

FExNet 2026

Collated SAQs: Dermatology and Infectious Diseases

QUESTION BOOKLET

22 short-answer questions covering the ACEM Fellowship dermatology and infectious diseases curriculum — skin and soft tissue infections (cellulitis, erysipelas, necrotising fasciitis, Fournier's gangrene, diabetic foot, hand infections); severe drug eruptions (SJS/TEN, DRESS); rashes (eczema herpeticum, Kawasaki disease); respiratory infections (CAP, PCP); HIV management (PEP, AIDS-defining illnesses); returned traveller fever (malaria); febrile neutropenia; urinary sepsis; toxic shock; tetanus; infective endocarditis; tuberculosis; severe sepsis. Stems are written in detailed prose with abbreviations spelt out in full.

22 questions • 234 marks

ACEM-aligned format. Sub-questions labelled a) b) c). Mark allocations indicative; references cited in the Answer Booklet. Question and answer indexes are clickable.

Question Index

Click any entry to jump to its question. Marks shown right.

Q1. Cellulitis and Its Mimics	11	Q12. HIV Post-Exposure Prophylaxis (Sexual Exposure)	11
Q2. Necrotising Fasciitis	13	Q13. AIDS-Defining Illnesses	9
Q3. Fournier's Gangrene	11	Q14. Returned Traveller — Malaria	12
Q4. Stevens-Johnson Syndrome / Toxic Epidermal Necrolysis	12	Q15. Febrile Neutropenia	11
Q5. Eczema Herpeticum	9	Q16. Acute Pyelonephritis with Urosepsis	10
Q6. Kawasaki Disease	11	Q17. Toxic Shock Syndrome	10
Q7. Erysipelas — Facial Cellulitis	9	Q18. Tetanus and Tetanus-Prone Wounds	9
Q8. Diabetic Foot Infection	11	Q19. Infective Endocarditis	11
Q9. Hand Infection — Flexor Tenosynovitis	10	Q20. Active Pulmonary Tuberculosis	10
Q10. Community-Acquired Pneumonia	12	Q21. DRESS Syndrome (Drug Reaction with Eosinophilia and Systemic Symptoms)	10
Q11. Pneumocystis Pneumonia in HIV	11	Q22. Severe Sepsis — Surviving Sepsis Bundle	11

Question 1 | Cellulitis and Its Mimics (11 marks)

A 55-year-old woman presents to your emergency department with a 3-day history of progressive redness, warmth, swelling, and tenderness of her right lower leg. She has a background of chronic venous insufficiency and was discharged from hospital 1 week ago after coronary artery bypass grafting (saphenous vein harvest from the right leg). Her vital signs: heart rate 95 beats per minute, blood pressure 130/80 millimetres of mercury, respiratory rate 18 breaths per minute, temperature 37.6 degrees Celsius.

- a)** List 5 non-infectious conditions that mimic unilateral leg cellulitis AND state a differentiating feature for each. (5 marks)

- b)** List 3 oral antibiotic options for cellulitis covering *Streptococcus pyogenes* AND *Staphylococcus aureus* (MSSA). (3 marks)

- c)** List 3 indications for IV antibiotics over oral. (3 marks)

Question 2 | Necrotising Fasciitis (13 marks)

A 65-year-old man with type 2 diabetes mellitus presents to your emergency department with severe pain in his left lower leg following a minor garden injury 3 days ago. The pain is disproportionate to the visible skin findings. On examination, the leg has dusky, tense skin with a small area of central erythema spreading rapidly. There are bullae and crepitus on palpation. He is haemodynamically unstable: heart rate 130 beats per minute, blood pressure 80/50 millimetres of mercury, respiratory rate 28 breaths per minute, peripheral oxygen saturation 96 percent on room air, temperature 38.8 degrees Celsius. White cell count 18, C-reactive protein 280, glucose 18, lactate 5, sodium 132, creatinine 180.

a) List 6 features (history / examination / investigation) supporting necrotising fasciitis. (6 marks)

b) State 4 immediate management priorities. (4 marks)

c) List 3 microbial causes / classifications of necrotising fasciitis. (3 marks)

Question 3 | Fournier's Gangrene (11 marks)

A 48-year-old man (weight 100 kilograms) with type 2 diabetes mellitus presents to your emergency department with severe perineal pain and rapidly spreading erythema of the scrotum and perineum for 24 hours. He has had several small skin tags and a minor anal fistula for years. On examination, the scrotum and perineum are dusky, with crepitus on palpation and an unpleasant odour. The skin is necrotic over a 5-centimetre area on the right scrotum. Vital signs: Glasgow Coma Score 14, heart rate 120 beats per minute, blood pressure 90/45 millimetres of mercury, peripheral oxygen saturation 99 percent on room air, temperature 39.5 degrees Celsius.

a) List 3 risk factors for Fournier's gangrene. (3 marks)

b) State 5 management priorities. (5 marks)

c) List 3 likely causative organisms. (3 marks)

Question 4 | Stevens-Johnson Syndrome / Toxic Epidermal Necrolysis (12 marks)

A 34-year-old man presents to your emergency department with a 3-day history of widespread blistering rash and mucositis. The rash started on his face and trunk and has rapidly spread. He started a course of trimethoprim-sulfamethoxazole for a urinary tract infection 1 week ago. On examination, he has confluent erythematous and purpuric macules with central blistering covering approximately 25 percent of his body surface area. There is severe oral mucositis with sloughing, conjunctival injection with purulent discharge, and genital erosions. The Nikolsky sign is positive.

a) Define Stevens-Johnson syndrome and toxic epidermal necrolysis AND state the classification by body surface area. (3 marks)

b) List 4 likely causes (medications and infections). (4 marks)

c) State 5 management priorities. (5 marks)

Question 5 | Eczema Herpeticum (9 marks)

An 18-month-old boy is brought to your emergency department by his parents with a worsening rash on his face for 3 days. He has a background history of severe atopic dermatitis (eczema). His vital signs: heart rate 130 beats per minute, central capillary refill less than 2 seconds, temperature 38.8 degrees Celsius. He is fully immunised and atopic. The face has multiple discrete and clustered vesicles overlying erythematous skin, with crusting and umbilicated lesions. Some lesions are punched-out and erosive.

a) List 3 features describing the rash that support the diagnosis. (3 marks)

b) List 3 differential diagnoses. (3 marks)

c) State 3 management priorities. (3 marks)

Question 6 | Kawasaki Disease (11 marks)

A 2-year-old girl is brought to your emergency department by her parents with a rash and fever. She has been unwell with daily fever above 39 degrees Celsius for 5 days. She had been seen by her general practitioner 2 days ago and started on oral antibiotics for presumed viral illness. Examination today: temperature 39.5 degrees Celsius, heart rate 160 beats per minute, respiratory rate 32 breaths per minute, peripheral oxygen saturation 98 percent on room air. She has a polymorphous rash on the trunk, conjunctival injection without exudate, strawberry tongue, fissured lips, palmar erythema with peeling, and right cervical lymphadenopathy (1.6 centimetre node).

a) List the 5 principal diagnostic criteria for Kawasaki disease. (5 marks)

b) Name the principal serious complication AND state 2 investigations to monitor for it. (3 marks)

c) State 3 management priorities. (3 marks)

Question 7 | Erysipelas — Facial Cellulitis (9 marks)

A 70-year-old man presents to your emergency department with a 24-hour history of a rapidly expanding red rash on his right cheek. He has had a recent dental abscess. On examination, there is a sharply demarcated, raised, intensely red, hot, tender area on the right cheek with a clear advancing border. He is febrile (38.6 degrees Celsius), heart rate 100 beats per minute. There is significant peri-auricular swelling but no deep neck involvement (no trismus, no airway compromise).

a) List 3 features distinguishing erysipelas from cellulitis. (3 marks)

b) State the empirical antibiotic regimen AND duration. (3 marks)

c) List 3 specific concerns regarding facial erysipelas. (3 marks)

Question 8 | Diabetic Foot Infection (11 marks)

A 65-year-old man with type 2 diabetes mellitus (HbA1c 9.5 percent), peripheral vascular disease, and chronic kidney disease (estimated glomerular filtration rate 35 mL/min) presents to your emergency department with a 1-week history of an ulcer on the plantar surface of his right great toe. He has been mobilising on it. On examination, the ulcer is 2 by 1 centimetres, with surrounding erythema and warmth extending 5 centimetres proximally. There is malodorous discharge. The ulcer probes to bone with a metal probe. Vital signs: heart rate 105, blood pressure 130/80, temperature 37.8 degrees Celsius.

- a)** List 4 features supporting moderate-to-severe diabetic foot infection (per IDSA / IWGDF classification). (4 marks)

- b)** State 4 management priorities. (4 marks)

- c)** List 3 likely causative organisms. (3 marks)

Question 9 | Hand Infection — Flexor Tenosynovitis (10 marks)

A 14-year-old boy with type 1 diabetes mellitus presents to your emergency department with a painful right hand. He sustained a puncture injury to the flexor surface of his right index finger 2 days ago while climbing a tree. On examination, his right index finger is held in slight flexion, with diffuse swelling along the volar aspect of the finger and into the palm. Passive extension of the finger causes severe pain. Vital signs: heart rate 105, blood pressure 110/70, temperature 38.5 degrees Celsius.

a) Describe Kanavel's signs of flexor tenosynovitis (4 signs). (4 marks)

b) List 3 investigations with rationale. (3 marks)

c) State 3 management priorities. (3 marks)

Question 10 | Community-Acquired Pneumonia (12 marks)

A 65-year-old woman presents to your emergency department with a 3-day history of productive cough, pleuritic chest pain, and progressive dyspnoea. Her past medical history includes chronic obstructive pulmonary disease (treated with tiotropium) and ischaemic heart disease. On arrival her vital signs are: respiratory rate 28 breaths per minute, peripheral oxygen saturation 89 percent on room air rising to 93 percent on 4 litres oxygen, heart rate 110 beats per minute, blood pressure 100/55 millimetres of mercury, temperature 38.8 degrees Celsius, blood glucose 5.6 millimoles per litre. Her chest radiograph shows a right lower lobe consolidation. White cell count 22, urea 12 mmol/L.

a) Calculate the CURB-65 score for this patient (state each component). (5 marks)

b) State the empirical antibiotic regimen for this severity of community-acquired pneumonia AND state 4 most likely pathogens. (4 marks)

c) List 3 management priorities beyond antibiotics. (3 marks)

Question 11 | Pneumocystis Pneumonia in HIV (11 marks)

A 45-year-old man known to be HIV-positive (last CD4 count 60 cells/mm³ a year ago, on anti-retroviral therapy with poor compliance) presents to your emergency department with a 2-week history of progressive shortness of breath, dry non-productive cough, and 8-kilogram weight loss. His vital signs: heart rate 105 beats per minute, blood pressure 110/70 millimetres of mercury, respiratory rate 30 breaths per minute, peripheral oxygen saturation 92 percent on room air falling to 86 percent on minimal exertion, temperature 38.6 degrees Celsius. Chest examination: bilateral fine crackles. Chest radiograph shows bilateral interstitial infiltrates with peri-hilar predominance.

a) List 4 differential diagnoses to consider in this patient. (4 marks)

b) List 4 specific investigations with rationale. (4 marks)

c) State 3 immediate management priorities for PCP with hypoxia. (3 marks)

Question 12 | HIV Post-Exposure Prophylaxis (Sexual Exposure) (11 marks)

A 22-year-old HIV-negative man presents to your urban emergency department at 2 am with a history of unprotected receptive anal intercourse with an anonymous male partner the previous evening (approximately 8 hours ago). He is asymptomatic and requests post-exposure prophylaxis (PEP). His last HIV test was 6 months ago (negative).

a) List 4 factors influencing the decision to commence HIV PEP. (4 marks)

b) State 4 important components of discharge advice (PEP regimen). (4 marks)

c) List 3 other considerations / co-treatments. (3 marks)

Question 13 | AIDS-Defining Illnesses (9 marks)

A 45-year-old man with known HIV (last CD4 count 180 cells/mm³, on antiretroviral therapy) presents to your emergency department with shortness of breath. You are concerned he has an AIDS-defining illness.

a) State the 2 laboratory criteria for AIDS. (2 marks)

b) List 4 AIDS-defining illnesses. (4 marks)

c) List 3 specific pathogens with antibiotic treatment. (3 marks)

Question 14 | Returned Traveller — Malaria (12 marks)

A 35-year-old man presents to your emergency department with a 4-day history of fever, headache, and rigors. He returned from a 3-week trip to Papua New Guinea 2 weeks ago, where he spent time in rural areas and reports occasional missed doses of his malaria prophylaxis (doxycycline). He is otherwise well. On examination, his vital signs are: heart rate 110 beats per minute, blood pressure 100/60 millimetres of mercury, respiratory rate 22 breaths per minute, peripheral oxygen saturation 97 percent on room air, temperature 39.0 degrees Celsius. He has palpable splenomegaly. Bedside glucose 4.2 mmol/L.

a) List 4 differential diagnoses for fever in a returned traveller from PNG / SE Asia. (4 marks)

b) List 4 investigations for suspected malaria with rationale. (4 marks)

c) List 4 features of severe malaria AND state the empirical treatment. (4 marks)

Question 15 | Febrile Neutropenia (11 marks)

A 32-year-old woman undergoing chemotherapy for breast cancer (last cycle 8 days ago) presents to your emergency department with fever and malaise for the past 12 hours. She has had no specific localising symptoms. On arrival her vital signs are: heart rate 115 beats per minute, blood pressure 105/65 millimetres of mercury, respiratory rate 20 breaths per minute, peripheral oxygen saturation 98 percent on room air, temperature 38.5 degrees Celsius. Examination is unremarkable. Her full blood count: white cell count $1.5 \times 10^9/L$; absolute neutrophil count $0.4 \times 10^9/L$ (severe neutropenia).

a) Define febrile neutropenia AND state its significance. (3 marks)

b) State 5 management priorities including specific antibiotic regimen. (5 marks)

c) List 3 factors that would influence antibiotic choice. (3 marks)

Question 16 | Acute Pyelonephritis with Urosepsis (10 marks)

A 25-year-old man presents to your emergency department with a 2-day history of fever, dysuria, and right-sided back pain. He has no previous medical problems. On arrival his vital signs are: heart rate 125 beats per minute, blood pressure 90/60 millimetres of mercury, respiratory rate 24 breaths per minute, peripheral oxygen saturation 97 percent on room air, temperature 39.0 degrees Celsius. Examination shows right costovertebral angle tenderness.

a) List 3 likely causative organisms. (3 marks)

b) State 4 immediate management priorities (drug, dose, end-points). (4 marks)

c) List 3 indications for urological intervention. (3 marks)

Question 17 | Toxic Shock Syndrome (10 marks)

A 19-year-old woman presents to your emergency department with a 24-hour history of fever, vomiting, diarrhoea, and a diffuse erythematous rash. She uses tampons and her menstrual period started 3 days ago. On examination, she is obtunded (Glasgow Coma Score 12), with diffuse macular erythroderma sparing the palms and soles, but with strawberry tongue, conjunctival injection, and mucosal hyperaemia. Her vital signs: heart rate 145 beats per minute, blood pressure 70/40 millimetres of mercury, respiratory rate 32 breaths per minute, peripheral oxygen saturation 94 percent on room air, temperature 40.1 degrees Celsius.

- a)** List the diagnostic criteria for staphylococcal toxic shock syndrome (4 components). (4 marks)

- b)** State 4 immediate management priorities. (4 marks)

- c)** List 2 differences between staphylococcal and streptococcal TSS. (2 marks)

Question 18 | Tetanus and Tetanus-Prone Wounds (9 marks)

A 65-year-old man presents to your emergency department after cutting his right lower leg on a rusty piece of wire while gardening. He cleaned the wound with water from a garden hose and wrapped it in an old cloth. He was last vaccinated with diphtheria-tetanus 25 years ago. On examination, the wound is 5 centimetres long, deep, with surrounding contusion and dirt contamination.

a) List 5 features that make a wound 'tetanus-prone'. (5 marks)

b) State the indications for tetanus immunoglobulin (TIG) AND state the dose. (2 marks)

c) List 2 features of clinical tetanus. (2 marks)

Question 19 | Infective Endocarditis (11 marks)

A 42-year-old man with a history of intravenous drug use presents to your emergency department with a 2-week history of fever, fatigue, and night sweats, with new shortness of breath and haemoptysis over the past 3 days. On examination his vital signs: heart rate 110 beats per minute, blood pressure 110/70 millimetres of mercury, respiratory rate 24 breaths per minute, peripheral oxygen saturation 92 percent on room air, temperature 38.7 degrees Celsius. He has a loud (grade IV) systolic murmur best heard at the left lower sternal border. His chest radiograph shows multiple bilateral peripheral nodular opacities, several of which appear cavitating.

a) List 4 clinical features supporting infective endocarditis (peripheral signs). (4 marks)

b) State the modified Duke criteria categories (major and minor — list components of each). (4 marks)

c) State the empirical antibiotic regimen for this patient. (3 marks)

Question 20 | Active Pulmonary Tuberculosis (10 marks)

A 45-year-old man originally from Vietnam (in Australia for 5 years) presents to your emergency department with a 3-month history of progressive cough productive of blood-streaked sputum, weight loss (8 kilograms), drenching night sweats, and fevers. He has no other significant medical history. His vital signs: heart rate 95 beats per minute, blood pressure 120/75 millimetres of mercury, respiratory rate 22 breaths per minute, peripheral oxygen saturation 96 percent on room air, temperature 37.6 degrees Celsius. Chest examination reveals decreased breath sounds in the right upper zone with crepitations. Chest radiograph shows a right upper lobe cavitating lesion with surrounding consolidation.

a) List 4 epidemiological / clinical features supporting active tuberculosis. (4 marks)

b) List 4 investigations. (4 marks)

c) State the standard 4-drug TB treatment regimen with duration. (2 marks)

Question 21 | DRESS Syndrome (Drug Reaction with Eosinophilia and Systemic Symptoms) (10 marks)

A 50-year-old woman presents to your emergency department with a 5-day history of fever and a widespread pruritic morbilliform (measles-like) rash. She started carbamazepine 6 weeks ago for trigeminal neuralgia. On examination, she has widespread maculopapular eruption on the face, trunk, and limbs, with bilateral periorbital oedema, cervical lymphadenopathy, and mild hepatomegaly. Vital signs: heart rate 110, respiratory rate 22, peripheral oxygen saturation 96 percent on room air, temperature 39.0 degrees Celsius. Her bloods: white cell count 22 with prominent eosinophilia ($4.5 \times 10^9/L$), atypical lymphocytes on film; ALT 800; creatinine 220.

a) List 4 features supporting DRESS syndrome (RegiSCAR criteria). (4 marks)

b) List 3 culprit drug classes. (3 marks)

c) State 3 management priorities. (3 marks)

Question 22 | Severe Sepsis — Surviving Sepsis Bundle (11 marks)

A 72-year-old man presents to your emergency department with a 24-hour history of confusion, fever, and generalised weakness. He has a history of type 2 diabetes mellitus and a recent urinary tract infection treated with oral cephalexin. On arrival his vital signs: Glasgow Coma Score 13, heart rate 130 beats per minute, blood pressure 85/50 millimetres of mercury (mean arterial pressure 62), respiratory rate 28 breaths per minute, peripheral oxygen saturation 92 percent on room air, temperature 39.2 degrees Celsius. Bloods: white cell count 22, lactate 4.5, creatinine 280 (baseline 90), bilirubin 45, platelets 95, INR 1.7, glucose 18.

- a)** Apply the SOFA score concept — list 4 organ system derangements suggesting septic shock. (4 marks)

- b)** List the 4 components of the Surviving Sepsis Hour-1 Bundle. (4 marks)

- c)** List 3 ongoing management priorities (within first 6 hours). (3 marks)
