



Mock Exam

Basic Sciences

24 Questions

Time Limit: 1 hr

Question 1

A 27-year-old overweight female with known tuberculosis presents with ulcerating nodules on the back of her legs. Which of the following is the most likely diagnosis?

- A Erythema induratum
- B Erythema marginatum
- C Erythema nodosum
- D Lupus pernio
- E Lupus vulgaris

Question 2

Which of the following concerning pityriasis rosea is correct?

- A It is characterised by flat scaly patches
- B It is due to a fungal infection
- C It is frequently associated with oro-genital itching
- D May be preceded by intense itching
- E Tends to recur after apparent cure

Question 3

A 59-year-old patient of South Asian origin presents with a widespread blistering rash. Which of the following features would be consistent with a diagnosis of pemphigus?

- A Acanthosis
- B Blisters arising within the subepidermal area
- C IgA antibodies
- D Oral involvement
- E Treatment with methotrexate

Question 4

Causes of dilated pupils include which of the following?

- A Argyll Robertson pupil
- B Ethylene glycol poisoning
- C Myotonic dystrophy
- D Organophosphate poisoning
- E Pontine haemorrhage

Question 5

A 30-year-old female presents to the eye clinic with an acute history of pain and blurring in the right eye. Examination reveals a visual acuity of 6/36 in the right eye but 6/6 in the left eye, a central scotoma in the right eye, with a right swollen optic disc. What is the most likely diagnosis?

- A Cavernous sinus thrombosis
- B Compression of the optic nerve
- C Glaucoma
- D Optic neuritis
- E Retinal vein occlusion

Question 6

A 23-year-old man with an otherwise insignificant past medical history, presented with a sharp painful left eye over the last one day. Ocular examination revealed a left mildly red eye with mild reduction of visual acuity. There were no ocular discharges to note. What is the most likely diagnosis?

- A Episcleritis
- B Herpetic keratitis
- C Iritis
- D Posterior uveitis
- E Scleritis

Question 7

A 17-year-old girl presents with bilateral cervical lymphadenopathy. Her lymph node biopsy reveals a nodular sclerosing Hodgkin's disease. Which one of the following features indicates a poorer prognosis?

- A Fatigue
- B Mediastinal mass of 3 cm
- C Night sweats
- D Pruritus
- E Recent Epstein-Barr virus infection

Question 8

A 18-year-old boy presents with a haemarthrosis that developed in his right knee following an injury.

His investigations show:

Platelet count $270 \times 10^9/L$ (150-400)

Prothrombin time 14s (11.5-15.5)

Activated partial thromboplastin time 80 s (30-40)

Factor VIII 110 IU/dl (50-150)

Which of the following is the most likely diagnosis?

- A Antiphospholipid syndrome
- B Antithrombin III deficiency
- C Haemophilia A
- D Haemophilia B
- E von Willebrand's disease

Question 9

Which one of the following conditions is associated with thymoma?

- A Acute lymphocytic leukaemia
- B Acute myeloid leukaemia
- C Myelofibrosis
- D Pure red cell aplasia
- E Thrombocythaemia

Question 10

Which of the following is true about the manufacture of pooled plasma derivatives?

- A Pooled plasma is often sourced from within the UK
- B The end product is a freeze-dried product
- C The process does not involve any viral inactivation steps
- D These are usually manufactured from 10 donors at a time
- E These products have a short half life, typically days

Question 11

Which of the following drugs would be most likely to cause gynaecomastia?

- A Bisoprolol
- B Lansoprazole
- C Rabeprazole sodium
- D Ranitidine
- E Spironolactone

Question 12

Which of the following is likely to increase whilst on bendroflumethiazide therapy?

- A Magnesium
- B Potassium
- C Sodium
- D Uric acid
- E White cell count

Question 13

Which of the following medications can cause hypomagnesaemia?

- A Aminophylline
- B Amitriptyline
- C Cisplatin
- D Co-trimoxazole
- E Lithium

Question 14

A patient is suspected of having taken a substance with anticholinesterase effects. Which of the following combinations of signs, if present, would be the most likely to confirm this effect?

- A Bradycardia and miosis
- B Bradycardia and mydriasis
- C Bradycardia and urinary retention
- D Tachycardia and diarrhoea
- E Tachycardia and lacrimation

Question 15

Which of the following is a characteristic feature of transient global amnesia?

- A Abnormal behaviour
- B Apraxia
- C Confabulation
- D Loss of personal identity
- E Normal perception

Question 16

Which of the following statements is correct with regard to puerperal psychosis?

- A It often takes the form of schizophrenia
- B Recurrence of puerperal psychosis in subsequent pregnancies is the rule
- C The onset is usually insidious
- D The prognosis is usually good
- E Usually begins after the second week of the puerperium

Question 17

A study of a new drug for prostate cancer is reported in a journal. The authors state that with the new agent the five year mortality rate was 60%. Without treatment the five year mortality rate was 80%. Which of the following represents the Absolute Risk Reduction using this treatment?

- A 10%
- B 20%
- C 25%
- D 33%
- E 40%

Question 18

In a trial of statin therapy in the secondary prevention of ischaemic heart disease, therapy is shown to reduce cardiovascular mortality from 12% to 8% over the five years duration of the study. In comparison with standard therapy, what is the number of patients that needs to be treated to prevent one death over five years?

- A 5
- B 10
- C 20
- D 25
- E 50

Question 19

In a study of the utility of serum procalcitonin level for early diagnosis of bacteraemia, 100 consecutive febrile patients admitted to hospital were tested for serum procalcitonin and culture of bacteria. It was reported that serum procalcitonin level above 0.5 microgram/L had a sensitivity of 85%, specificity of 90%, positive predictive value of 80% and negative predictive value of 95%. Which of the following statements is true?

- A The likelihood ratio of a positive test will increase if the prevalence of bacteraemia increases
- B The negative predictive value will increase if the prevalence of bacteraemia increases
- C The positive predictive value will increase if the prevalence of bacteraemia increases
- D The sensitivity will increase if the prevalence of bacteraemia increases
- E The specificity will increase if the prevalence of bacteraemia increases

Question 20

The Polymerase Chain Reaction (PCR) is used to amplify small amounts of DNA for further analysis. To do this, the DNA double helix must first be split into two strands. How is this achieved?

- A Alkali solution
- B Centrifugation
- C DNA polymerase
- D Heating to nearly 100°C
- E Viral reverse transcriptase

Question 21

A plasmid is best described as which of the following?

- A A recombinant section of DNA
- B A small viral particle
- C Bacterial DNA separate from the chromosome
- D Consisting of multiple copies of a single gene
- E Having multiple origins of replication

Question 22

The level of cellular telomerase activity will affect which of the following?

- A Cell death
- B Cell survival
- C RNA synthesis
- D The number of cell divisions a cell is capable of undergoing
- E The rate of cell growth

Question 23

Autosomal recessive conditions include which of the following?

- A Huntington's chorea
- B Manic depression
- C Turner's syndrome
- D Vitamin D resistant rickets
- E Wilson's disease

Question 24

In X linked recessive inheritance, which of the following is true?

- A Daughters of affected males will all be carriers
- B Each daughter of a female carrier has a 1:4 risk of being a carrier
- C Each son of a female carrier has a 1:4 risk of being affected
- D The family history is often positive since new mutations are rare
- E The male to female ratio is 2:1