

7.1 Innate immunity

Name: _____ Class: _____ Date: _____ **Total: 23 marks**

KEY WORDS neutrophil

Objective

Map innate cells to timelines and read the neutrophil count.

1 Key knowledge and worked examples

■ **The map**

Barriers → complement → neutrophils (30–60 min) → macrophages (~24 h) → NK → dendritic cells ✓. PRRs: fixed, generic, no memory.

■ **Worked example: the counts**

Neutrophils 50–70 % of white cells; marrow reserve $\sim 10^{11}$ cells; febrile neutropenia $< 0.5 \times 10^9/\text{L}$ is an emergency ✓.

2 Practice

2.1 Which cell carries innate news to the adaptive tier? [3]

2.2 Give the neutrophil arrival and peak times. [3]

2.3 Why do NK cells belong to innate immunity? [3]

3 Exam-style questions

3.1 A patient on chemotherapy has a temperature of 38.6 °C with neutrophils $0.3 \times 10^9/\text{L}$ (fictional).

Explain why this is an emergency within hours (first tier gone, adaptive too slow). State the immediate management principle. Explain why the usual localising signs may be BLUNTED. [7]

3.2 A splenectomised patient (fictional) asks about infection risk.

Explain which arms of innate-style clearance the spleen supported (opsonised-cell filtering). Predict the organisms (encapsulated). State the standard prophylaxis and its rationale. [7]