows that muscle tone has increased in all limbs. He does not have any visual fixation.

   Which of the following is the **MOST LIKELY** diagnosis?

   A. Ataxic cerebral diplegia
   B. Athetoid cerebral palsy
   C. Global developmental delay
   D. Spastic diplegia
   E Spastic tetraplegia

   (Format: Scenario-based with positive response)

2. Which of the following is more commonly seen in Wilms' tumour rather than neuroblastoma?

   A. Abdominal distension
   B. Bone pain
   C. Bruises
   D. Red urine
   E. Weight loss

   (Format: Non-scenario-based with positive response)

3. The following clinical features are associated with congenital rubella syndrome **EXCEPT**:

   A. Cardiac defects
   B. Cerebral palsy
   C. Deafness
   D. Microphthalmia
   E. Saddle nose

   (Format: Non-scenario-based with negative response)

4. On a routine well-child examination, a 2-year-old girl is noted to be pale. On physical examination the patient is underweight, other findings are normal. Initial laboratory results are as follows: hemoglobin 7.5 g/dL, hematocrit 23%, platelet and leucocyte count are normal, eosinophilia in differential, low MCV, MCH and normal reticulocyte count.

   Which of the following is the **MOST LIKELY** diagnosis?

   A. Alpha thalassemia
   B. Beta thalassemia
   C. Iron deficiency anemia
   D. Lead poisoning
   E. Sideroblastic anemia

   (Format: Scenario-based with positive response)

5. The presence of which of the following features should strengthen your suspicion that a 2-year-old child is a victim of non-accidental injury (child abuse):

   A. Bruising on the anterior surface of the tibia
   B. Bruising on the forehead
   C. Glove and stocking type scalds
   D. Recurrent nose bleed
   E. Stranger anxiety

   (Format: Scenario-based with positive response)

6. A 12-year-old boy presents to the emergency room with 2-day history of fever, abdominal pain, nausea, vomiting and diarrhoea. On examination he is febrile, appears dehydrated and is jaundiced. Laboratory investigation shows normal white blood cell count and markedly elevated liver enzymes. Of the following viruses, which one is the **MOST LIKELY** pathogen responsible for the disease?

   A. Hepatitis A
   B. Hepatitis B
   C. Hepatitis C
   D. Hepatitis D
   E. Hepatitis E

   (Format: Scenario-based with positive response)

Psychiatry

1. A 40-year-old accountant, who has been drinking for 20 years, has gradually increased his intake over the past year to a bottle of wine a day due to stress from work. His recent blood test suggests a deranged liver function. His family physician has advised him to cut down or quit alcohol, but he is not convinced. He thinks that drinking a bottle of wine a day is a rather common practice, and he is not bothered about the minor abnormality of liver function either.

   Which stage is he at, according to Prochaska & DiClemente's "stages of change" model?

   A. Action
   B. Contemplation
   C. Maintenance
   D. Pre-contemplation
   E. Preparation

   (Format: Scenario-based with positive response)

2. Which of the following brain areas is the **MOST LIKELY** to be involved in the "alien hand syndrome"?

   A. Dorsolateral prefrontal cortex
   B. Fusiform gyrus
   C. Insula
   D. Precuneus
   E. Supplementary motor area

   (Format: Non-scenario-based with positive response)

3. Evaluation of which of the following would be the **LEAST HELPFUL** in estimating the prognosis for schizophrenia:

   A. Financial status of the patient
   B. History of hospitalisations
   C. Occupational history
   D. Premorbid level of social functioning
   E. Presence of negative symptoms

   (Format: Non-scenario-based with negative response)

4. A 20-year-old waitress had a quarrel with her boyfriend during which she took an overdose of about 25 tablets of paracetamol. She was taken to the Accident and Emergency Department 6 hours later.

   As the attending medical officer, your immediate treatment is to:

   A. Consult a psychiatrist to make a psychiatric diagnosis.
   B. Do a chest X-ray.
   C. Examine the patient physically and consult internal medicine doctor for admission.
   D. See relatives for more personal history.
   E. Start her on antidepressant medication.

   (Format: Scenario-based with positive response)

5. Systematic desensitisation is a treatment technique that attempts to relieve anxiety by

   A. Counter-conditioning.
   B. Deep muscle relaxation.
   C. Use of gradual exposure.
   D. Use of imagery.
   E. All of the above.

   (Format: Non-scenario-based with positive response)

6. A 30-year-old ex-heroin user has stopped injecting heroin for one year. However, whenever he saw people hold a needle or walk through the building where he used to obtain his heroin, he got a sense of craving for heroin.

   Which of the following is the main neurotransmitter involved in this process?

   A. Acetylcholine
   B. Anadamide
   C. Dopamine
   D. Histamine
   E. Serotonin

   (Format: Scenario-based with positive response)

Surgery

1. A 32-year-old lady presents to surgical clinic concerned about an isolated dark-brown coloured lesion on her leg, which has recently become itchy and begun to bleed. She does not have any family history of skin cancers. On examination, there is a dark-brown coloured, irregular-shaped lesion of 7 mm on the medial aspect of her leg. There is no associated regional lymphadenopathy.

   The **MOST APPROPRIATE** next step of management is:

   A. Chest X-ray
   B. Excisional biopsy
   C. Fine-needle aspiration biopsy
   D. Observation
   E. Sentinel lymph node biopsy

   (Format: Scenario-based with positive response)

2. An 80-year-old lady of 30 kg presents with features of small bowel obstruction. She does not have a past history of surgery. Physical examination does not show any scar or mass over the abdomen or the groin. She complains of pain on moving her right hip. Erect abdominal X-ray shows small bowel dilatation with fluid levels and no large bowel shadow is seen. There is no other abnormal gas shadow in the abdominal X-ray.

   What is the **MOST LIKELY** diagnosis?

   A. Adhesive small bowel obstruction
   B. Caecal volvulus
   C. Carcinoma of the sigmoid colon
   D. Gallstone ileus
   E. Obturator hernia

   (Format: Scenario-based with positive response)

3. A 70-year-old man who was previously healthy has a transurethral resection of the prostate under spinal anaesthesia. In the recovery room, he is noted to be disorientated with deteriorating mental alertness and hypotension. Drainage from the urinary bladder is free flowing and pinkish in colour.

   What is the **MOST LIKELY** cause of his condition?

   A. Hypoglycaemia
   B. Hyponatraemia
   C. Inadequate analgesia
   D. Normal anaesthetic recovery
   E. Post-operative haemorrhage

   (Format: Scenario-based with positive response)

4. A 63-year-old woman presents with a history of amaurosis fugax. There were 4-5 episodes in the past 6 weeks. Examination reveals a left-sided carotid bruit.

   The **MOST APPROPRIATE** management would be:

   A. Carotid angiography.
   B. Carotid doppler ultrasound (duplex).
   C. Computed tomography scan of brain.
   D. Magnetic resonance angiography.
   E. Proceed to carotid endarterectomy.

   (Format: Scenario-based with positive response)

5. A 19-year-old female university student presents to the Accident and Emergency Department with a 2-day history of moderate peri-umbilical pain for two days. The pain seems to have shifted to the right lower quadrant and it is becoming more and more severe and constant. In which part of the peritoneal cavity would the infective fluid from the perforated appendix collect if this patient is sitting up all the time?

   A. Pouch of Douglas
   B. Pouch of Morison
   C. Recto-vesical pouch
   D. Right sub-phrenic space
   E. Vesico-uterine space

   (Format: Scenario-based with positive response)

6. A patient who suffers from acute anal fissure is likely to have the following features **EXCEPT**:

   A. Anal pain.
   B. Constipation.
   C. Intolerance to digital rectal examination.
   D. Prolapsing mass from the anus.
   E. Rectal bleeding.

   (Format: Non-scenario-based with negative response)

Orthopaedic Surgery

1. A 65-year-old retired housewife slips and falls in the bathroom. A radiograph of the wrist is shown.

Which of the following is the appropriate means of management?

A. A cuff and collar and elevation
B. A long arm cast
C. A short arm cast
D. A wrist brace
E. Tubinet Compression Bandage

(Format: Scenario-based with positive response)

2. The presence of which of the following features would **MOST LIKELY** indicate a diagnosis of gout?

A. An elevated serum uric acid level
B. Arthritis involving of the elbow joint
C. Calcium pyrophosphate crystal deposition in the joints
D. Easily seen crystals under simple light microscopy of joint fluids
E. Tophi in the pinna of the ear

(Format: Non-scenario-based with positive response)

3. A 50-year-old female suffers from bilateral steroid-induced avascular necrosis of the femoral heads. She complains of a recent increase in left hip pain over the past 6 months.

   Which of the following X-ray features is **NOT COMPATIBLE** with the history?

   A. Collapse of femoral head
   B. Fracture neck of femur
   C. Narrowing of joint space
   D. Osteopenia
   E. Osteophyte formation

   (Format: Scenario-based with negative response)

4. A 55-year-old woman complains of numbness in both hands, which often wakes her up at night. A diagnosis of carpal tunnel syndrome is suggested.

   Which of the following provides the earliest clinical evidence of this condition?

   A. Loss of fine touch, pressure and vibration
   B. Loss of pinprick and pain sensation
   C. Reduced sensitivity to heat and cold
   D. Weakness of grip and inability to hold chopsticks
   E. Wasting of the thenar muscles

   (Format: Scenario-based with positive response)

5. A 60-year-old retired engineer presents to your general practice clinic complaining of pain and swelling in the ankle joint. He had no history of trauma and woke up in the morning with pain swelling and redness around the ankle. He has had two such episodes in the past few months. He is currently afebrile and the ankle is warm and tender to touch. He is unable to walk. Urgent blood investigations reveal the following:

Hb	12.8 g/dL
RBC	4.8 x 1012 /L
WBC	9.0 x 109 /L
Creatinine	65 µmol/L (Normal 45-90 µmol/L)
Urate	290 µmol/L (Normal Range 143-339 µmol/L)
Na	131 (125 -140 mEq/L)
K	4.8 (3.5 -5.0 mEq/L)

   Which amongst the following measures would be **MOST APPROPRIATE** plan of management?

   A. Administration of oral colchicine
   B. Aspiration of the joint for gram stain, microscopy and culture
   C. Conservative treatment with elevation and ice
   D. Prescribe ankle immobilizer/brace
   E. Prescribe non-steroidal anti-inflammatory drug (NSAID) treatment for a week and observe

   (Format: Scenario-based with positive response)

6. Which of the following statements regarding ankylosing spondylitis is **FALSE**?

   A. Chest expansion is often markedly reduced.
   B. HLA-B27 is usually positive.
   C. It is a degenerative disease.
   D. Male is affected more frequently than female.
   E. Sacroiliac joints are often involved.

   (Format: Non-scenario-based with negative response)

Obstetrics & Gynaecology

1. External cephalic version is performed for breech presentation on a 28-year-old primigravida at 37 weeks' gestation. She is rhesus D negative without rhesus antibody. Her husband's rhesus status is unknown. When should anti-D immunoglobulin be given?

   A. Only if large amount of fetal red blood cells are identified by Kleihauer test on maternal blood
   B. Only if the maternal rhesus antibody is present
   C. Only prophylactically after delivery
   D. Prophylactically after the external cephalic version
   E. Under no circumstances

   (Format: Scenario-based with positive response)

2. A mother, who has dichorionic diamniotic twin pregnancy, is diagnosed with an absence of fetal heart pulsation in one twin on ultrasound scan examination at 30 weeks' gestation. She is asymptomatic and her vital signs are normal.

   Which of the following management options is **MOST APPROPRIATE**?

   A. Daily cardiotocogram and doppler velocimetry
   B. Emergency Caesarean section after a course of antenatal corticosteroids
   C. Hysterotomy to remove the dead twin
   D. Induction of labour at 34 weeks of gestation
   E. Monitor the fetal growth by ultrasound and plan for delivery at term

   (Format: Scenario-based with positive response)

3. Which of the following parameters is useful for assessing the gestational age at 18 weeks?

   A. Amniotic fluid index
   B. Biparietal diameter
   C. Crown-rump length
   D. Fetal heart rate
   E. Gestational sac volume

   (Format: Non-scenario-based with positive response)

4. A 35-year-old woman presented with secondary amenorrhoea. Which of the following serum hormone results will **BEST** indicate the cause of the amenorrhoea as premature ovarian failure?

   A. A low serum estradiol
   B. An elevated serum estradiol
   C. An elevated serum FSH
   D. An elevated serum FSH/LH ratio
   E. An elevated serum LH

   (Format: Scenario-based with positive response)

5. During a pre-marital checkup, a woman is found to have alpha-thalassaemia trait while her partner has beta-thalassaemia trait.

   Which of the following counselling advice is **CORRECT**?

   A. Their children may have a small chance of having alpha- thalassaemia major.
   B. Their children may have a small chance of having beta-thalassaemia major.
   C. Their children will have 50% chance of having alpha-thalassaemia trait.
   D. Their children will have 75% chance of having beta-thalassaemia trait.
   E. Their children would have no chance of having thalassaemia.

   (Format: Scenario-based with positive response)

6. Madam Wong was at 9 weeks of pregnancy. She suffered from left calf pain and swelling for 1 week. Doppler ultrasound study revealed left femoral deep vein thrombosis.

   Which of the following management is **CORRECT**?

   A. A direct oral anticoagulant should be started.
   B. Low dose aspirin should be started.
   C. Low molecular weight heparin should be started.
   D. Termination of pregnancy should be performed.
   E. Warfarin should be started.

   (Format: Scenario-based with positive response)

Medical Ethics/ Community Medicine

1. Stereoscopic digital mammography is used to screen women for breast cancer. The test has a sensitivity of 90% and a specificity of 80%, and the prevalence of disease at screening in the population of interest is 5 %.

   If 100 women are screened, how many would be false positive?

   A. 1
   B. 5
   C. 9
   D. 19
   E. 20

   (Format: Scenario-based with positive response)

2. Which of the following statements about occupational health in Hong Kong is **TRUE**?

   A. A doctor who diagnoses a notifiable occupational disease is required by law to report to the Government.
   B. Pre-employment medical examination is required by law for all occupations.
   C. The Government's role in occupational health is confined to legislation and enforcement.
   D. The laws in occupational safety and health cover only workers in factories.
   E. The wearing of protective equipment is the best approach to prevent occupational diseases.

   (Format: Non-scenario-based with positive response)

3. We often use the age-standardised mortality (=death) rate to compare the mortality experience in different countries. This is because:

   A. Different countries have different age structures.
   B. Mortality rates vary in different age groups.
   C. Using a standard age structure in a hypothetical or reference population can eliminate the differences in age structure between countries when comparing their mortality rates.
   D. All the above are true.
   E. Only (A) and (B) are true. (C) is not true.

   (Format: Non-scenario-based with positive response)

4. In a study on drug abuse among secondary school students, 40 schools were selected by the computer from a list of all schools in Hong Kong, and two classes were selected from each school by drawing lots. All students in the selected classes were included.
   Which of the following **BEST** describes the sampling method?

   A. Convenient sampling
   B. Multi-stage sampling
   C. Simple random sampling
   D. Stratified sampling
   E. Systematic sampling

   (Format: Scenario-based with positive response)

5. Risk is a widely used concept in health care. Which of the following definition **BEST** describes the concept of risk?

   A. Likelihood of uncontrollable outcomes
   B. Perception of harm from the future
   C. Probability of negative consequences
   D. The difference in harm between exposed and unexposed individuals
   E. The number of people in a population exposed to a hazard

   (Format: Non-scenario-based with positive response)

6. The 95% confidence interval for the mean systolic blood pressure (SBP) calculated from a random sample of 100 diabetic men was 142.7 to 150.1 mmHg.

   Which one of the following is **CORRECT**?

   A. If the sample size of diabetic men was 110 instead of 100, the 95% confidence interval will be wider than 142.7 to 150.1 mmHg.
   B. 95% of the 100 diabetic men have their SBP between 142.7 and 150.1 mmHg.
   C. The sample size of diabetic men will not affect the calculated 95% confidence interval of 142.7 to 150.1 mmHg.
   D. The true sample mean SBP of these 100 diabetic men lies between 142.7 and 150.1 mmHg.
   E. There is a 95% chance that the true mean SBP of diabetic men lies between 142.7 and 150.1 mmHg.

   (Format: Scenario-based with positive response)