Carpe Diem Imaging Informatics I — Study Bank

ANSWER & EXPLANATION UNDER EVERY QUESTION · PHAR 1XX · BASIC IMAGING INFORMATICS — UNIT 1A

80 questions · Unit 1a · KNUST Pharmacy Practice · Devil 20 · Easy 20 · Hard 20 · Medium 20

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1	Unit 1a — Introduction to Imaging Informatics	80

Totals: 80 questions — Devil 20 · Easy 20 · Hard 20 · Medium 20.

Module 1: Unit 1a — Introduction to Imaging Informatics — 80 questions

1. Set 1 · Q1–10

Informatics · Easy

1. Informatics is described as the science of processing data for what purpose?

A Printing and publishing
B Storage and retrieval
C Encryption and deletion
D Sales and advertising

> **Answer 1: B**
> It covers information systems, data management and computational techniques.

Informatics · Medium

2. Which fields does informatics integrate to solve complex problems?

A Chemistry, physics and mathematics alone, without computing
B Law, economics and history alone, without computing
C Computer science, information technology and domain knowledge
D Mechanical, civil and electrical engineering only

> **Answer 2: C**
> Informatics is multidisciplinary.

Informatics · Hard

3. Why is it prudent to qualify the term informatics with a knowledge area?

A Because informatics means something different in every country
B Because the term is only used in medicine
C Because it always refers to hardware
D Because informatics applies to so many broad fields that its meaning would be unclear

> **Answer 3: D**
> Qualifiers such as health, dental or imaging make the meaning specific. Basic Imaging Informatics · Unit 1a · Question Bank 4

Informatics · Devil

4. Which of these is NOT among the qualified informatics terms listed in the lecture?

A Culinary informatics
B Dental informatics
C Bio-informatics
D Chemical informatics

> **Answer 4: A**
> It does not appear among the listed examples.

Health informatics · Easy

5. Health informatics is simply the science that uses what to improve healthcare?

A Surgical instruments
B Dietary supplements
C Information technologies
D Hospital buildings

> **Answer 5: C**
> It applies information technologies to healthcare.

Health informatics · Medium

6. Which set of activities does health informatics involve?

A Collection, storage, analysis and dissemination of health-related data
B Manufacture, packaging, pricing and sale of medicines
C Construction, cleaning, catering and security
D Recruitment, training, payroll and promotion

> **Answer 6: A**
> These support clinical decision-making and patient care.

Health informatics · Hard

7. Which aims match those of health informatics?

A Reducing the number of clinicians and closing laboratories
B Improving healthcare delivery, patient outcomes and medical research
C Replacing patient records with paper charts
D Increasing the size of hospitals

> **Answer 7: B**
> These are the stated aims.

Health informatics · Devil

8. How does imaging informatics relate to health informatics?

A It is the parent field from which health informatics came
B It is unrelated to health informatics
C It has replaced health informatics
D It is one of several branches that together make up health informatics

> **Answer 8: D**
> It is a subset alongside medical, dental, nursing and pharmacy informatics.

History of health informatics · Easy

9. In which decades did early attempts at a total hospital information system begin?

A The 1920s and 1930s

B The 2000s and 2010s

C The 1850s and 1860s

D The 1970s and 1980s

> **Answer 9: D**
> Computers were first investigated for healthcare then.

History of health informatics · Medium

10. Which pairing describes the two approaches to hospital information systems?

A Personal computers for all staff, or paper charts for patients

B Cloud servers for imaging, or tape drives for pharmacy

C A single mainframe for all applications, or individual minicomputers sharing patient data

D Fax machines for referrals, or telephones for results

> **Answer 10: C**
> Both approaches appeared in the 1970s to 1980s.

2. Set 2 · Q11–20

History of health informatics · Hard

11. What did the individual minicomputers in specific application areas share?

A A single set of patient data

B A single set of billing codes only

C One shared printer

D One shared mainframe operator

> **Answer 11: A**
> They were separate systems linked through shared patient data.

History of health informatics · Devil

12. Which order of events is correct?

A Personal computers, then total hospital systems, then connected networks, then AMIA formed

B Total hospital information systems, then personal computers, then AMIA formed, then connected networks

C AMIA formed, then total hospital systems, then personal computers, then connected networks

D Connected networks, then personal computers, then AMIA formed, then total hospital systems

> **Answer 12: B**
> 1970s to 80s, 1980s to 1994, 1990, then 1995 onwards.

History of health informatics · Easy

13. In which year was the American Medical Informatics Association formed?

A 1895

B 1990

C 1980

D 1995

> **Answer 13: B**
> Informatics training and research became a high US priority.

History of health informatics · Medium

14. What characterises the current era of healthcare informatics that began in 1995?

A Mainframes only, with paper records throughout

B Isolated computers with no network connections

C Fast computers, linked networks and free-flowing clinical data

D Computers confined to research laboratories alone

> **Answer 14: C**
> Information is available anytime, anywhere.

History of health informatics · Hard

15. What does ubiquitous computing give clinicians?

A Access only inside the hospital from fixed terminals

B Access only to their own patients' printed charts

C Access only after office hours

D Access to information anytime and anywhere from any internet-connected device

> **Answer 15: D**
> Computing and the internet are everywhere. Basic Imaging Informatics · Unit 1a · Question Bank 7

History of health informatics · Devil

16. Which statement about the 1980s to 1994 period is correct?

A Smaller, stronger computers let practitioners buy their own

B Mainframes were replaced by the internet and mobile phones

C AMIA was founded to ban clinical computing in hospitals

D Computers stayed too large to leave central computer rooms

> **Answer 16: A**
> Personal computers began to be used as clinical tools.

Informatics · Easy

17. Informatics also studies the impact of information systems. Which kinds of impact are listed?

A Chemical, thermal and magnetic

B Seasonal, tidal and lunar

C Aesthetic only

D Mental, social, legal and economic

> **Answer 17: D**
>
> These are the listed impacts.

Informatics · Medium

18. Why is computing often the only way to make information beneficial?

A Because paper records are banned in all hospitals

B The volume of information in any field is too large to handle otherwise

C Because computers are always cheaper than hiring people

D Because information is only valuable when encrypted

> **Answer 18: B**
>
> The volume of information demands computation.

Health informatics · Hard

19. Health informatics acquires, structures and uses data and automated systems in which activity?

A Hospital building design

B Staff uniform selection

C Patient care decision-making

D Laboratory glassware washing

> **Answer 19: C**
>
> It supports clinical decisions.

Informatics · Devil

20. Which statement best distinguishes informatics from merely using computers?

A It studies the application of IT in a field and its impact on society

B It is the manufacture of computer hardware and devices

C It is the study of programming languages only, not their use

D It is the use of computers for word processing and printing

> **Answer 20: A**
>
> It combines application with study of impact.

3. Set 3 · Q21–30

Imaging informatics · Easy

21. Imaging informatics is a subset of which field?

A Agricultural informatics

B Health informatics

C Chemical informatics

D Engineering informatics

> **Answer 21: B**
>
> It deals specifically with medical images within health informatics.

Imaging informatics · Medium

22. Which activities does imaging informatics specifically deal with?

A Acquiring, storing, analysing and interpreting medical images

B Manufacture and sale of imaging machines worldwide

C Training of radiographers in anatomy and physics only

D Construction and design of radiology departments

> **Answer 22: A**
>
> It covers the image data cycle.

Imaging informatics · Hard

23. Which technologies does imaging informatics use to improve diagnostic accuracy and treatment planning?

A Film darkrooms, chemical developers and light boxes

B Pagers, fax machines and paper files

C Typewriters, carbon copies and filing cabinets

D Artificial intelligence, machine learning and data analytics

> **Answer 23: D**
>
> Advanced technologies are named in the lecture. Basic Imaging Informatics · Unit 1a · Question Bank 9

Imaging informatics · Devil

24. Which statement matches the Radiology Key definition of imaging informatics?

A The use of radiation to treat cancers within a hospital network

B The manufacture of efficient and accurate scanners for a network of clinics

C Using IT to deliver efficient, accurate, reliable imaging services in a network

D The use of paper records and film to store reliable images

> **Answer 24: C**
>
> It is about delivering imaging services through information technology.

Imaging informatics · Easy

25. What was imaging informatics previously called?

A Radiology informatics

B Nursing informatics

C Pharmacy informatics

D Dental informatics

> **Answer 25: A**
>
> It evolved chiefly in radiology.

Imaging informatics · Medium

26. Which alternative names are given for imaging informatics?

A Pharmacy informatics and nursing informatics

B Bio-informatics and chemical informatics

C Dental informatics and agricultural informatics

D Radiology informatics and medical imaging informatics

> **Answer 26: D**
>
> These are the lecture's alternative names.

Imaging informatics · Hard

27. Which processes does medical imaging informatics address?

A Image generation and printing only, without storage or security

B Storage and billing only, without display or perception

C Image generation, processing, management, transfer, storage, display and security

D Display and perception only, without storage or security

> **Answer 27: C**
>
> It is a broad sub-field of medical informatics.

Imaging informatics · Devil

28. With which disciplines does medical imaging informatics overlap?

A Agronomy, geology, astronomy, linguistics and music

B Electrical engineering, computer sciences, medical physics and psychology

C Law, accounting, marketing and sociology only, with no sciences

D Veterinary science, forestry, oceanography and anthropology

> **Answer 28: B**
>
> These are the overlapping disciplines listed.

Imaging informatics · Easy

29. In which discipline has imaging informatics evolved chiefly?

A Dermatology
B Cardiology
C Radiology
D Pathology

> **Answer 29: C**
> Radiology is the main home of the field.

Imaging informatics · Medium

30. Which specialities, besides radiology, are named as using medical imaging informatics?

A Pathology, cardiology, dermatology and surgery
B Only ophthalmology and optometry clinics
C Only psychiatry and psychology services
D Only forensic medicine and toxicology

> **Answer 30: A**
> Most clinical disciplines generate digital images.

4. Set 4 · Q31–40

Imaging informatics · Hard

31. Why does imaging informatics matter beyond radiology?

A Only radiologists generate any digital images
B Most clinical disciplines generate digital medical images as well
C Digital images are made only in research laboratories
D Clinical disciplines avoid digital images

> **Answer 31: B**
> Its growth affects health and medicine broadly.

Imaging informatics · Devil

32. Which list gives the scope of imaging informatics as set out in the lecture?

A Data acquisition, data deletion, data analysis and data pricing
B Data storage, data entry, data marketing and data sharing
C Data acquisition, data compression, data pricing and data deletion
D Data acquisition, data storage, data analysis and data sharing

> **Answer 32: D**
> These are the four scope elements.

Imaging informatics · Easy

33. What is the specific goal of imaging informatics?

A To increase the number of images taken per patient

B To replace radiologists with automated machines everywhere

C To reduce the purchase cost of scanners only

D To improve patient care through better, accessible imaging data

> **Answer 33: D**
> Patient care is the goal.

Imaging informatics · Medium

34. Which three significances of imaging informatics are listed?

A Improved diagnosis, treatment planning and research

B Improved catering, parking and cleaning

C Improved sales, advertising and branding

D Improved uniforms, signage and lighting

> **Answer 34: A**
> They help detect disease, plan treatment and support research.

History of imaging informatics · Hard

35. Which sequence of imaging milestones is correct?

A PACS in 1895, X-rays in the 1970s, then digital imaging in the 1980s

B X-rays in 1895, digital imaging in the 1970s, then PACS in the 1980s

C Digital imaging in 1895, PACS in the 1970s, then X-rays in the 1980s

D X-rays in the 1970s, PACS in the 1980s, then digital imaging in 1895

> **Answer 35: B**
> These are the lecture's early developments.

History of imaging informatics · Devil

36. A student says digital imaging began in the 1980s with PACS. What is the correction?

A Digital imaging began in 1895 with the discovery of X-rays

B PACS was developed in the 1970s before digital imaging

C Digital imaging came in the 1970s and PACS followed in the 1980s

D Both began in the 1990s, with the first hospital networks

> **Answer 36: C**
> PACS built on earlier digital technology.

History of imaging informatics · Easy

37. Who discovered X-rays in 1895?

A Willard Frank Libby

B Gilbert Newton Lewis

C Wilhelm Conrad Roentgen

D James Prescott Joule

> **Answer 37: C**
>
> Roentgen discovered X-rays.

History of imaging informatics · Medium

38. Imaging informatics developed around the same time as which other development?

A Electronic health records

B The telephone

C The printing press

D Antibiotics

> **Answer 38: A**
>
> Both aimed to improve efficiency and reliability of services.

Imaging informatics · Hard

39. Which two tools work together to help ensure the accuracy of medical imaging?

A Film darkrooms and manual chemical developers

B Data mining of databases and computer-aided diagnostics

C Fax machines and handwritten paper referrals

D Light boxes and printed anatomy wall charts

> **Answer 39: B**
>
> They support accurate image analysis.

Imaging informatics · Devil

40. What was SIIM formerly called?

A The Society for Medical Imaging Technologists

B The Society for Digital Radiography Education

C The Society for Radiology Information Research

D The Society for Computer Applications in Radiology

> **Answer 40: D**
>
> SIIM is the subspecialty society supporting imaging informatics, with global influence.

5. Set 5 · Q41–50

Roles in radiology · Easy

41. Who is responsible, among other things, for ensuring images reach the radiologist from the modalities?

A The scheduler

B The PACS administrator

C The billing officer

D The referring clinician

> **Answer 41: B**
>
> This is a key part of the PACS administrator's job.

Roles in radiology · Medium

42. Which of these is listed as part of a radiologist's workday that falls under imaging informatics?

A Servicing the X-ray tube and generator

B Mixing contrast media for injection

C Cleaning and restocking the scanner room

D Justifying an examination to a third-party payer

> **Answer 42: D**
>
> Communication tasks like this fall under informatics.

Roles in radiology · Hard

43. What does the lecture say about image interpretation in the radiologist's work?

A It may be the core of the value, but it is only one element of the job

B It is the only task that a radiologist ever performs

C It is unrelated to informatics and its tools

D It is performed by the PACS administrator alone

> **Answer 43: A**
>
> Informatics supports many other tasks too.

Roles in radiology · Devil

44. Why are all practising radiologists affected by informatics, even in private practice?

A Only academic radiologists use computers in practice

B Informatics is optional for those in private practice

C PACS and speech recognition are becoming ubiquitous in practice

D Vendors choose software without consulting radiologists

> **Answer 44: C**
>
> They must understand the merits of different technologies.

Roles in radiology · Easy

45. Which personnel need tools to give them complete patient histories and document their interventions efficiently?

A Radiologic technologists

B Radiologic nurses

C PACS administrators

D Billing personnel

> **Answer 45: B**
>
> The lecture links these needs to nurses.

Roles in radiology · Medium

46. Which personnel need communication tools and infrastructure to correct image quality problems?

A Schedulers

B Billing personnel

C Radiologic technologists

D Referring clinicians

> **Answer 46: C**
>
> They must perform their jobs efficiently and fix quality problems.

Roles in radiology · Hard

47. Why do schedulers and billing personnel benefit from informatics?

A It lets them interpret the images directly themselves

B It removes the need for patient histories in requests

C It replaces the PACS administrator's role entirely

D It coordinates clinician and radiologist on the reason for the exam

> **Answer 47: D**
>
> A clear reason supports scheduling and payment.

Roles in radiology · Devil

48. Which pairing of personnel and need is correct?

A PACS administrator: routing images to radiologists; nurses: histories and documentation

B PACS administrator: complete histories; nurses: routing of images

C Technologists: billing coordination; schedulers: image quality correction

D Billing staff: image routing; radiologists: scheduling

> **Answer 48: A**
>
> It matches the lecture's descriptions.

Components of imaging informatics · Easy

49. What are ontologies in imaging informatics?

A The basic communications lexicons

B The scanners used in the department

C The patient waiting lists

D The imaging contrast agents

> **Answer 49: A**
>
> They provide common terms for communication.

Components of imaging informatics · Medium

50. What do standards provide in imaging informatics?

A A published list of approved software vendors

B A yearly schedule for staff training sessions

C A pathway to ensure systems can interoperate

D A method for pricing imaging examinations

> **Answer 50: C**
>
> Systems must exchange information reliably.

6. Set 6 · Q51–60

Components of imaging informatics · Hard

51. Which pairing of component and role is correct?

A Computers and networking: the lexicon; PACS infrastructure: interoperability

B Ontologies: the image archive; standards: the information highway

C Standards: image display; ontologies: computer networking

D Computers and networking: the information highway; PACS: distribution, analysis and archive

> **Answer 51: D**
>
> It matches the lecture's descriptions.

Components of imaging informatics · Devil

52. Which description fits the lifecycle of a radiology exam in the lecture?

A From image acquisition to image deletion only, without a report

B From the initial order to report distribution and action by the referring physician

C From billing to payment only, without any imaging steps

D From patient registration to discharge only, across the hospital

> **Answer 52: B**
>
> It shows the infrastructure needed for patient-centric care.

Imaging modalities · Easy

53. Which modality uses X-rays to visualise bones and detect fractures?

A Ultrasound

B Magnetic resonance imaging

C Nuclear medicine

D X-ray radiography

> **Answer 53: D**
>
> It is commonly used for bones, infections and pneumonia.

Imaging modalities · Medium

54. Which modality uses strong magnetic fields and radio waves to generate images?

A Computed tomography

B Magnetic resonance imaging

C Mammography

D Fluoroscopy

> **Answer 54: B**
>
> It aligns hydrogen atoms and disturbs them with radio waves.

Imaging modalities · Hard

55. A clinician needs detailed images of the spinal cord and brain. Which modality is ideal?

A Magnetic resonance imaging, which images soft tissues in detail

B Plain X-ray radiography, which shows soft tissue best

C Mammography, which images the nervous system

D Fluoroscopy, which images only the skeleton

> **Answer 55: A**
>
> MRI is ideal for the brain, spinal cord, muscles and joints.

Imaging modalities · Devil

56. A patient needs real-time moving images to guide a catheter insertion. Which modality is used?

A Mammography, using low-dose X-rays

B Ultrasound with a static image only

C Fluoroscopy, using continuous X-ray beams

D Nuclear medicine, using a single scan

> **Answer 56: C**
>
> It gives real-time moving images of the interior.

Imaging modalities · Easy

57. Which modality is commonly used to monitor fetal development in obstetrics?

A Computed tomography

B Mammography

C Nuclear medicine

D Ultrasound

> **Answer 57: D**
>
> It uses high-frequency sound waves.

Imaging modalities · Medium

58. Which modality combines X-ray images from different angles into cross-sectional slices?

A Ultrasound

B Fluoroscopy

C Computed tomography

D Magnetic resonance imaging

> **Answer 58: C**
>
> Slices can be reconstructed into 3D images.

Imaging modalities · Hard

59. Which modality uses small amounts of radiotracers that emit gamma rays?

A Nuclear medicine (PET and SPECT)

B Mammography of the breast

C Ultrasound of soft tissue

D Plain X-ray radiography of bones

> **Answer 59: A**
>
> Special cameras detect the gamma rays.

Imaging modalities · Devil

60. Which pairing of modality and principle is correct?

A Ultrasound: radio waves; MRI: X-rays from several angles

B Ultrasound: sound waves; nuclear medicine: radiotracers emitting gamma rays

C CT: sound waves; fluoroscopy: magnetic fields and radio waves

D Mammography: gamma rays; MRI: sound waves bounced from organs

> **Answer 60: B**
>
> Both match the lecture.

7. Set 7 · Q61–70

Imaging modalities · Easy

61. X-ray radiography is commonly used to diagnose which pair of conditions?

A Pneumonia and arthritis

B Brain tumours and strokes only

C Fetal anomalies and twin pregnancies

D Thyroid disease and diabetes

> **Answer 61: A**
>
> It also visualises bones and detects fractures and infections.

Imaging modalities · Medium

62. On what principle does X-ray radiography create images?

A Tissues emit gamma rays after an injection

B Different tissues absorb X-rays at varying rates

C Tissues reflect high-frequency sound

D Tissues align hydrogen atoms in a magnetic field

> **Answer 62: B**
>
> Varying absorption creates contrast.

Imaging modalities · Hard

63. Which statement about X-ray imaging is correct?

A X-rays are high-frequency sound waves reflected from tissues

B X-rays are radio waves that disturb hydrogen atoms

C X-rays are electromagnetic radiation that form images from varying absorption

D X-rays are gamma rays emitted by radiotracers inside the body

> **Answer 63: C**
>
> This is the principle in the lecture.

Imaging modalities · Devil

64. How does CT differ from a plain X-ray examination?

A CT uses high-frequency sound waves instead of X-rays

B CT uses strong magnetic fields instead of X-rays

C CT produces only one flat projection of the body

D CT combines many X-ray images from several angles into slices

> **Answer 64: D**
>
> The slices can be reconstructed into 3D images.

Imaging modalities · Easy

65. What does CT stand for?

A Cellular Tracing

B Contrast Testing

C Cardiac Transmission

D Computed Tomography

> **Answer 65: D**
> It is a tomographic technique using X-rays.

Imaging modalities · Medium

66. CT is used for diagnosing which of these?

A Only simple fractures of the wrist bone

B Only monitoring of fetal growth in pregnancy

C Cancers, cardiovascular diseases and internal injuries

D Only routine breast cancer screening tests

> **Answer 66: C**
> CT gives detail on organs, bones and tissues.

Imaging modalities · Hard

67. What kind of information does CT provide, according to the lecture?

A Detailed views of internal organs, bones and tissues

B Only the surface temperature of the skin

C Only the electrical activity of the heart

D Only the blood group of the patient

> **Answer 67: A**
> It shows internal anatomy in slices.

Imaging modalities · Devil

68. Which set of applications matches MRI in the lecture?

A Pneumonia, fractures and arthritis only

B Neurological disorders, musculoskeletal injuries and tumours

C Fetal development, heart function and liver evaluation

D Catheter guidance, stent placement and biopsy

> **Answer 68: B**
> MRI is ideal for soft tissues.

Imaging modalities · Easy

69. MRI is ideal for imaging which type of tissue?

A Only dense bone
B Only air-filled lung
C Only dental enamel
D Soft tissue

> **Answer 69: D**
> Examples are brain, spinal cord, muscles and joints.

Imaging modalities · Medium

70. What does the strong magnetic field do in MRI?

A It aligns hydrogen atoms in the body
B It makes the body radioactive
C It heats the skin to boiling
D It converts sound into images

> **Answer 70: A**
> Radio waves then disturb the alignment.

8. Set 8 · Q71–80

Imaging modalities · Hard

71. What do the radio waves do in MRI?

A They deliver a radioactive tracer to tissues to be imaged
B They bounce off tissues to form echoes for display
C They disturb hydrogen alignment, producing signals for images
D They provide a continuous X-ray beam through the body

> **Answer 71: C**
> The signals form the final image.

Imaging modalities · Devil

72. Which statement correctly describes ultrasound?

A Gamma rays from radiotracers are captured by special cameras
B Sound waves enter the body, bounce off tissues and are captured as images
C X-rays from many angles are combined into slices
D Strong magnets align hydrogen atoms in the body

> **Answer 72: B**
> Echoes form the image.

Imaging modalities · Easy

73. How does ultrasound create an image?

A X-rays are absorbed by tissues

B Radio waves are emitted by hydrogen atoms

C Gamma rays are emitted by radiotracers

D Sound waves bounce off tissues and are captured

> **Answer 73: D**
>
> Echoes are converted into images.

Imaging modalities · Medium

74. Besides obstetrics, which areas use ultrasound, according to the lecture?

A Only neurological imaging of the brain and spinal cord

B Heart function in cardiology and abdominal organs like the liver

C Only skeletal imaging of fractures and joint damage

D Only breast screening and mammographic follow-up

> **Answer 74: B**
>
> These are the other applications named.

Imaging modalities · Hard

75. For which procedures is fluoroscopy often used?

A Detecting early breast cancer in screening clinics

B Monitoring fetal growth during routine pregnancy care

C Guiding catheters, visualising the GI tract and joint injections

D Mapping gamma-ray emissions from injected radiotracers

> **Answer 75: C**
>
> It gives real-time moving images during procedures.

Imaging modalities · Devil

76. Which statement about nuclear medicine is correct?

A It includes PET and SPECT, with gamma rays detected by special cameras

B It includes PET and CT, with X-rays detected by films

C It uses strong magnets and radio waves

D It uses high-frequency sound waves bounced off organs

> **Answer 76: A**
>
> Radiotracers are introduced into the body.

Imaging modalities · Easy

77. What is mammography primarily used for?

A Assessing fetal development in pregnancy

B Guiding catheters in real time during procedures

C Early detection and diagnosis of breast cancer

D Imaging the spinal cord and nerve roots

> **Answer 77: C**
> It examines breast tissue.

Imaging modalities · Medium

78. What type of X-rays does mammography use?

A High-dose continuous beams only

B Low-dose X-rays

C Gamma rays from radiotracers

D Radio waves

> **Answer 78: B**
> It is a specialised X-ray technique.

Imaging modalities · Hard

79. Which abnormalities does mammography help identify?

A Fractures and joint damage in the skeleton

B Fetal heartbeat irregularities

C Brain tumours and strokes

D Tumours, cysts and other abnormalities in breast tissue

> **Answer 79: D**
> It is used for breast examination.

Interventional radiology · Devil

80. What is the main benefit of interventional radiology?

A It guides minimally invasive procedures, cutting open surgery

B It replaces image guidance with large open surgery

C It avoids using X-ray, CT, MRI and ultrasound

D It increases patient recovery time after surgery

> **Answer 80: A**
> Angioplasty, stent placement, tumour ablation and biopsy are examples.