Red tech official for Radiographer

DSSSB RADIOGRAPHER 2019

QUESTION PAPER WITH SOLUTION

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Disciple 1

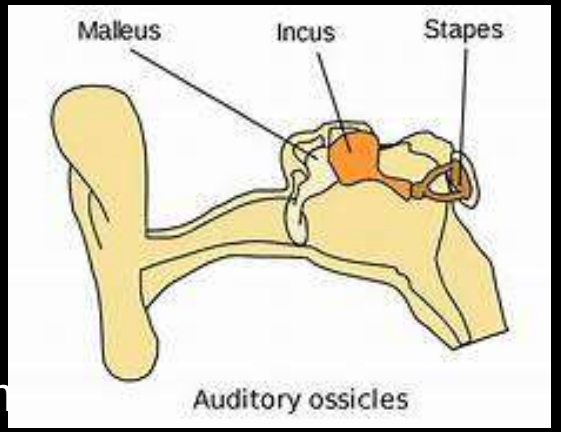
Q1. which of the following is NOT an ear ossicle ?

1. Incus

2. Malleus

3. Stapes

4. Tympanum



Answer :- 4.Ttympanum

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Q2. The most commonly fractured bone is the:

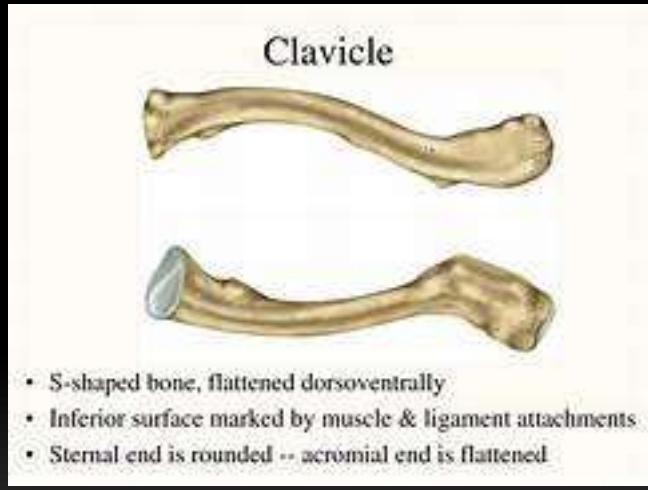
1. lunate

2. capitate

3. clavicle

4. scapula

Answer :- clavicle



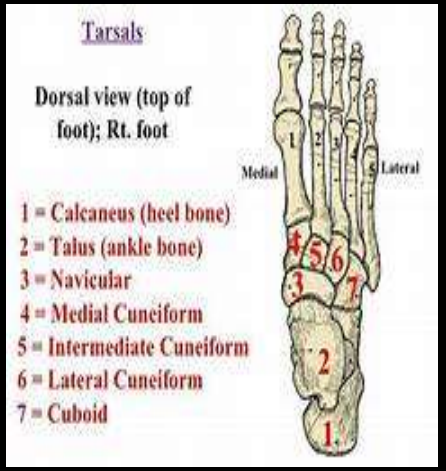
Q3. The tarsus is made up of _____ Tarsal bones.

1. 9

2. 7

3. 11

4. 5



Answer :- 2. 7

Q4. The most common used vein for venipuncture is the :

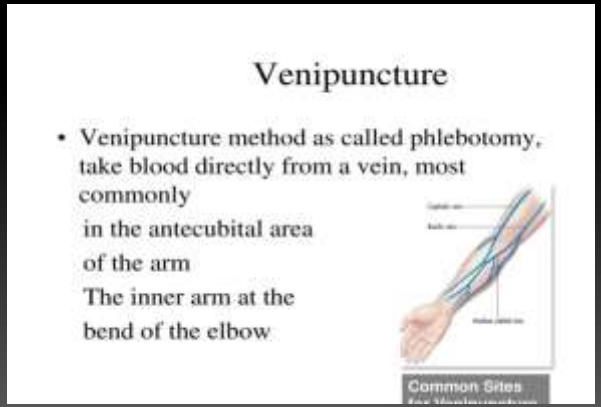
1. Dorsal metacarpel vein

2. Cephalic vein

3. Median cubital vein

4. Basilic vein

Answer :- 3. Median cubital vein



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Q5. The normal range of WBC is :

1. 4000 -11000 cells

2. 1000 – 3000 cells

3. 3700- 25000 cells

4. 1200 - 36000 cells

Answer :- 1. 4000 – 11000 cells

Q6. The largest artery of human body is :-

1. Aorta

2. Pulmonary artery

3. Renal artery

4. Brachial artery

Answer :- 1. Aorta

Q7. The length of pharynx is about :-

1. 15 – 20cm

2. 12 – 14cm

3. 9 – 11cm

4. 20 – 25cm

Answer :- 2. 12 – 14cm

Q8. The popiliteal artery is continuation of :-

1. Posterior tibial artery

2. Anterior tibial artery

3. Obturator artery

4. Femoral artery

Answer :- 4. Femoral artery

Q9. The longest rib in human body is :-

1. 5^{th} rib

2. 9^{th} rib

3. 7^{th} rib

4. 8^{th} rib

Answer :- 3. 7^{th} rib

Q10. The clavicle or collar bone is a long bone with _____ curve.

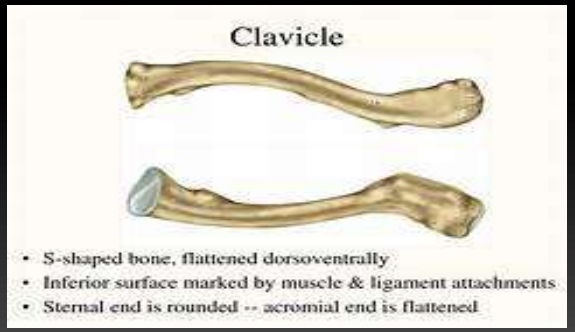
1. S - shaped

2. V - shaped

3. L – shaped

4. C - shaped

Answer :- 1. S - shaped



Q11. which part of duodenum is the commonest part of peptic ulcers?

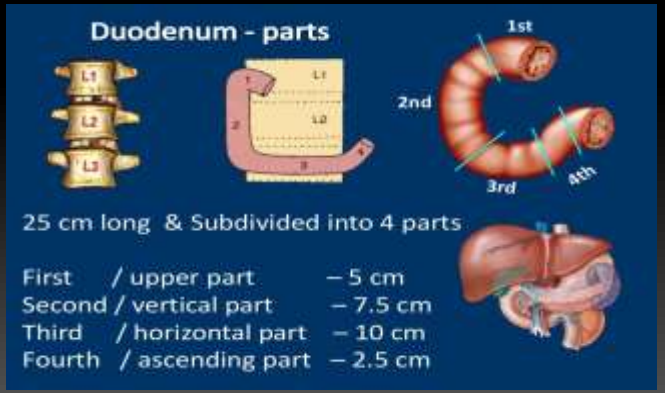
1. First part and second part

2. Third part

3. Second part

4. First part

Answer :- 4. First part



Q12. how many pairs of premolar are present in permanent teeth ?

1. 3

2. 2

3. 4

4. 5

Answer :- 2. 2 pairs of premolars

Q13. The length of female urethra is :-

1. 6cm

2. 8cm

3. 2cm

4. 4cm

Answer :- 4. 4cm

Q14. irregular heart rate is :-

1. Tachycardia

3. Bradycardia

2. Heart failure

4. Arrhythmia

Answer :- 4. Arrhythmia

Q15. The fundamental unit of life is the :-

1. cells

2. nucleus

3. Protein

4. Cytoplasm

Answer :- 1. cells

Q16. The power house of cell is the :-

1. Mitochondria

2. Cytoplasm

3. Centriole

4. Lysosome

Answer :- 1. Mitochondria

Q17. If the bone breaks in one place and no serious damage done to the surroundings tissue, then it is called :-

1. Open fracture

2. Closed fracture

3. Complicated fracture

4. Comminuted fracture

Answer :- 2. Closed fracture

Q18. The fluid portion of blood is :-

1. Interstitial fluid

2. Plasma

3. trans-cellular fluid

4. Lymph

Answer :- 2. Plasma

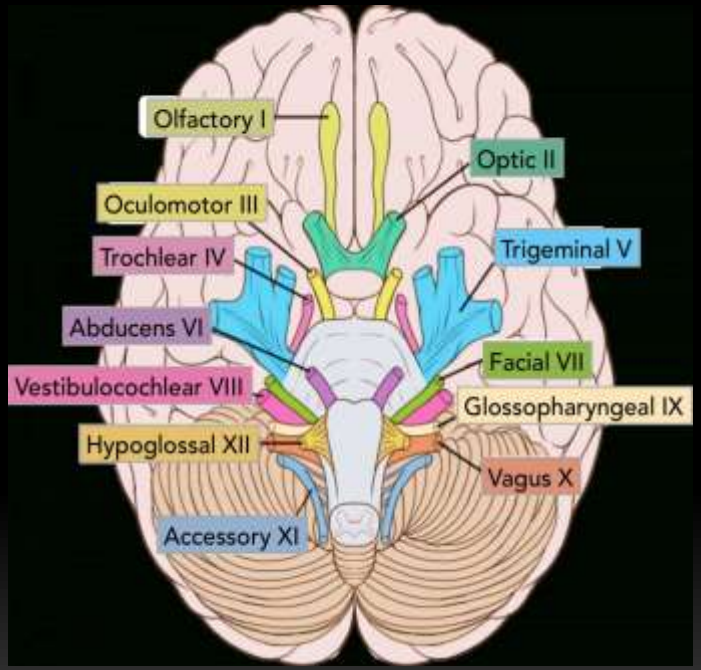
Q19. How many pairs of cranial nerves present in human body is :

1. 10

2. 12

3. 14

4. 16



Answer :- 2. 12

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Q20. The wrist has _____ bone :-

1. 8

2. 7

3. 6

4. 5

Answer :- 1. 8

Discipline 2

Q1. The normal life span of RBC :

1. 70 days
2. 120 days
3. 180 days
4. 10days

Answer :- 2. 120days , WBC is 2-4 days, blood platelets is 3-5 days

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Q2. What is half life of cobalt-60?

1. 5.26 years

2. 5.86 years

3. 5.76 years

4. 5.28 years

Answer :- 1. 5.26 years

Q3. The unit for the measurement of illuminating power of a source of light :

1. Candela

2. Ampere

3. Kelvin

4. Mole

Answer :- 1. Candela

Q4. Lack of oxygen at tissue level is called :

1. Apnea

3. Hypoxia

2. Hyperventilation

4. Dyspnea

Answer :- 3. Hypoxia

Q5. S.I. unit of power is :

1. Ampere

2. Watt

3. Centimetre

4. Candela

Answer :- 2. Watt

Q6. closure of AV valves causes :

1. Second heart sound

3. Third heart sound

2. Fourth heart sound

4. First heart sound

Answer :- 4. First heart sound

Q7. Which ray is not emitted from radioactive substances?

1. Beta

3. Alpha

2. Gamma

4. Delta

Answer :- 4. Delta

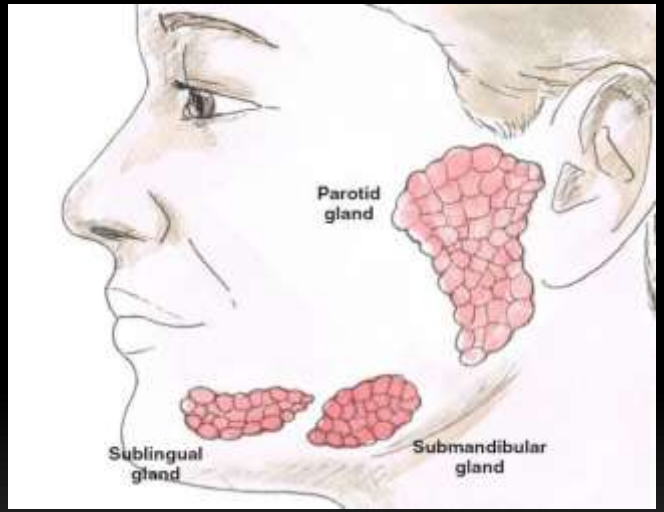
Q8. How many pairs of salivary glands are present in human body ?

1. 3

2. 2

3. 5

4. 4



Answer :- 1. 3 pairs of salivary glands

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Q9. Isotopes have _____

1. Same mass number

2. Same number of neutrons

3. Different atomic number

4. Same atomic number

Answer :- 4. Same atomic number

Q10. the volume of air in and out of the lungs during quiet respiration is :

1. Residual volume

2. Expiratory reserve volume

3. Inspiratory reserve volume

4. Tidal volume

Answer :- 4. Tidal volume

Q11. The normal heart rate in an adult is :

1. 90 – 110 bpm

2. 150 - 160 bpm

3. 120 – 140 bpm

4. 70 – 80 bpm

Answer :- 4. 70 – 80 bpm

Q12. Name the instrument used to measure potential difference between any two points of a conductor or any part of circuit.

1. voltmeter

2. Electromagnetic induction

3. Magnetic flux

4. Super conductor

Answer :- 1. voltmeter

Q13. The full form of ECG is :

1. Effective cardiogram

2. Electric cardiogram

3. Effective cardiograph

4. Electro cardiogram

Answer :- 4. Electro Cardiogram

Q14. X-rays were discovered in which year :

1. 1895

2. 1885

3. 1865

4. 1875

Answer :- 1. 1895

Q15. The basic fundamental unit of kidney is :

1. Brain

2. Neuron

3. Nephron

4. Lung

Answer :- 3. Nephron

Q16. which of the following is not fat soluble vitamin ?

1. Vitamin E

2. Vitamin D

3. Vitamin B

4. Vitamin A

Answer :- 3. Vitamin B

Q17. vasopressin is also called :

1. Prolactin

2. Oxytocin

3. Growth hormone

4. anti-diuretic hormone

Answer :- 4. anti-diuretic hormone

Q18. the first line of defence against bacterial infection is :

1. Lymphocyte
2. Monocyte
3. basophil
4. Neutrophil

Answer :- 4. Neutrophil

The first line of defence (or outside defence system) includes physical and chemical barriers that are always ready and prepared to defend the body from infection. These include your skin, tears, mucus, cilia, stomach acid, urine flow, 'friendly' bacteria and white blood cells called neutrophils

Q19. the deficiency of vitamin C causes ?

1. Rickets

2. Night blindness

3. Beriberi

4. Scurvy

Answer :- 4. Scurvy

Q20. Vitamin B1 is also known as :

1. Thiamine

2. Pyridoxine

3. Niacin

4. Riboflavin

Answer :- 1. Thiamine

Discipline 3

Q1. which material has high number of electrons per gram?

1. Hydrogen

2. Oxygen

3. Aluminium

4. Carbon

Answer :- 1. Hydrogen

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Q2. Which is the maximum number of electrons in L shell of an atom?

1. 2

2. 8

3. 26

4. 12

Answer :- 2. 8 (2, 8, 18,)

Q3. What is the symbol for tungsten ?

1. Hn

3. W

2. S

4. Tu

Answer :- 3. W is the symbol of tungsten

Q4. In case of chronic exposure, what is the threshold dose for cataract ?

1. 8Gy

2. 2Gy

3. 3Gy

4. 4Gy

Answer :- 1. 8Gy

Q5. which of the following is a powerful radiosensitizer ?

1. Hydrogen

3. Carbon

2. Oxygen

4. Nitrogen

Answer :- 2. Oxygen

Radiosensitizer is a substance, as a drug, that enhances the sensitivity of tissues or cells to radiation therapy.

Q6. 1 calorie of heart equal to :

1. 4.2 joules

2. 3.6 joules

3. 6.3 joules

4. 2.4 joules

Answer :- 1. 4.2 joules

Measurement of heat is done in calories. One calorie is the amount of energy required to raise one gram of water one degree Celsius. To measure heat, you divide the change in temperature of a sample of water by the mass of the water.

Q7. Half life of I-131 is :

1. 8 Days

2. 33.3 Days

3. 30 Days

4. 18 Days

Answer :- 1. 8 Days

Half-life *is the length of time it takes for half of the radioactive atoms of a specific radionuclide to decay. A good rule of thumb is that, after seven half-lives, you will have less than one percent of the original amount of radiation*

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Q8. The full form of ICRP is :

1. International continuous radioactive process

2. International commission on radiological process

3. International commission on radioactive process

4. International committee of radiological process

Answer :- 2. International commission on radiological process , founded in 1928 , Location – ottawa , onterio , canada

Q9. Absorbed dose expressed in units of :

1. Miles

2. Grays

3. Joule

4. Kilogram

Answer :- 2. Grays

Q10. Which radionuclide is frequently used to demonstrate the nature of radioactive decay ?

1. Cobalt 60

2. Strontium 90

3. Indium 116

4. Calcium 45

Answer :- 3. Indium 116

Q11. Which of the following method is NOT used to control radiation levels?

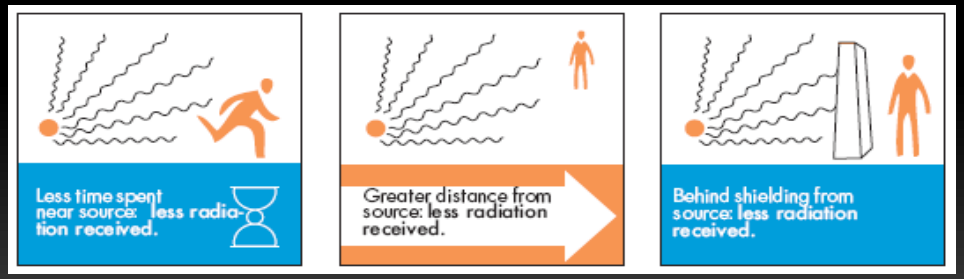
1. Calculation

2. Distance

3. Barrier

4. Time

Answer :- 1. Calculation



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Q12. How many rad are equal to one roentgen?

1. 0.576

2. 0.676

3. 0.786

4. 0.876

Answer :- 4. 0.876

One roentgen deposits 0.877 rad in dry air, 0.96 rad in soft tissue, or anywhere from 1 to more than 4 rad in bone depending on the beam energy.

Q13. The full form of ARSAC ?

1.Active source of Active committee

2. Administration of radiation source of Advisory committee

3. Active radiation substance Advisory committee

4. Administration of radioactive substances Advisory committee

Answer :- 4. Administration of radioactive substances Advisory committee
ARSAC advises the licensing authorities on applications from practitioners, employers and researchers who want to use radioactive substances on people.

Q14. Doppler in ultrasound is used to detect ?

1. Blood flow within arteries

2. Muscles lesions

3. Bone lesions

4. Skin lesions

Answer :- 1. Blood flow within arteries

A Doppler ultrasound is a noninvasive test that can be used to estimate the blood flow through your blood vessels by bouncing high-frequency sound waves (ultrasound) off circulating red blood cells.

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Q15. The radiation weighing factor for alpha particle is :

1. 5

2. 12

3. 20

4. 1

Type of radiation	*Weighting factor, w_R*
X-rays	1
gamma rays	1
beta particles	1
slow neutrons	5
fast neutrons	10
alpha particles	20

Answer :- 3. 20

The modifying factor used to calculate the equivalent dose from the average tissue or organ absorbed dose; the absorbed dose (expressed in rad or gray) is multiplied by the appropriate radiation weighting factor.

Q16. Gradient coils are used in :

1. MRI

2. Ct scan

3. USGs

4. X-rays

Answer :- 1. MRI

The main function of a gradient coil is to spatially modulate the main magnetic field in a predictable way, thereby causing the Larmor frequency of spins to vary as a function of position. This allows spatial encoding of the MR signal.

Q17. Distortion result from unequal magnification of different parts of:

1. Different object

2. Distant object

3. Same object

4. Close object

Answer :- 3. Same object

Q18. Genetic effects are referred to as :

1. Somatic effects

2. Early effects

3. Deterministic effects

4. Stochastic effects

Answer :- 4. Stochastic effects

Effects that occur by chance, generally occurring without a threshold level of dose, whose probability is proportional to the dose and whose severity is independent of the dose. In the context of radiation protection, the main stochastic effects are cancer and genetic effects.

Q19. scoliosis is an abnormality in the :

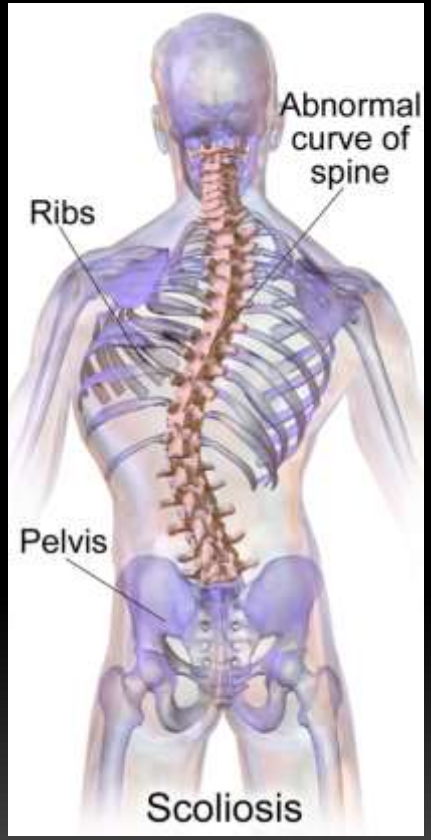
1. Eye

2. Femur

3. Skull

4. Spine

Answer :- 4. Spine



Q20. photo-electric effect directly proportional to :

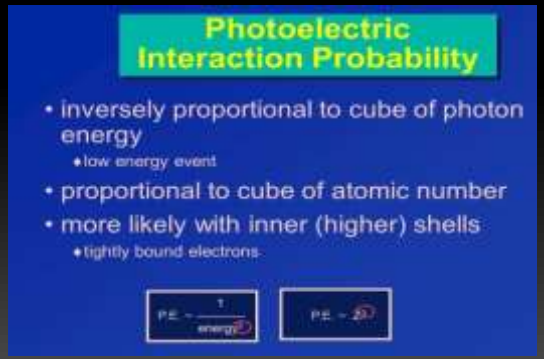
1. (Atomic number)^3

2. (Mass number)^2

3. (Atomic number)^2

4. (Mass number)^3

Answer :- 1. (Atomic number)^3



Q1. In interstitial implant the radioactive sources are directly inserted in the:

1. Tissue

2. Skin

3. Bone

4. Organ

Answer :- 1. Tissue

Q2. The full form of GSD is :

1. Gene source Development

2. Gene source dose

3. Genetically significant dose

4. Genetically significantly development

Answer :- 3. Genetically significant dose

Genetically significant dose

The genetically significant dose is that which, if received by every member of the population, would be expected to produce the same genetic injury to the population as do the actual doses received by the individuals irradiated.
thus, the genetically significant dose is the dose equivalent to the gonads weighted for the age and sex distribution in those members of the irradiated population expected to have offspring. The genetically significant dose is expressed in Sieverts (or rem).

Q3. The recommended effective radiation dose limit for occupational people is :

1. 500 mSv/year

3.150 mSv/year

2. 2 mSv/year

4. 20 mSv/year

Answer :- 4. 20 mSv/year

Occupational radiation safety limits		
Body area	Dose limit mSv/y	Time period
Whole body	20	Averaged over 5 years but maximum dose of 50 mSv in any single year
Lens of eye	150	In any calendar year
Extremities without lead apron	500	In any calendar year

Q4. The contrast used in brochography is :

1. Diagnosil acqueous

2. Iohexol

3. Barium sulphate

4. Urografin

Answer :- 1. Diagnosil acqueous

Q5. The radiation effect produced in exposed individual during their lifetime is called :

1. Fetal risk

2. Genetic risk

3. Somatic effect

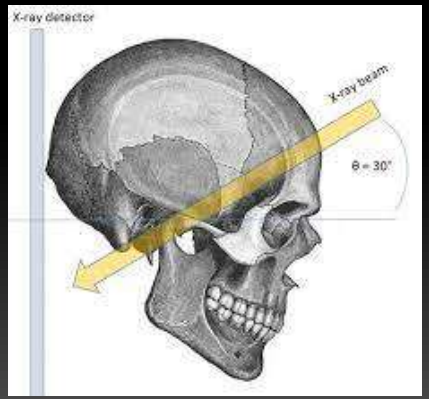
4. Deterministic effect

Answer :- 3. Somatic effect

Q6. Townes views is :

1. Frontal occipital 30º caudal view
2. Sella Turcica view of skull
3. Submentovertical view of skull
4. Optic foramina view of skull

Answer :- 1. Frontal occipital 30º caudal view



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Q7. What does PSP stands for ?

1. Portable sony PlayStation

2. Photomultiplier scanning plate

3. Photo stimulable phospher

4. Phospherscences stiumulated phopher

Answer :- 3. Photo stimulable phospher

Q8. Brachytherapy source of gold-198 is available in the form of :

1. Rods

2. Tubes

3. Seeds

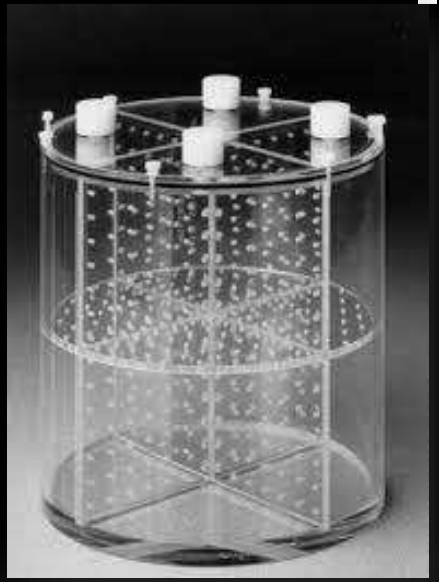
4. Wire

Answer :- 3. Seeds

Q9. The material which absorbs and scatter the radiation in the same way as tissue is :

1. Phantom

3. Accelerator



2. Electron beam

4. Bolus

Answer :- 1. phantom

medical imaging phantoms are objects used as stand-ins for human tissues to ensure that systems and methods for imaging the human body are operating correctly.

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Q10. Barium swallow is the radiography evaluation of the :

1. Stomach

2. Oesophagus

3. Small intestine

4. Large intestine

Answer :- 2. Oesophagus

Q11. The linear accelerator are capable of producing radiation energy greater than :

1. 3Mev

3. 4Mev

2. 4Mev

4. 1Mev

Answer :- 4. 1Mev

A linear accelerator, also referred to as LINAC, is a machine that aims radiation at cancer tumors with pinpoint accuracy, sparing nearby healthy tissue

Q12. The biggest contribution of terrestrial radiation is :

1. I-121

3. Rn-222

2. U-238

4. Ca-60

Answer :- 3. Rn-222 the portion of the natural background radiation that is emitted by naturally occurring radioactive materials, such as uranium, thorium, and radon in the earth.

Q13. The full form of AERB :

1. Atomic effect regulatory board

3. Atomic energy regulatory board

2. All emission regulatory board

4. Atomic emission rule board

Answer :- 3. Atomic energy regulatory board **Founded:** 15 November 1983, Mumbai,India .

Q14. Resolution of image are measured in :

1. Centimeter per second

2. Cycle per second

3. Lines per centimeter

4. Lines pairs per millimeter

Answer :- 4. Lines pairs per millimeter

Q15. The full form of SSD is :

1. Source of self distance

3. Source to skin distance

2. Self to skin distance

4.Self to source direction

Answer :- 3. Source to skin distance

Q16. TLD badge is :

1. Positron emitter

2. Electron emitter

3. Personal monitoring device of radiation

4. Gamma radiation meter

Answer :- 3. Personal monitoring device of radiation

Q17. Myelography is the term applied for radiologic examination of the :

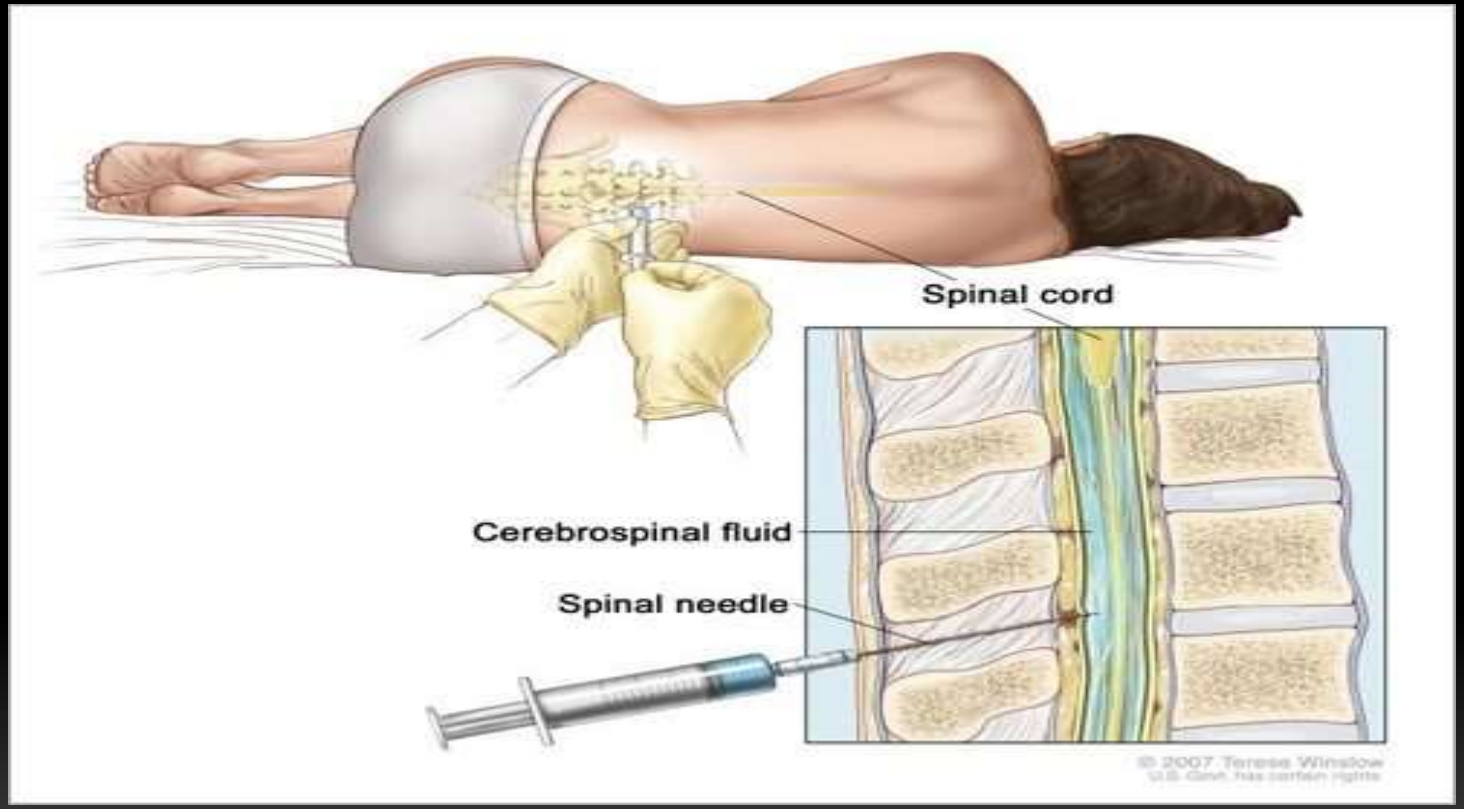
1. Brain

3. Spine

2. Gall bladder

4. Liver

Answer :- 3. Spine


Spinal cord
Cerebrospinal fluid
Spinal needle

Q18. In double contrast barium enema, which of the following injected rectally ?

1. Water and ionic contrast

2. Air and high density barium

3. Ionic contrast and liver

4. Water and barium

Answer :- 2. Air and high density barium

Some barium will remain in your intestine.Air is injected via the rectum in order to expand the large intestine, and more X-rays will be taken.

Q19. The breast cancer susceptibility gene is :

1. BRCA1

3. BRCA3

2. BRCA1 and BRCA2

4. BRCA2

Answer :- 2. BRCA1 and BRCA2. **BRCA1 (BReast CAncer gene 1) and BRCA2 (BReast CAncer gene 2) are genes that produce proteins that help repair damaged DNA. Everyone has two copies of each of these genes—one copy inherited from each parent**.

Q20. intracavitary therapy is mainly used for ?

1.Intestine

3. Cervix

2. Stomach

4. Lungs

Answer :- 3. cervix intracavitary therapy is reserved for tumors that are monocystic or have a large dominant cyst. The cavity is accessed using a catheter connected to a reservoir (such as an Ommaya reservoir), which can be placed using open, endoscopic, or stereotactic (frame-based or frameless) techniques.

Discipline 5

Q1. which of the following is a function of management?

1. Goal

3. Planning

2. Selecting

4. knowledge

Answer :- 3. Planning

Q2. which of the following is NOT a criterion for the classification of hospitals?

1.According to the duration of day

3. According to ownership

2. According to type of service provided

4.According to infrastructure

Answer :- 4.According to infrastructure

Q3. The x-rays produced at a potential below 20kVp is called :

1.Deep theraphy

3. Contact therapy

2. Chaoul therapy

4. Grenz rays therapy

Answer :-4. Grenz rays therapy [borders rays or bucky rays]

Grenz rays are a form of radiation, similar to ultraviolet radiation, x-rays and gamma rays. The difference is that grenz rays are produced at low kilovoltages giving them a very low penetration power. Ninety per cent of the rays are absorbed within the first 5 mm of skin (and 50% in the first mm), which means they do not penetrate beneath the dermis of the skin. Grenz rays appear to reduce Langerhans cell numbers, hence producing an anti-inflammatory effect. It is said to "calm down" inflammation of the skin.

Q4. MRSA (Methicillin-resistant Staphylococcus aureus) is a :

1.Bacterium

3. Protozoan

2. fungus

4. Virus

Answer :- ***1.Bacterium MRSA isa infection caused by a type of staph bacteria that's become resistant to many of the antibiotics used to treat ordinary staph infections.***

Q5. Which of the following is NOT contraindication for MRI ?

1. Patient with cardiac pacemaker

3. Patient with life support system

2.Patient with non-metallic implants

4.Patient with metallic prosthesis

Answer :- 2.Patient with non-metallic implants

Q6. The records management website maintained by the :

1. Data quality manager

2. Data protection officer

3.Operational health record manager

4.Health record manager

Answer :- 1. Data quality manager

Q7. stenvers view is for visualising for :

1. PNS

3. Mastoid bone

2. Petrous bone

4. Skull lateral

Answer :- 2. Petrous bone

Q8. steam sterilization was discovered in :

1. 1900

3. 1890

2. 1880

4. 1850

Answer :- 2. 1880

Q9. Who introduced the concept of diagnosis ,prognosis, physical examination and prescription ?

1.hippocrats

3. charaka

2. Newton

4. Babylonian

Answer :- 4. Babylonian

Q10. with regards patient in dilirium /confusion , which of the following should NOT be done ?

1. Avoid giving reassurance

3. Never leave them unsupervised

2. Protect them from harm

4. Speak in a calm voice

Answer :- 1. Avoid giving reassurance

Q11. which of the following is NOT a major principle of hospital management ?

1.Unity of command

3. Delegation of authority

2. Adjustment as necessary

4. Span of control

Answer :- 2. Adjustment as necassary

Q12. Wedge filter is also called :

1.Surface mould

3. Exposure rate constant

2. Beam modifying device

4. Source specification

Answer :- 2. Beam modifying device

Q13. Neonate is a term used to describe a baby:

1.Under one month

3. Requiring intensive care

2. Under one year

4. Under one week

Answer :- 1.Under one month

Q14. under which category of confidential records do hard drive embedded software, CDs and DVDs feature ?

1. B

3. C

2. D

4. A

Answer :- 2. D

Q15. Half life of Radium-226 is :

1. 17 days

3. 1622 years

2. 30 years

4. 2.7 days

Answer :- 3. 1622 years

Q16. Sharps including glass ampoules is disposed by means of :

1. Landfill

3. Incineration

2. Recycling

4. Sterilization

Answer :- 3. Incineration

Q17. A hospital require to check and understand the applicability of the standard clauses for the institution. In India, all hospital have been certified for :

1. ISO 9001

3. ISO 9003

2. ISO 9002

4. ISO 9004

Answer :- 2. ISO 9002

Q18. Which of the following is NOT a contraindiaction for intravenous urography ?

1. Renal failure

3. Pregnancy

2. Hypertension

4. Iodine sensitivity

Answer :- 2. Hypertension

Q19. The formation of blood clots in blood vessals is called:

1. Degeneration

3. Thrombosis

2. hyperplasia

4. Nacrosis

Answer :- 3. thrombosis

Q20. The maximum permissible radiation dose for occupationally exposed individual is :

1. 15 rem/year

3. 10 rem/year

2. 5 rem/year

4. 7 rem/year

Answer :- 2. 5 rem/year