BunkPoint MOCK TEST

RRB Paramedical (Radiographer/X-Ray Technician) CBT 1 2026 Mock Test 1

Total Questions: **70** | Sections: **9**

Section overview Tap a section to jump to it

Section	Questions	Count
Human Anatomy And Physiology	1–4	4
General And Radiation Physics	5–16	12
X-Ray Equipment Accessories And Maintenance	17–27	11
Film And Image Processing	28–34	7
Clinical Radiography Positioning	35–46	12
Contrast And Special Procedures	47–49	3
Modern Imaging Modalities	50–60	11
Radiation Safety And Quality Control	61–67	7
Patient Care Ethics And Emergencies	68–70	3

Human Anatomy And Physiology

Q.1–4 | 4 questions

Q.1 Which of the following is NOT a tarsal bone?

(A) Navicular **(B)** Cuboid **(C)** Talus **(D)** Patella

Q.2 The double-layered serous membrane that covers each lung and lines the thoracic cavity is the

(A) peritoneum **(B)** mediastinum **(C)** pleura **(D)** pericardium

Q.3 Which site is the usual third (lowest) normal constriction of the ureter, where calculi often lodge?

(A) Crossing of the iliac vessels at the pelvic brim

(B) Vesicoureteric junction at the bladder wall

(C) Base of the renal pyramids at the calyces

(D) Pelviureteric junction at the renal pelvis

Q.4 The hip joint is classified as which type of synovial joint?

(A) Ball and socket
(B) Hinge
(C) Saddle
(D) Pivot

General And Radiation Physics

Q.5–16 | 12 questions

Q.5 Which statement about X-rays and visible light travelling in a vacuum is correct?

(A) Both travel at the same speed, about 3×10^8 m/s
(B) Visible light travels faster because its wavelength is longer
(C) X-rays travel slower because their wavelength is shorter
(D) X-rays travel faster because their photons carry more energy

Q.6 A kVp waveform with a ripple of about 100% is produced by which type of generator output?

(A) High-frequency
(B) Single-phase, full-wave rectified
(C) Three-phase, six-pulse
(D) Three-phase, twelve-pulse

Q.7 Which quantity and SI unit pair is correctly matched?

(A) Exposure in air: gray per kilogram
(B) Absorbed dose: sievert
(C) Equivalent dose: gray
(D) Activity: becquerel

Q.8 Increasing the filament current of an X-ray tube mainly increases the

(A) penetrating power of the X-ray beam produced
(B) minimum wavelength of the emitted X-ray beam
(C) number of electrons emitted, so the mA rises
(D) energy of each electron striking the anode

Q.9 As the Compton scattering angle increases from 0° to 180°, the energy of the scattered photon

(A) increases, and is highest for backscatter
(B) stays unchanged, but its direction reverses
(C) stays unchanged at each scattering angle
(D) decreases, and is lowest for backscatter

Q.10 A circuit has a resistance of 20 Ω and carries a current of 5 A. The potential difference across it is

(A) 0.25 V **(B)** 25 V **(C)** 100 V **(D)** 4 V

Q.11 Which single change best reduces the scatter radiation reaching the image receptor?

(A) Raising kVp with the field size unchanged

(B) Collimating to the smallest practical field

(C) Opening to a larger field with a lower mAs

(D) Reducing the source-to-image distance slightly

Q.12 In the diagnostic X-ray beam from a tungsten target, most photons are produced by

(A) bremsstrahlung interactions with target nuclei

(B) K-shell characteristic transitions in tungsten

(C) pair production events in the anode metal

(D) photoelectric absorption in the tungsten target

Q.13 The mass number of an atom is equal to the number of

(A) protons plus neutrons **(B)** protons plus electrons

(C) neutrons plus electrons **(D)** protons alone

Q.14 Reducing the anode angle of an X-ray tube from 15° to 7° will

(A) reduce the heel effect while widening the field coverage

(B) increase the heel effect and reduce the field covered

(C) increase the effective focal spot at the same actual size

(D) decrease the heel effect and increase the field covered

Q.15 An alpha particle is identical to

(A) a high-speed electron emitted from the nucleus

(B) a hydrogen nucleus carrying one neutron

(C) an electromagnetic photon emitted from the nucleus

(D) a helium nucleus of two protons and two neutrons

Q.16 A radiograph taken at 60 kVp and 20 mAs must be repeated at 69 kVp with the same receptor exposure. Using the 15% rule, the new mAs is

(A) 40 mAs **(B)** 5 mAs **(C)** 10 mAs **(D)** 20 mAs

X-Ray Equipment Accessories And Maintenance

Q.17–27 | 11 questions

Q.17 The detective quantum efficiency (DQE) of a digital detector describes how well it

(A) shortens the read-out time needed for each image

(B) preserves signal-to-noise ratio from input to output

(C) tolerates the widest range of incident exposures

(D) resolves closely spaced line pairs in each millimetre

Q.18 A star test pattern is used in X-ray quality control to evaluate the

(A) alignment of the light and X-ray fields **(B)** contact between the screen and the film

(C) accuracy of the tube voltage setting **(D)** size and blur of the X-ray focal spot

Q.19 The focusing cup of the cathode is held at a negative charge in order to

(A) step up the voltage applied across the whole tube

(B) heat the filament up to thermionic emission temperature

(C) focus the electrons into a narrow beam on the target

(D) carry heat away from the target to the housing

Q.20 In a radiographic cassette, the compressible foam layer is used to

(A) keep the screens in close contact with the film

(B) absorb scatter radiation arising behind the film

(C) stop light leaking in around the cassette edges

(D) raise the speed of the phosphor in the screens

Q.21 Why is the oil level in the X-ray tube housing checked during routine maintenance?

(A) Oil lubricates the rotating anode bearings inside the vacuum envelope

(B) Oil gives electrical insulation and removes heat from the insert

(C) Oil prevents thermionic emission from the anode surface

(D) Oil supplies extra electrons to the heated filament coil

Q.22 Intraoral dental X-ray units usually operate at about

(A) 40 kVp with a tungsten target and filtration

(B) 120 to 140 kVp with long exposure times

(C) 60 to 70 kVp with very short exposure times

(D) 20 to 30 kVp with a molybdenum target

Q.23 A focused grid must be used within a stated range of

(A) source-to-image distance **(B)** film speed

(C) tube voltage (kVp) **(D)** patient thickness

Q.24 The generally accepted tolerance between the light field and the X-ray field edges is within

(A) 0.5% of the source-to-image distance **(B)** 10% of the source-to-image distance

(C) 5% of the source-to-image distance **(D)** 2% of the source-to-image distance

Q.25 In a scintillation detector, the photomultiplier tube converts

(A) gamma rays into ion pairs within a gas

(B) electrical pulses into a final digital image

(C) light into an amplified electrical signal

(D) X-ray photons directly into visible light

Q.26 An exposure of 80 kVp, 200 mA and 0.5 s is made on a three-phase six-pulse generator (factor 1.35). The heat units produced are

(A) 16,000 HU **(B)** 8,000 HU **(C)** 5,926 HU **(D)** 10,800 HU

Q.27 Which statement about automatic exposure control (AEC) is correct?

(A) It raises the mA steadily as the exposure proceeds

(B) It ends the exposure at a preset detector signal

(C) It selects the kVp for the body part automatically

(D) It removes the need to centre over the sensor

Film And Image Processing

Q.28–34 | 7 questions

Q.28 Unexposed X-ray film should be stored

(A) on edge in a cool, dry store shielded from radiation

(B) flat in stacks near the processor for quick access

(C) on edge in a humid room to reduce static discharge

(D) stacked flat in a warm store close to the X-ray room

Q.29 If the developer temperature in manual processing is lower than recommended and the time is not changed, the radiograph will be

(A) normal in density but with increased graininess

(B) unchanged, since the fixer completes the image

(C) overdeveloped, with high density and heavy chemical fog

(D) underdeveloped, with low density and low contrast

Q.30 In a dry thermal laser imager, the image is produced by

(A) replenished developer and fixer held in a compact tank system

(B) a water wash that removes unexposed silver halide from the film

(C) heat development of photothermographic film, without chemicals

(D) laser burning of the image directly into a plain paper base

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Q.31 On the characteristic (H and D) curve, the straight-line portion represents

(A) the base plus fog density of the unexposed film

(B) the useful range where density rises with log exposure

(C) the region of solarisation at very high exposure levels

(D) the saturation of the film at maximum density

Q.32 Larger silver halide crystals in a film emulsion give

(A) higher film speed but lower image sharpness

(B) lower film speed with a wider exposure latitude

(C) higher film speed with improved resolution

(D) lower film speed with improved sharpness

Q.33 A darkroom needs good ventilation chiefly to

(A) raise the film speed during cassette loading

(B) remove chemical fumes and control humidity

(C) block stray radiation from the X-ray room

(D) make the safelight illumination much brighter

Q.34 In digital radiography, an image histogram displays

(A) the speed class of the digital detector in use

(B) the physical layout of the detector elements

(C) the running record of exposures given to each patient

(D) the distribution of pixel values in the image

Clinical Radiography Positioning

Q.35–46 | 12 questions

Q.35 On an AP pelvis radiograph, correct positioning without rotation is shown when

(A) the symphysis pubis lies lateral to the coccyx

(B) the right ASIS is closer to the tabletop than the left

(C) both ASISs lie the same distance from the tabletop

(D) the feet are in different degrees of eversion

Q.36 In the AP open-mouth cervical projection, the mouth is opened wide so that

(A) the teeth and skull base do not cover the dens

(B) the spinal canal is opened for contrast filling

(C) the sella turcica moves into the beam path

(D) the thyroid dose to the patient is lowered

Q.37 The lumbosacral junction shown in a lateral L5-S1 view lies between

(A) the fifth lumbar vertebra and the sacrum

(B) the fourth and fifth lumbar vertebrae

(C) the sacrum and the coccyx

(D) the sacrum and the ilium

Q.38 Acromioclavicular (AC) joint radiographs are often taken erect with weights held in both hands to

(A) lower the exposure needed for the shoulder

(B) prevent rotation of the thorax during exposure

(C) reduce the object-image distance of the clavicle

(D) show joint separation caused by ligament injury

Q.39 The usual central ray centring point for a PA oblique projection of the hand is the

(A) base of the first metacarpal

(B) third metacarpophalangeal joint

(C) centre of the carpus

(D) fifth proximal interphalangeal joint

Q.40 An erect abdominal radiograph is requested for suspected perforation. The patient should stay upright for a few minutes beforehand so that

(A) bowel peristalsis can settle down and be suppressed

(B) bowel contents can empty fully into the rectum

(C) free gas can rise to lie beneath the diaphragm

(D) barium can settle in the dependent bowel loops

Q.41 In an AP lumbar spine projection, flexing the hips and knees mainly helps to

(A) increase the object-image distance of the vertebrae

(B) prevent movement of the pelvis during exposure

(C) increase the lordosis to open the disc spaces

(D) flatten the lumbar curve and bring the spine closer

Q.42 The sacroiliac joints are best shown in oblique projections because they lie

(A) obliquely, at roughly 30° to the coronal plane

(B) exactly parallel to the coronal plane of the body

(C) directly in the median sagittal plane of the pelvis

(D) at right angles to the vertebral column axis

Q.43 Temporomandibular joint radiographs are commonly taken with the mouth open and closed to

(A) demonstrate the mastoid air cells in profile

(B) separate the zygomatic arch from the mandible

(C) show the condyle moving within the fossa

(D) lower the radiation dose to the eye lens

Q.44 A lateral projection of the elbow is performed with the elbow flexed to about

(A) 120° **(B)** 90° **(C)** 45° **(D)** 30°

Q.45 In a Caldwell PA axial projection of the skull, with 15° caudal angulation, the petrous ridges are seen

(A) in the lower third of the orbits **(B)** superimposed on the frontal sinuses

(C) filling the whole of the orbits **(D)** above the superior orbital margins

Q.46 A correct axial (plantodorsal) calcaneum radiograph shows

(A) the talar dome and the whole ankle mortise

(B) the cuboid and the base of the fifth metatarsal

(C) the navicular and the medial cuneiform bone

(D) the sustentaculum tali and the subtalar joint

Contrast And Special Procedures

Q.47–49 | 3 questions

Q.47 A patient develops widespread urticaria, wheeze and low blood pressure minutes after intravenous contrast. The first-line drug is

(A) an oral antihistamine tablet by mouth **(B)** intramuscular adrenaline (epinephrine)

(C) sublingual glyceryl trinitrate spray **(D)** intravenous frusemide (furosemide) bolus

Q.48 In a double-contrast barium meal, the effervescent granules are given to

(A) reduce the viscosity of the barium **(B)** delay gastric emptying

(C) produce gas that distends the stomach **(D)** neutralise the barium after the study

Q.49 Before a barium enema examination, the patient is usually advised to

(A) go without fluids for the whole of the previous three days

(B) eat a heavy fatty meal just before the examination

(C) avoid laxatives and eat a high-fibre diet beforehand

(D) take a bowel preparation to clear the colon of faeces

Modern Imaging Modalities

Q.50–60 | 11 questions

Q.50 Chemical shift artifact in MRI arises because

(A) metal implants distort the local magnetic field

(B) fat and water protons precess at different frequencies

(C) signal wraps round when the field of view is set too small

(D) the patient moves during the whole of the acquisition

Q.51 Continuous helical CT scanning became possible mainly because of

(A) a translate-rotate motion of a narrow pencil beam

(B) longer exposure times at higher patient dose

(C) slip rings that allow continuous gantry rotation

(D) a single large crystal replacing the detector array

Q.52 In Doppler ultrasound, the frequency shift is greatest when the angle between the beam and the flow direction is

(A) close to 0°, parallel to the flow

(B) close to 60° to the flow direction

(C) close to 45° to the flow direction

(D) exactly 90°, perpendicular to the flow

Q.53 Which tissue has a CT number closest to −1000 HU?

(A) Pure water

(B) Subcutaneous fat

(C) Compact cortical bone

(D) Air inside the trachea

Q.54 In DEXA scanning, the sites most commonly measured to assess osteoporosis are

(A) the ankle and clavicle

(B) the skull and mandible

(C) the lumbar spine and proximal femur

(D) the wrist and ribs

Q.55 The last-image-hold feature in digital fluoroscopy is useful because it

(A) converts the stored image to film automatically

(B) shows the final frame without extra exposure

(C) removes the need for beam collimation entirely

(D) increases the exposure rate during the study

Q.56 Raising the frequency of an ultrasound transducer generally

(A) improves axial resolution but cuts penetration

(B) improves both axial resolution and the penetration

(C) reduces both axial resolution and penetration depth

(D) improves penetration but reduces axial resolution

Q.57 Which MRI safety item most clearly prevents a patient from entering the scanner room?

(A) A cotton hospital gown worn without fasteners

(B) A cardiac pacemaker that is not MR-conditional

(C) A paper consent form held in the patient's hand

(D) A clear plastic retainer for the front teeth

Q.58 In digital subtraction angiography, the mask image is

(A) a post-contrast image added to the later frames

(B) a lead filter placed over the image intensifier

(C) the final image displayed after edge enhancement is applied

(D) a pre-contrast image subtracted from later frames

Q.59 Narrowing the CT window width will

(A) raise the displayed contrast of similar tissues

(B) reduce the number of detectors required per scan

(C) increase the reconstructed slice thickness used

(D) lower the radiation dose given to the patient

Q.60 DICOM is a standard used for

(A) measuring the radiation dose from the tube housing

(B) calibrating the output of the X-ray tube head

(C) storing and sending medical images and related data

(D) tracking patient waiting times in the whole department

Radiation Safety And Quality Control

Q.61–67 | 7 questions

Q.61 The ICRP occupational effective dose limit, averaged over five years, is

(A) 1 mSv per year **(B)** 5 mSv per year

(C) 20 mSv per year **(D)** 50 mSv per year

Q.62 Most biological damage from diagnostic X-rays is caused by

(A) thermal heating of the irradiated cells in tissue

(B) photon absorption within the cell nucleus alone

(C) direct ionisation of the DNA by the incident photons

(D) indirect action through free radicals from water

Q.63 The half value layer of lead for a beam is 0.2 mm. The lead thickness needed to reduce the intensity to one-eighth is

(A) 0.6 mm **(B)** 0.4 mm **(C)** 1.6 mm **(D)** 0.8 mm

Q.64 A kVp test measures 86 kVp for a set value of 80 kVp. The percentage error is

(A) 6.98% **(B)** 7.5% **(C)** 0.75% **(D)** 6%

Q.65 Which change lowers the patient skin dose while keeping the receptor exposure the same?

(A) Lowering the kVp and raising the mAs value

(B) Raising the kVp and lowering the mAs

(C) Removing the added beam filtration

(D) Opening the collimators much wider

Q.66 According to Bergonie and Tribondeau, cells are most radiosensitive when they are

(A) immature, fast dividing and poorly differentiated

(B) immature, non-dividing and highly specialised

(C) mature, slowly dividing and highly specialised

(D) mature, rapidly dividing and well differentiated cells

Q.67 Gonad shielding is most appropriate when the gonads lie

(A) well outside the collimated field, far from the primary beam

(B) directly over the pathology that is being examined

(C) close to the beam without hiding the area of interest

(D) in a wide uncollimated beam used for the whole study

Patient Care Ethics And Emergencies

Q.68–70 | 3 questions

Q.68 In adult CPR by a single rescuer, the recommended ratio of chest compressions to breaths is

(A) 10 : 1 **(B)** 15 : 2 **(C)** 5 : 1 **(D)** 30 : 2

Q.69 Before examining a woman of reproductive age, the radiographer should

(A) give a mild sedative to keep the patient steady

(B) take an extra projection as a routine precaution

(C) ask about the last menstrual period and pregnancy

(D) remove the lead collimation to speed up positioning

Q.70 A resting adult blood pressure of 150/95 mmHg is best described as

(A) hypovolaemic shock **(B)** hypertension

(C) hypotension **(D)** normal blood pressure

Get the Answers with Explanations

RRB Paramedical (Radiographer/X-Ray Technician) CBT 1 2026 Mock Test 1

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