

BMSH4302 Introduction to Chronic Disease

Mock Paper 1: Marking Guide

Exam structure

Section A: 20 MCQs at 1 mark each = 20 marks. Answer ALL.

Section B: 5 short answer questions at 15 marks each. Answer TWO. = 30 marks.

Total: 50 marks. Final percentage = total mark x 2.

Duration: 60 minutes.

Section A: MCQ Answer Key

Each question is worth 1 mark. Total: 20 marks.

Q1. Answer: a

Chronic disease is defined by its long duration (typically more than three months) and the absence of a curative treatment in most cases. Acute conditions resolve quickly. Chronic disease is not exclusive to older adults, and many cannot be reversed even with treatment.

Q2. Answer: c

Incidence measures NEW cases over time. Prevalence measures the total cases at a point in time (existing plus new). Mortality measures deaths. Risk is a separate concept relating to probability.

Q3. Answer: c

Family history reflects inherited genetic and shared environmental factors that an individual cannot change. Smoking, physical inactivity and diet are all behaviours that can be modified.

Q4. Answer: a

Pathology describes the structural and functional changes in tissues and cells caused by disease. Aetiology refers to causes. Treatment and epidemiology are separate concepts.

Q5. Answer: c

Coronary heart disease is driven by atherosclerosis, the gradual narrowing of coronary arteries by fatty plaques. Myocarditis (viral inflammation), autoimmune cardiac disease, and arrhythmia are different conditions.

Q6. Answer: c

Depression is a clinically defined disorder characterised by persistent low mood and anhedonia for at least two weeks, with significant functional impact. Brief sadness after a stressor is not the same. Depression affects all genders, although prevalence differs.

Q7. Answer: b

Asthma is obstructive: airflow is limited because airways are narrowed. The narrowing is reversible, often with a bronchodilator. This contrasts with COPD, where the obstruction is largely irreversible.

Q8. Answer: a

Tobacco smoking is by far the most important modifiable cause of COPD. Cold weather can trigger exacerbations but does not cause the underlying disease. Salt intake is not relevant to COPD. Vaccination prevents acute infections but does not cause or prevent COPD itself.

Q9. Answer: b

Type 1 diabetes is autoimmune: the immune system destroys pancreatic beta cells, leading to absolute insulin deficiency. Insulin resistance is the mechanism in Type 2. Hyperinsulinaemia and hepatic glucose dysregulation are different processes.

Q10. Answer: d

Graves' disease is an autoimmune condition where antibodies stimulate the thyroid to overproduce hormone, causing hyperthyroidism. Hashimoto's thyroiditis causes hypothyroidism. Autoimmune thyroid disease does not cause cancer.

Q11. Answer: d

Insulin resistance describes reduced cellular response to insulin, requiring higher levels to achieve the same effect. It is the central feature of Type 2 diabetes and precedes its development.

Q12. Answer: b

Osteoarthritis is degenerative, not autoimmune (rheumatoid arthritis is autoimmune). It is not infective (septic arthritis is). It can affect many joints, not only the spine.

Q13. Answer: d

A fragility fracture is one caused by trauma that would not normally break a healthy bone, indicating reduced bone strength. The classic definition is a fall from standing height or less. Age alone does not define it.

Q14. Answer: b

Sarcopenia is the progressive, age-related loss of skeletal muscle mass, strength and function. Cartilage loss is osteoarthritis; bone loss is osteoporosis; nerve damage is neuropathy.

Q15. Answer: b

Multiple sclerosis is most often first diagnosed between approximately 20 and 40 years of age, and is two to three times more common in women than in men. The pattern of onset in young adulthood has important implications for education, employment and family planning.

Q16. Answer: c

Parkinson's disease is characterised by progressive degeneration of dopaminergic neurons in the substantia nigra. The other answers describe Type 1 diabetes, multiple sclerosis and osteoporosis.

Q17. Answer: b

Comorbidity (also called multi-morbidity when two or more conditions are present) is a defining feature of chronic disease and significantly affects quality of life and treatment complexity.

Q18. Answer: c

Adipose tissue is recognised as an active endocrine organ. It releases adipokines such as leptin and adiponectin and inflammatory mediators, which is why excess adiposity drives chronic disease risk across multiple body systems.

Q19. Answer: d

Appropriately tailored physical activity is part of management for almost every chronic condition covered in this module. It improves cardiovascular fitness, glycaemic control, bone and muscle health, mood and quality of life. It is not a last resort.

Q20. Answer: d

IARC classifies processed meat (such as ham, bacon, sausages) as Group 1 carcinogen, with sufficient evidence linking it to colorectal cancer. Unprocessed red meat is classified separately as Group 2A (probable).

End of marking guide.