



OXFORD SPECIALTY TRAINING

SBAQs FOR THE FRCEM PRIMARY

Edited by
Pawan Gupta



SBAQs for the FRCM Primary

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**Pawan Gupta MBBS, MS, FRCS, FRCEM,
MSc (Medical Education)**

*Consultant in Emergency Medicine, Mid-Essex Hospital Services NHS Trust
Training Programme Director (CT3 & DRE-EM), Health Education,
East of England, UK*

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PREFACE

The assessment process in medicine has evolved from descriptive questions and answers to multiple true or false questions, to a more specific application of knowledge by way of single best answer (SBA) styles. The Royal College of Emergency Medicine has changed its specialty examination process at all steps; replacing the old MRCEM and FRCCEM to new format of the FRCCEM examinations. The FRCCEM Primary examination, the Part A of the old MRCEM, constitutes multiple choice question paper of 180 single best answer questions (SBAQs) over three hours replacing the old true/false system following its Basic Sciences 2015 Curriculum. The first new Primary Examination took place in December 2016.

This book is unique as it includes questions very similar to that of the FRCCEM Primary examination. The answer to each question is followed by a rationale of the correct choice and an explanation as to why the other options are incorrect/inappropriate. The explanations are extensive with appropriate references so that the reader's thoughts are stimulated and encouraged to read further. This allows the reader to explore and develop their knowledge of the relevant topic. Each question is based on a clinical scenario, most of which are taken from real-life experiences and correlated with the basic background sciences. The questions also cover the practical skills to improve understanding of the basics and their applicability in day-to-day life. It is also outside the scope of ability to include every topic in emergency medicine in this book. Therefore, the scenarios written in this book cover the regular clinical issues alongside the more serious ones with potentially catastrophic consequences.

This book is not only a simple question and answer book, but also provides additional descriptions to help readers prepare for the examination. Hence, the aim of this book is not to facilitate the cramming of questions and answers by the readers just for a successful exam result, but to provide a platform of stimulating, enjoyable, and thought-provoking experiences.

To enrich the learning of candidates, I would also highly recommend reading the book *Oxford Assess and Progress: Emergency Medicine*, which provides over 250 extra clinical questions (approximately) to ensure a solidification of emergency medicine knowledge. These consist of a mixture of SBAs and extended matching questions and answers based on real-life clinical scenarios.

Pawan Gupta

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ABBREVIATIONS

ABG	arterial blood gas
ACE	angiotensin converting enzyme
ACL	anterior cruciate ligament
ACS	acute coronary syndrome
ACTH	adrenocorticotrophic hormone
AD	Alzheimer's disease
ADH	antidiuretic hormone
AF	atrial fibrillation
AICA	anterior inferior cerebellar artery
AIDS	acquired immunodeficiency syndrome
AMI	acute myocardial infarction
AMTS	abbreviated mental test score
ANP	atrial natriuretic peptide
ARAS	ascending reticular activating system
ARR	absolute risk reduction
ASIS	anterior superior iliac spine
AV	atrioventricular
BNP	brain natriuretic peptide
BP	blood pressure
bpm	beats per minute
CCS	central cord syndrome
CI	confidence interval
CKD	chronic kidney disease
CNS	central nervous system
COPD	chronic obstructive pulmonary disease
COX	cyclooxygenase
CPK	creatinine phosphokinase
CPP	cerebral perfusion pressure
CPR	cardiopulmonary resuscitation

CRH	corticotropin-releasing hormone
CRP	C-reactive protein test
CRT	capillary refill time
CSF	cerebrospinal fluid
CT	computed tomography
CVA	cerebrovascular accident
CXR	chest X-ray
DI	diabetes insipidus
DKA	diabetic ketoacidosis
DLCO ₂	diffusion capacity of the lungs for CO ₂
DVT	deep vein thrombosis
EBM	evidence-based medicine
ECF	extracellular fluid
ECG	electrocardiogram
ED	emergency department
EHL	extensor hallucis longus
FAST	focused assessment sonography test
FCU	flexor carpi ulnaris
FDP	flexor digitorum profundus
FDS	flexor digitorum superficialis
FEV ₁	forced expiratory volume in 1 second
FVC	forced vital capacity
GABA	gamma amino butyric acid
GCS	Glasgow Coma Scale
GFR	glomerular filtration rate
GLUT	glucose transporter
GP	general practitioner
HBV	hepatitis B-virus
HIV	human immunodeficiency virus
HR	heart rate
HSV	human papilloma virus
IC	intercostal
ICP	intracranial pressure
IgE	immunoglobulin E
IgG	immunoglobulin G
IgM	immunoglobulin M

IGF	insulin growth factors
ILGF	insulin-like growth factor
IMA	internal mammary artery
INR	international normalized ratio
IP	interphalangeal joint
ISF	interstitial fluid
IV	intravenous
IVC	inferior vena cava
JVP	jugular venous pressure
LP	lumbar puncture
LV	left ventricle
MCA	middle cerebral artery
MCL	medial collateral ligament
MCV	mean corpuscular volume
MMR	measles, mumps, and rubella
MRSA	methicillin-resistant <i>Staphylococcus aureus</i>
MS	multiple sclerosis
MTP	metatarsophalangeal
NNH	number needed to harm
NNT	number needed to treat
NPV	negative predictive value
NSAIDs	non-steroidal anti-inflammatory drugs
PCL	posterior cruciate ligament
PCR	polymerase chain reaction
PD	Parkinson's disease
PE	pulmonary embolism
PEA	pulseless electrical activity
PEG	percutaneous endoscopic gastrostomy
PICA	posterior inferior cerebellar artery
PID	pelvic inflammatory disease
PNS	peripheral nervous system
PO	<i>Per os</i> , by mouth
PSA	procedural sedation and analgesia
PSNS	parasympathetic nervous system
PTH	parathyroid hormone
RASS	Richmond Agitation-Sedation Scale

RBC	red blood cell
RCT	randomized controlled trial
RIF	right iliac fossa
RR	respiratory rate
RSV	respiratory syncytial virus
RV	right ventricle
SaO ₂	oxygen saturation
SC	subcutaneous
SCA	superior cerebellar artery
SLE	systemic lupus erythematosus
SMA	superior mesenteric artery
SNS	sympathetic nervous system
STEMI	ST-elevation myocardial infarction
T	temperature
T2DM	type 2 diabetes mellitus
TB	tuberculosis
TIA	transient ischaemic attack
TN	trigeminal neuralgia
UGI	upper gastrointestinal bleeding
UTI	urinary tract infection
VF	ventricular fibrillation
VP	venous pressure
V/Q	ventilation/perfusion (scan)
WBC	white blood cell

CONTRIBUTORS

In order of contribution:

David Thaxter

Department of Paediatrics
Kingston Hospital, Kingston Upon
Thames, UK

Trisha Gupta

Department of Emergency Medicine
Kingston Hospital NHS Foundation Trust
UK

Pawan Gupta

Consultant, Department of Emergency Medicine
Mid-Essex Hospital Services NHS Trust, UK

Daniel Walter

Bedford Hospital NHS Trust
Bedford Hospital
UK

Additional contributors:

Jennifer Currigan

Emergency Medicine Department Guys and St Thomas' NHS Trust
Evelina Hospital,
UK

Kaung Htet

Cardiology Department
Royal Free London NHS Foundation Trust
University College London
London, UK

INTRODUCTION

GENERAL ADVICE ON PREPARATION FOR THE EXAMINATION

There have been changes to the structure of the membership examination. From August 2016, the Part A of MRCEM examination will be replaced by FRCEM Primary examination. In the previously known format of the Part A examination, each question had four statements and the candidate had to answer all of them by marking the given statement as 'True' or 'False'. In the new system, it will consist of multiple choice question (MCQ) paper of single best answer questions (SBAQ). Each question has five choices and the candidate has to select the single best answer. The paper has 180 questions to be answered in three hours. The FRCEM Primary examination is mapped to the Emergency Medicine 2015 Curriculum, which is available on the RCEM website.

In order to prepare for the FRCEM Primary examination, it is imperative to acknowledge the extensive syllabus; it is easy to underestimate the time required to prepare and revise for it. It covers a vast array of topics, most of which may not have been revisited since your medical school days. Preparation time for this exam is recommended as six to nine months to achieve an appropriate standard.

Revising and spending substantial time on the topic that a candidate enjoys most is unfortunately not the most efficient method of reviewing information, as rewarding as it may seem. It would be advisable to start by revising the material that is disliked the most. This way, if you are running short on revision time, you will be left with topics that you already know a lot about. Hence, your revision should be easier and less stressful. With the busy unsocial shifts of the emergency department, one option may be to revise on the job. Whether you are working on the shop floor in the emergency department (ED) or rotating through acute medicine and anaesthetics, there are many opportunities for you to consolidate your knowledge. For example: talk yourself through local anaesthetic side effects while doing a hematoma block; calculate the A-a gradient on your COPD patients; or discuss hand anatomy when referring your metacarpal fractures, and so on. These are all practical and opportunistic methods of consolidating your knowledge.

Practice questions are a valuable resource during the revision period and are available in abundance. It is important that you are familiar with the format and structure of the questions that you will see in the exam and will therefore be able to discover the best ways to approach these questions. This can only be achieved carefully by reading the College guidelines, following them, and practising numerous questions. Inevitably, as with any exam, certain topics tend to be more popular with examiners than others and this is reflected in the practice questions that you will find. As such, there is a large section of questions dedicated to upper limb anatomy to reflect the proportion of questions in the FRCEM Primary exam. Do not limit yourself only to emergency medicine question banks. MRCS and MRCP exam questions are also excellent revision material. Additionally, the MRCS anatomy syllabus is very similar to that of the FRCEM Primary exam, as is the question typology. The same is also true in the microbiology and pharmacology sections of the MRCP examination.

Make sure that you practice under exam conditions. Time yourself doing mock exams so you are used to pacing yourself when it comes to the real situation. There is nothing worse than not answering the last five questions because you were short on time.

It is also worth noting that there is no negative marking in the FRCM Primary exam, so make sure you attempt every question. If you guess the answers, you have a 20% chance of scoring a mark, but a blank question will always score 0.

Finally, read the question carefully. Marks are easily lost because you either misunderstood what was being asked or missed that all-important word in the question.

Good luck!

- 1. A 75-year-old female has had paraesthesia on the inner surface of the right hand following a sprain to the neck after a fall. Which nerve root is the most likely to be affected?**
 - A. C5
 - B. C6
 - C. C7
 - D. C8
 - E. T1

- 2. A 26-year-old male has been stabbed with a knife in his left axilla during a fight. He is bleeding profusely. His blood pressure (BP) is 86/56 mmHg and heart rate (HR) is 116 bpm. Which statement is correct regarding the axilla?**
 - A. Axillary artery becomes the brachial artery at the lower border of teres minor
 - B. The axilla is irregular in shape and somewhat tilted rectangle
 - C. The axillary artery is divided into three parts by pectoralis major
 - D. The axillary artery commences at the medial border of the first rib as a continuation of subclavian artery
 - E. The cervicoaxillary opening at the apex of axilla transmits subclavian artery and brachial plexus from the neck into the axilla

- 3. A 30-year-old male, who is a martial art athlete, has had subcoracoid dislocation of his left shoulder joint. This has been successfully reduced in the emergency department. His shoulder has been immobilized in a poly sling. Which is the single best appropriate statement regarding the shoulder joint?**
 - A. Abduction is initiated by deltoid muscle
 - B. Movement around the shoulder girdle in a fused shoulder joint is very limited
 - C. Movement of sternoclavicular joint is reciprocal to the scapular movement
 - D. Movement of the shoulder joint itself can be divorced from those of the whole shoulder girdle
 - E. Rotation of scapula begins when the abduction of the joint is near completion

- 4. A 20-year-old male has a self-inflicted knife wound in his left antecubital fossa. He is bleeding profusely. Which is the correct statement regarding antecubital fossa?**
- A. It is a diamond-shaped area in front of the elbow joint
 - B. The brachial artery bifurcates to radial and ulnar arteries at the level of the neck of radius
 - C. Brachial artery pulsation may not be visible on ultrasound examination
 - D. The median nerve lies lateral to the brachial artery in the antecubital fossa
 - E. The lateral margin is formed by bicipital tendon
- 5. An 88-year-old lady has had fall on her outstretched right hand. She is unable to move her right thumb. Her wrist is swollen, bruised, and deformed. Injury to which single nerve supply may explain the patient's neurological sign?**
- A. The abductor pollicis brevis is innervated by C6–7 component of the median nerve
 - B. The abductor pollicis brevis is innervated by the C8-T1 component of the median nerve
 - C. The adductor pollicis is innervated by C6-C7 componesnt of the ulnar nerve
 - D. The adductor pollicis is innervated by the C8-T1 component of median nerve
 - E. The opponens pollicis is innervated by the C7–8 component of the ulnar nerve
- 6. A 28-year-old man has had a laceration on his palm with a Stanley knife while laying carpet. He is unable to flex his middle finger at the proximal interphalangeal (IP) joint. Which is the single most likely tendon might have been severed?**
- A. Flexor digitorum profundus (FDP)
 - B. Flexor digitorum superficialis (FDS)
 - C. Lumbricals
 - D. Palmer interosseous
 - E. Palmaris longus
- 7. A 25-year-old man has had his right index finger tip crushed when his seven-year-old son slammed the car door suddenly. Which is the single most likely statement correct regarding the nail bed?**
- A. The germinal matrix is responsible for the growth of the nail bed
 - B. The nail bed is a thin layer of epithelial tissue
 - C. The skin edge at the distal nail is called eponychium
 - D. The skin that covers the proximal end of the nail is called hyponychium
 - E. The source of blood supply to the nail bed is median artery

8. A 25-year-old man has had a motorbike accident. His right wrist is swollen and tender. Which is the single most likely statement correct regarding carpal bones?

- A. Only the scaphoid articulates with distal radius
- B. The carpal bones are organized in proximal, middle, and distal rows
- C. The distal row of carpal bones is more mobile than the proximal row
- D. The lunate provides the main stability to the midcarpus
- E. The proximal row is made up of scaphoid, lunate, and triquetrum

9. A 78-year-old lady has had a fall on her outstretched left hand. She has a comminuted fracture of the distal radius. Which single statement regarding the wrist joint is correct?

- A. Carpal joint movements add to the range of extension of the wrist
- B. It is a condyloid joint
- C. It is a hinge joint
- D. Range of the abduction is more than the adduction
- E. The articular disc of the inferior radioulnar joint is attached to the radial styloid process

10. A 40-year-old lady has had a fall on her outstretched left hand. She has a deformity of the left elbow joint and is unable to move. The X-ray confirms dislocation of the elbow joint. Which single statement regarding the elbow joint is correct?

- A. The capsule of the joint is reinforced by ligaments on the anterior, posterior, medial, and lateral sides
- B. The lateral collateral ligament is attached distally to the radial neck
- C. The medial and lateral condyles are intracapsular
- D. The superior radioulnar joint is a part of the elbow joint
- E. The upper margin of the annular ligament is free to allow radial head movements

11. A 28-year-old man has had a fall on his outstretched right hand. The radial side of his wrist is swollen and bruised. He has tenderness in the anatomical snuffbox. Which is the most likely correct statement about the anatomical snuffbox?

- A. The abductor pollicis brevis forms the radial boundary
- B. The extensor pollicis brevis forms the ulnar boundary
- C. Radial artery can be palpated 5 mm away on the ulnar side of the 'snuffbox'
- D. The cephalic vein passes through the roof of the 'anatomical snuffbox'
- E. The floor is formed by the ulnar surface of the trapezium

- 12. A 21-year-old football player was tackled from behind while running in a game of football. He lost his balance and landed on his head, resulting in a burst fracture dislocation of C6/7. He has neurological signs of injury in the upper limb. Which tendon reflex arc involves C6/7?**
- A. Biceps
 - B. Brachioradialis
 - C. Long finger flexors
 - D. Supinator
 - E. Triceps
- 13. A 66-year-old woman has had paraesthesia on the axilla and medial surface of the upper arm after a radical axillary clearance because of breast cancer. Which nerve is affected?**
- A. Axillary
 - B. Intercostobrachial
 - C. Median
 - D. Radial
 - E. Ulnar
- 14. A professional gymnast has injured her left shoulder during a contest. She found combing and dressing herself very painful. Rotator cuff muscle injury was suspected. Which muscle is not a part of the rotator cuff?**
- A. Infraspinatus
 - B. Subscapularis
 - C. Supraspinatus
 - D. Teres major
 - E. Teres minor
- 15. A rugby player has injured his left shoulder during a match. He has subcoracoid dislocation of his shoulder joint and has anaesthesia on the 'regiment batch' area (skin on the lower part of the deltoid muscle). Which muscle is most likely to be affected in such nerve injury?**
- A. Infraspinatus
 - B. Supraspinatus
 - C. Serratus Anterior
 - D. Teres major
 - E. Teres minor

- 16. A 26-year-old man has fallen off his motorbike and sustained an open fracture of the right clavicle. Brachial plexus injury is also suspected. Which statement is correct about the brachial plexus?**
- A. The cords pass under the clavicle
 - B. The middle trunk is formed by the ventral rami of C8
 - C. The roots pass in-between the middle and posterior scalene muscles
 - D. The trunks are formed in the axilla
 - E. There are three divisions—medial, lateral, and posterior
- 17. A 79-year-old woman has right hip pain following a fall. She has deformity of the hip joint. The X-ray shows fracture neck of femur. To relieve pain, fascia iliaca block is performed. Which is the single most likely area of skin to be anaesthetized?**
- A. Anterior part of labia majora
 - B. Lateral aspect of the lower leg
 - C. Lateral aspect of the thigh
 - D. Mid-inguinal point
 - E. Web space between first and second toe
- 18. A 40-year-old female attends the emergency department (ED) with groin pain and weakness with leg adduction on the left side. She recently underwent surgery for endometriosis. On examination, she has weak adduction of the hip joint and sensory loss over medial aspect of the thigh. Which nerve is most likely to be injured?**
- A. Genitofemoral
 - B. Iliohypogastric
 - C. Ilioinguinal
 - D. Obturator
 - E. Pudendal
- 19. A 42-year-old man has tingling and burning sensation of his outer aspect of his left thigh. He has type 2 diabetes and is on metformin. His condition is diagnosed as meralgia paraesthetica. Which is the most likely nerve root affected?**
- A. L1–L2
 - B. L2–L3
 - C. L3–L4
 - D. L4–L5
 - E. L5–S1

- 20. A 45-year-old female has had a fall on her buttocks. She is unable to stand on one leg. The Trendelenburg test is positive on the right. Which statement is correct regarding the muscles around the hip joint?**
- A. Gluteus maximus is an abductor
 - B. Gluteus maximus is a lateral rotator
 - C. Gemelli and quadratus femoris are medial rotators
 - D. Gluteus medius and minimus are extensors of the joint
 - E. Tensor fasciae latae are lateral rotators
- 21. A 14-year-old boy has had a fall on his buttocks. He has pain in his right hip and unable to stand on the right leg. The Trendelenburg test is positive. Which muscle group is affected?**
- A. The left gluteus maximus and gluteus medius are affected
 - B. The left gluteus medius and minimus are affected
 - C. The right gluteus maximus and gluteus medius are affected
 - D. The right gluteus medius and minimus are affected
 - E. The tensor fasciae latae of the right is affected
- 22. An 80-year-old female has had a fall and sustained an intracapsular fracture of the neck of left femur. Which of the following options may cause avascular necrosis of the head?**
- A. Branches from the obturator artery are interrupted to cause avascular necrosis
 - B. Disruption of the cervical vessels and retinacular supply of the head are responsible for the necrosis
 - C. Disruption to the cruciate anastomosis contributes mainly to the necrosis of the head
 - D. The disruption of the branches from the superior gluteal artery is the chief contributor
 - E. The ligament of the head of the femur (which carries the main blood supply to the femoral head) is disrupted
- 23. A 29-year-old man has had pain and deformity to his left lower thigh/upper knee area after a road traffic collision. The X-ray is shown in Figure 1.1. Which statement is most likely correct?**
- A. Loss of the dorsalis pedis pulse is a likely clinical finding
 - B. The distal fragment is angulated because of the pull from the adductor magnus
 - C. The distal fragment is pulled up by hamstrings
 - D. The great saphenous vein may be severed
 - E. Tibial nerve is most likely to be injured

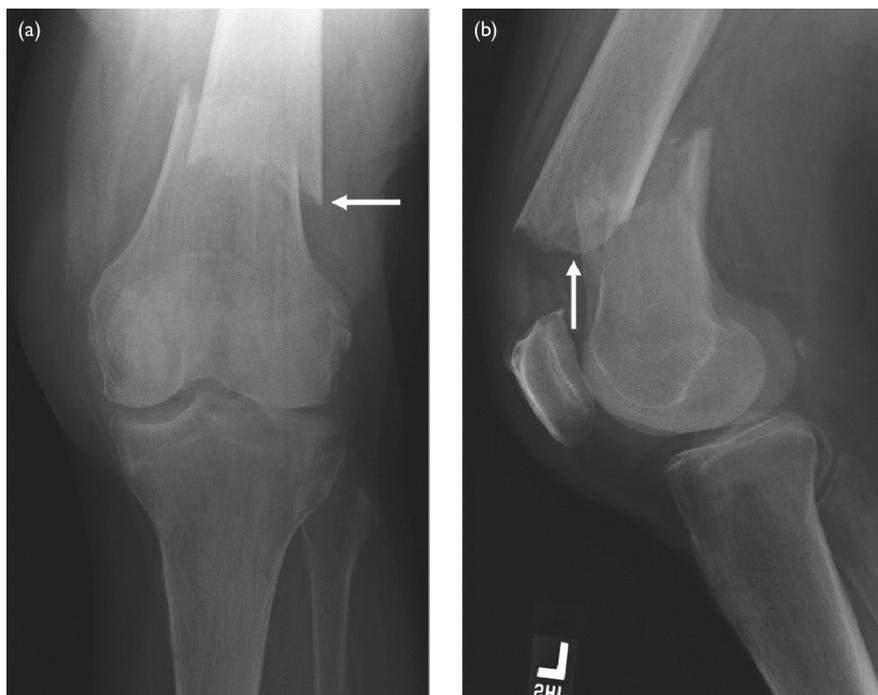


Figure 1.1 Knee X-rays.

Reproduced with permission from Hani Abujudeh (eds), *Emergency Radiology*, Figure 34.4. Copyright © 2016 with permission from Oxford University Press.

24. A 23-year-old man has had a blunt injury to the back of his right thigh during a rough tackle while playing rugby. He is very tender on the middle third of his thigh posteriorly and finding it difficult to walk. Which is the most appropriate statement regarding muscles of the posterior compartment of the thigh?

- A. All hamstring muscles cause flexion of the hip and extension of the knee joints
- B. Semimembranosus originates from the ischial tuberosity and is inserted to the lateral tibial condyle
- C. Semimembranosus and semitendinosus muscles lie on the medial aspect
- D. Semitendinosus at its insertion contribute to the formation of the ligaments and fascia around the joint
- E. The biceps femoris is inserted into the medial collateral ligament of the knee joint

- 25. A 15-year-old girl has had sudden pain in her left knee while playing netball. Her knee is fixed in a semiflexed position with deformity in the front of the knee. A lateral patellar dislocation is suspected. Which option is most likely correct?**
- A. Associated with disruption of the medial patellofemoral ligament and medial retinaculum
 - B. Hyperextension of the knee with leg in extension may predispose this condition
 - C. The displacing force on the patella is markedly increased during extension
 - D. The forwards prominence of the lateral condyle of the femur contributes to lateral dislocation
 - E. The pull by the quadriceps tendon on the patella is vertical
- 26. A 65-year-old man has had pain in the left knee for few weeks, which has increased recently. He is finding difficult to walk. On examination, he has a cystic swelling in the popliteal fossa, which is suspected to be a popliteal cyst. Which is the most appropriate option regarding popliteal fossa?**
- A. The fat in the fossa may bulge in full extension of the knee, giving the appearance of a swelling
 - B. The floor of the fossa is formed by the upper posterior surface of the tibia
 - C. The fossa has semimembranosus tendon on the medial side and semitendinosus tendon on the upper lateral side
 - D. The lower part of the fossa has the boundary of soleus on both sides
 - E. The roof of the fossa is formed by the layer of biceps expansion covered with skin
- 27. A 55-year-old man presented to ED with a large painful swelling in the popliteal fossa. There had been a puncture wound by a nail two days ago. On examination, there is a pulsatile mass in the popliteal fossa. Traumatic popliteal pseudoaneurysm is suspected. Which structure is not a content of the popliteal fossa?**
- A. The common peroneal nerve
 - B. The deep peroneal nerve
 - C. The posterior cutaneous nerve of thigh
 - D. The superior genicular nerve
 - E. The small saphenous vein
- 28. A 25-year-old man has had right knee pain following an injury while playing football. He was going to kick a ball when the opposition player fell on his stance knee from the lateral side. He has a suspected medial collateral ligament sprain. Which option is correct?**
- A. In minimal medial ligament sprain, the extended knee may have an opening gap during abduction of the leg
 - B. The collateral ligaments are liable to be injured when the knee is in flexion
 - C. The lateral ligaments are torn more commonly than the medial
 - D. The medial ligament may be torn when a violent abduction strain is applied
 - E. The stability of the knee joint is mainly dependent on its ligaments

- 29. A 22-year-old man has had an injury to the left knee pain during a rugby game. He has instantaneous swelling of the joint and inability to weight bear. He has anterior drawer sign positive. The most probable diagnosis is anterior cruciate ligament (ACL) tear. Which option is correct regarding the cruciate ligaments?**
- A. Distally, the ACL is attached to the posterior part of the tibial plateau
 - B. The ACL is attached to the posterolateral aspect of the medial femoral condyle
 - C. The ACL is shorter and stronger than the posterior cruciate ligament (PCL)
 - D. The ACL may be torn in violent hyperextension of the knee
 - E. The cruciate ligaments are intracapsular and intrasynovial
- 30. A 58-year-old man with known type 2 diabetes has had a back-slab removed from his left leg last week. His leg was immobilized for a midshaft fibular fracture for about four weeks. He says he is finding it difficult to walk. He has to lift his leg high up while walking to avoid tripping over on his toes. He also has a pins and needles sensation in his foot. Which nerve is most likely affected?**
- A. Common peroneal
 - B. Diabetic neuropathy
 - C. Femoral
 - D. Lateral femoral cutaneous
 - E. Posterior tibial
- 31. A 28-year-old man, while running for bus, has sprained his right ankle joint which is now swollen and painful. He has bruising and tenderness on the lateral side of the joint. There is no tenderness on the medial side of the joint. Which ligament is injured in this case?**
- A. Anterior talofibular ligament
 - B. Anterior tibiofibular ligament
 - C. Calcaneofibular ligament
 - D. Deltoid ligament complex
 - E. Transverse tibiofibular ligament
- 32. An 80-year-old woman has had bleeding from a vein after she caught her leg on furniture. She has varicose veins for many years. Which statement is correct regarding the veins of the lower limb?**
- A. The great saphenous vein drains the medial part of the dorsal foot
 - B. The great saphenous vein travels through popliteal fossa
 - C. The short saphenous vein commences behind the lateral malleolus
 - D. The position of the great saphenous vein is very variable
 - E. The sural nerve accompanies the great saphenous vein

- 33. A 64-year-old man is brought in by ambulance with chest pain. A 12-lead electrocardiogram (ECG) is performed. This shows ST elevation in the I, aVL, V3–V6 leads, and ST depression in the II, III, aVF. Which is the most likely artery to be occluded?**
- A. Left anterior descending artery
 - B. Left circumflex artery
 - C. Right coronary artery
 - D. Right marginal branch
 - E. Sinoatrial nodal artery
- 34. Having been involved in a road traffic accident, a 25-year-old male arrives at the hospital complaining of chest pain that is worse on movement and breathing. He was the driver of a vehicle travelling at 60 mph and was wearing a seat belt. On examination he is very tender over his sternum. X-rays demonstrate a fracture of his sternum. Which statement is the most appropriate regarding the sternum?**
- A. It is made up of four parts
 - B. The angle of Louis is at the level of T6
 - C. The first rib does not articulate with the sternum
 - D. The ribs attach to the sternum via its costal cartilage
 - E. The xiphisternum has the false ribs attached to it
- 35. A gentleman has had a red, itchy, and burning rash is like a band at the level of his right nipple around to his back. It does not cross the midline. He has shingles. Which is the most likely dermatome affected?**
- A. T3
 - B. T4
 - C. T5
 - D. T6
 - E. T8
- 36. A 75-year-old man has fallen off a stepladder while cleaning his windows. He landed on his left side, hitting a small wall. He has pain on the left side of his chest, which is worse on breathing and movement. The X-rays show a fracture of his left sixth rib. Which statement is the most appropriate regarding ribs?**
- A. All ribs articulate with the thoracic vertebra above it, as well as its own
 - B. The eleventh and twelfth ribs are sometimes called floating ribs
 - C. The false ribs have no connection to the sternum
 - D. There are 13 ribs positioned bilaterally in a man
 - E. The ribs ossify anteriorly to posteriorly

- 37. A 22-year-old male has had traumatic haemopneumothorax on the right side. An intercostal (IC) drain to be inserted through the fifth intercostal space in the midaxillary line. Which is the single most appropriate statement?**
- A. The blunt dissection for the drain insertion goes through the two layers of intercostal muscles
 - B. The cutaneous nerve supply in the fifth IC space is usually through the sixth thoracic nerve
 - C. The neurovascular bundle is organized as nerve, artery, and vein, from top to bottom
 - D. The neurovascular bundle lies between the internal and innermost intercostal muscle layers
 - E. The neurovascular bundle lies just above the sixth rib
- 38. A 25-year-old male has had a penetrating injury to the left side of the neck. The chest X-ray shows significantly elevated left hemidiaphragm. A chest X-ray five years ago done for a different clinical reason was normal. He is suspected to have a phrenic nerve injury. Which is the single most appropriate statement?**
- A. The abnormality is an anatomical variant
 - B. The phrenic nerve carries fibres from C5, C6, and C7 segments of the spinal cord
 - C. The phrenic nerve is a purely motor nerve
 - D. The sensation from the central diaphragm is carried by the phrenic nerve
 - E. The sensory fibres from the peripheral part of the diaphragm runs through the phrenic nerve
- 39. A 45-year-old male, who has a learning difficulty, has had a choking episode with a food bolus. He had a cough and cyanotic episode before settling down. A foreign body inhalation is suspected. Which is the most appropriate statement?**
- A. The foreign body has a tendency to go into left main bronchus
 - B. The left main bronchus also gives off upper lobe branch like the right one before entering the lungs
 - C. The left main bronchus enters the hilum of the lungs opposite T5
 - D. The right main bronchus enters the root of the lungs at the level of T4
 - E. The right main bronchus is shorter and wider than the left main bronchus
- 40. A 40-year-old male has had cough with expectoration and fever for about four to five days. He is mildly short of breath. A provisional diagnosis of pneumonia is suspected. His chest X-rays are shown in Figure 1.2 Which is the single most likely site of consolidation on the right side?**
- A. The lower lobe
 - B. The middle lobe
 - C. The middle and lower lobes
 - D. The subdiaphragmatic lesion
 - E. The upper lobe

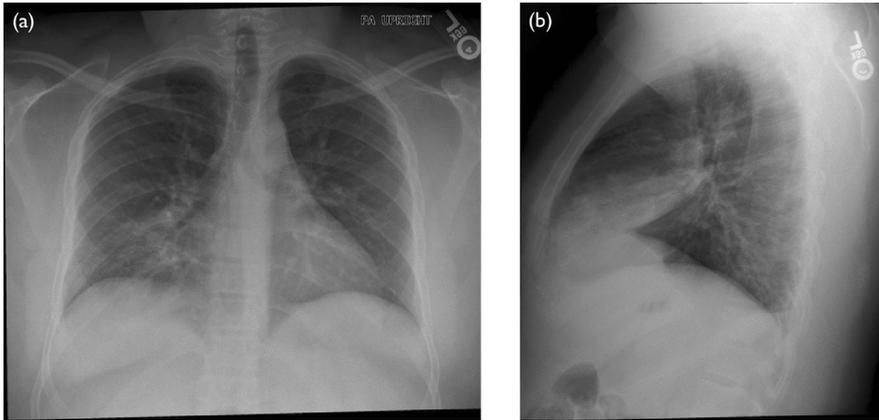


Figure 1.2 Chest X-rays (CXRs).

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- 41. A 45-year-old woman has had shortness of breath and right-sided pleuritic chest pain for about a week. Her HR is 82 bpm, RR 24 breaths per minute, and BP124/78 mmHg. Pulmonary embolism (PE) is suspected. Which is the single most appropriate statement?**
- Hypoxaemia is purely caused by a reduction in blood supply to the lungs
 - It is always due to blockage of the main pulmonary artery
 - Left heart failure is the commonest cause of death
 - Only 15% of patients with PE have signs of deep vein thrombosis (DVT)
 - Pleuritic chest pain is caused by the sensation carried from the pulmonary arterial occlusion site
- 42. A 75-year-old man has had sudden onset of central chest pain, which has radiated through to the back. He appears sweaty, clammy, and pale. His HR is 100 bpm, RR 28 breaths per minute, BP95/85 mmHg. The provisional diagnosis is thoracic aortic dissection. Which is the single most appropriate statement regarding aortic dissection?**
- Crack cocaine may be a high-risk condition for aortic dissection
 - It most commonly presents in the descending thoracic aorta
 - Pulse deficit is more common in ascending aortic dissection
 - The mortality is lower in pulse deficit patients
 - The primary event is an atheromatous plaque in the intimal layer of aorta

- 43. A 25-year-old man, who is known to have asthma, has had shortness of breath and wheezes gradually developed over the last couple of days. His HR is 100 bpm, respiratory rate 32 breaths per minute, BP 122/75 mmHg, SaO₂ 88% on air. The provisional diagnosis is acute exacerbation of asthma. Which is the single most appropriate statement regarding acute asthma?**
- A. Airflow obstruction is contributed to by smooth muscle spasm, oedema, and mucus production
 - B. Cartilaginous support in the intrapulmonary airways contributes to the airflow obstruction in this situation
 - C. Mast cells are only evident in the bronchiolar walls after exposure to allergens
 - D. The smooth muscles around the alveoli contribute to the air flow obstruction
 - E. The alveoli have the same epithelia as that of the trachea
- 44. An otherwise healthy 20-year-old man has had sudden onset of pleuritic chest pain and mild shortness of breath. His HR is 80 bpm, RR 24 breaths per minute, BP 122/75 mmHg, and SaO₂ 96% on air. The chest X-ray (CXR) is shown in Figure 1.3. Which is the single most appropriate statement?**
- A. It is mandatory to insert a chest drain immediately
 - B. The mediastinal pleura is a part of the visceral pleura
 - C. The sensation to the diaphragmatic pleura is through the intercostal nerves
 - D. The visceral pleura could be easily separated from the surface of the lungs
 - E. The whole of the mediastinal pleura is innervated by the phrenic nerves

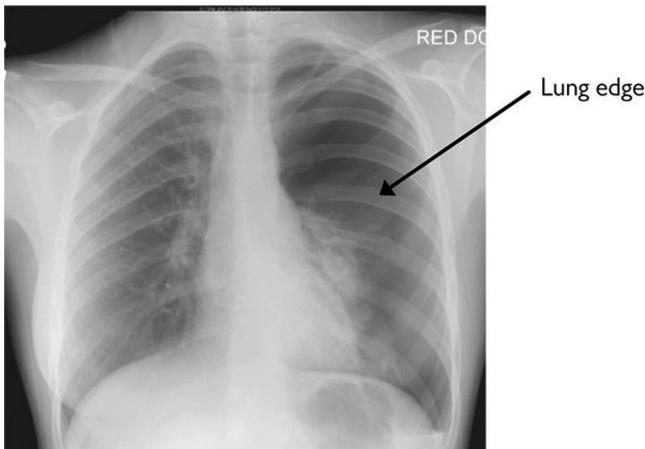


Figure 1.3 CXR.

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- 45. A 60-year-old man has had sharp pain in the central chest area, which is relieved by sitting forwards and worsened by lying down. His HR is 100 bpm, RR 30 breaths per minute, BP100/75 mmHg, and SaO₂ 96% on air. On ultrasound scan, he has pericardial effusion. Which is the single most appropriate statement?**
- A. Around 200–250 mL of fluid is necessary to produce cardiomegaly on chest radiograph
 - B. Most of the blood supply to the pericardium is derived from the aortic root
 - C. Normally the amount of pericardial fluid is 2–5 mL
 - D. Pain from the parietal pericardium is transmitted by sympathetic fibres
 - E. The reduced cardiac output in pericardial effusion is due to compression on the left ventricle
- 46. A 68-year-old man who has had endoscopic dilatation of oesophageal stricture attends the ED with severe and sharp pain in the central chest area. He is also short of breath and unable to swallow. His HR is 110 bpm, respiratory rate 30 breaths per minute, BP100/75 mmHg, and SaO₂ 90% on air. He is suspected to have an oesophageal rupture. Which is the single most appropriate statement?**
- A. Aortic arch crosses oesophagus in the posterior mediastinum
 - B. The content of oesophagus following it rupture is contained within the posterior mediastinum
 - C. The left main bronchus crosses the oesophagus about 28 cm from the upper incisor teeth
 - D. The oesophageal opening lies at the level of T9 vertebral body
 - E. There are three layers of muscles in oesophagus
- 47. A 22-year-old woman has had pain, redness, and swelling in her left breast. She is lactating. A breast abscess is suspected on the upper outer quadrant. Which is the single most appropriate statement?**
- A. One-third of the breast sits on the pectoralis major
 - B. The breast lies between the deep pectoral fascia and chest wall muscles
 - C. The breast overlies the second to sixth rib in the vertical axis
 - D. The main blood supply is through perforating branches from intercostal vessels
 - E. The nipple contains abundant hair follicles, infection in which may result in abscess formation
- 48. A 62-year-old man has had chest pain for the last three hours. He is nauseous and feeling dizzy and sweaty. His ECG is shown in Figure 1.4. Which is the single most likely site of blockage?**
- A. Circumflex artery
 - B. Left anterior descending coronary artery
 - C. Origin of left coronary artery
 - D. Origin of right coronary artery
 - E. Posterior descending artery

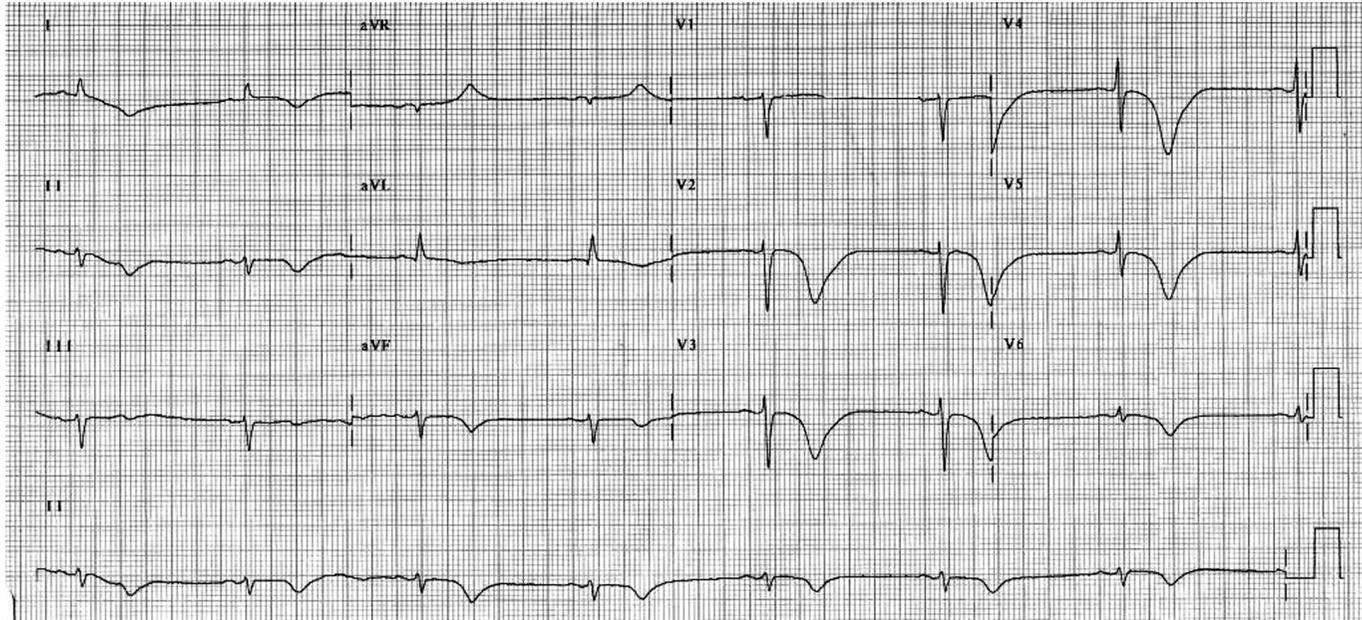


Figure 1.4 Electrocardiogram (ECG).

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- 49. A 45-year-old woman has had pain in the right upper abdomen. She is tender in the right upper quadrant and the Murphy's sign is positive. Acute cholecystitis is suspected. Which single statement is correct regarding the biliary system?**
- A. Calot's triangle is made up of the cystic artery, cystic duct, and the common hepatic duct
 - B. Hartmann's pouch is a part of a normal gall bladder
 - C. The gall bladder can hold about 50 ml of bile
 - D. The venous drainage of the gall bladder is through the cystic vein
 - E. The main content of the bile is cholesterol
- 50. A 45-year-old man has had pain in the upper-mid abdomen for six hours. It started suddenly and radiated to the back. He is tender in the epigastrium. His serum amylase is 1,250 IU/L. Which is the correct option?**
- A. Secretions from the *Islets of Langerhans* drain into the main duct
 - B. The portal vein is formed behind the neck of the pancreas
 - C. The splenic vein runs along the upper border of the pancreas
 - D. The uncinat process hooks posteriorly to the coeliac axis
 - E. The venous drainage from pancreas goes to the inferior vena cava
- 51. A 50-year-old man has attended the ED with sudden onset of pain in the right groin developed when he was lifting a heavy weight. He has had an inguinal hernia for some time. He is unable to reduce the swelling himself. The swelling in his right groin is very hard and tender. Which is the single best option regarding hernia?**
- A. The direct inguinal hernia can be controlled by pressure applied above the femoral pulse
 - B. The indirect hernia lies above and lateral to the pubic tubercle
 - C. The indirect inguinal hernia emerges through the posterior wall
 - D. The internal ring lies about 1.2 cm above the femoral pulse
 - E. The mid-inguinal point lies halfway between the anterior superior iliac spine (ASIS) and pubic tubercle
- 52. A 15-year-old boy has attended the ED with sudden onset of pain in the abdomen for the last 24 hours. His initial pain was around the mid abdomen, but later settled in right lower abdominal area. He is tender in the right iliac fossa. Acute appendicitis is suspected. Which is the correct statement regarding the appendix?**
- A. The afferent nerve from appendix enters the spinal cord at the eleventh thoracic segment
 - B. The appendicular artery is an end artery
 - C. The attachment of the appendix base to the caecum is variable
 - D. The lymphoid follicles in the appendix are present from birth
 - E. The histological structure of the caecum and appendix are similar

- 53. A 25-year-old man has received a kick in his upper abdomen while playing karate in a competition. He has bruising on the left half of the epigastrium. Which single artery may have contributed to the bruising?**
- A. Deep circumflex iliac artery
 - B. Inferior epigastric artery
 - C. Superficial epigastric artery
 - D. Superior gastric artery
 - E. Thoracoepigastric artery
- 54. A 75-year-old man has had sudden abdominal pain, which started centrally and gradually spread to all over the abdomen. He has excruciating pain. He has soft and mildly tender abdomen. He has atrial fibrillation. The diagnosis of mesenteric vascular occlusion is suspected. Which statement is most correct about the blood supply of intestine?**
- A. Blood through the inferior mesenteric vein eventually drains into the portal vein
 - B. The inferior mesenteric artery supplies only the colon
 - C. Superior mesenteric artery supplies the whole of the small intestine
 - D. The superior mesenteric vein drains into the inferior vena cava
 - E. The hepatic flexure of transverse colon is prone to ischaemia
- 55. A 55-year-old man has had sudden abdominal pain, which started in the epigastrium and gradually spread to all over the abdomen. He was previously diagnosed with an ulcer on the posterior wall of the stomach. He is suspected to have a peptic ulcer perforation. In which area will the fluid will be collected initially?**
- A. Hepatorenal pouch
 - B. Lesser sac
 - C. Right subhepatic space
 - D. Right subphrenic space
 - E. Splenorenal pouch
- 56. A 45-year-old man has had sudden pain in his back passage while passing hard stool. He also noticed bright red blood on toilet tissue paper. On examination, he has posterior midline anal fissure. The digital examination is very painful with spasm of sphincter. What is the single best appropriate statement?**
- A. The anal canal is about 7.5 cm long
 - B. The anal verge is lined by columnar epithelium
 - C. Fissure-in-ano extends above the dentate line
 - D. The external sphincter is relaxed during resting stage
 - E. Pain sensation is carried through the second to fourth sacral spinal nerves