

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
ANATOMY INCLUDING RADIOGRAPHIC ANATOMY
PAPER FIRST

[Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions

Draw suitable diagram wherever necessary

A : Short answer questions:

(7 x 9 = 63)

Write briefly on:

- Q. 1.** Boundaries, contents and applied anatomy of the femoral triangle
- Q. 2.** Anterior and posterior relations of the right kidney
- Q. 3.** Parts and blood supply of a long bone
- Q. 4.** Movements of eversion and inversion
- Q. 5.** Intrinsic muscles of the hand
- Q. 6.** Radial nerve injuries
- Q. 7.** Supports of the uterus
- Q. 8.** Interior of the right atrium
- Q. 9.** Shoulder joint- type of joint, bones forming it, factors stabilizing the joint and applied anatomy.

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
ANATOMY INCLUDING RADIOGRAPHIC ANATOMY
PAPER FIRST (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. Action of Popliteus is:
 - a. Locking of knee joint
 - b. Extension of knee joint
 - c. None of the other options
 - d. Unlocking of knee joint
2. Medial malleolus is formed by:
 - a. Fibula
 - b. Femur
 - c. Tibia
 - d. Hip bone
3. Injury to nerve to serratus anterior leads to :
 - a. Winging of scapula
 - b. Wrist drop
 - c. Frozen shoulder
 - d. Flexion of elbow
4. Posterior circumflex humeral artery is a branch of:
 - a. 1st part of axillary artery
 - b. 2nd part of axillary artery
 - c. 3rd part of axillary artery
 - d. Brachial artery
5. Movements of pronation and supination occur at :
 - a. Radioulnar joints
 - b. Wrist joint
 - c. Shoulder joint
 - d. Sternoclavicular joint
6. Portal vein is formed behind the:
 - a. Head of pancreas
 - b. Body of pancreas
 - c. Neck of pancreas
 - d. Tail of pancreas
7. Peyer's patches are present in :
 - a. Jejunum
 - b. Ileum
 - c. Duodenum
 - d. Colon
8. Left testicular vein drains into :
 - a. Inferior vena cava
 - b. Left renal vein
 - c. Right renal vein
 - d. Right internal iliac vein
9. The muscles of mastication are supplied by:-
 - a. Mandibular nerve
 - b. Trigeminal nerve
 - c. Facial nerve
 - d. Oculomotor nerve
10. The corpus callosum is made up of:
 - a. Projection fibres
 - b. Association fibres
 - c. Grey matter
 - d. Commissural fibres
11. The visual area corresponds to Brodmann's area number:
 - a. 3,1,2
 - b. 4
 - c. 17,18,19
 - d. 41,42
12. Upper motor neuron type of facial palsy presents as:
 - a. Paralysis of ipsilateral half of face
 - b. Paralysis of contralateral half of face
 - c. Paralysis of ipsilateral lower half of face
 - d. Paralysis of contralateral lower half of face
13. Which type of joint is the first carpometacarpal joint of the hand?
 - a. Saddle
 - b. Ellipsoid
 - c. Ball and socket
 - d. Hinge
14. Foot drop is caused due to injury to:
 - a. Deep peroneal nerve
 - b. Tibial nerve
 - c. Superficial peroneal nerve
 - d. Medial plantar nerve

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
PHYSIOLOGY AND BIO-PHYSICS
PAPER TWO

[Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions

Draw suitable diagram wherever necessary

A : Short answer questions:

(7 x 9 = 63)

Write briefly on:

- Q. 1.** Define erythropoiesis? How the regulation of erythropoiesis is brought about.
- Q. 2.** Define hemostasis? How clotting of blood take place inside the body?
- Q. 3.** Write briefly about the sequence of events at neuromuscular junction?
- Q. 4.** Write briefly about functions of thyroid hormone.
- Q. 5.** Describe briefly mechanism of swallowing.
- Q. 6.** Define cardiac output? How regulation of cardiac output is brought about.
- Q. 7.** Define synapse and clarify it.
- Q. 8.** Describe with help of diagram static lung volume and capacities.
- Q. 9.** Enumerate the differences between myelinated and nonmyelinated nerve fibre.

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013**PHYSIOLOGY AND BIO-PHYSICS****PAPER TWO (MCQ)****Time allotted for MCQ- 15 minutes****B : MCQs (Single response type):****(½ x 14= 7)**

Select the most appropriate answer and encircle the alphabet against it

1. For sodium potassium pump the coupling ratio is:
 - a. 1:1
 - b. 2:3
 - c. 3:2
 - d. 1:4
2. Approximately 90% osmolality of plasma is contributed by:
 - a. Plasma protein
 - b. Glucose
 - c. Sodium
 - d. Urea
3. Exocytosis refuses which ion?
 - a. Na^{++}
 - b. Ca^{++}
 - c. K^{+}
 - d. Mg^{++}
4. Eosinophilia occurs in all EXCEPT:
 - a. Stress
 - b. Urticaria
 - c. Allergic rhinitis
 - d. Worm infection
5. RBC maturation takes place in ----- days.
 - a. 3-5
 - b. 6-8
 - c. 10-14
 - d. 20-25
6. Most potent respiratory stimulant is:
 - a. Oxygen
 - b. Carbon dioxide
 - c. Hydrogen ion
 - d. K^{+} ion
7. 100 ml of arterial blood contain ----- of CO_2 :
 - a. 16 ml
 - b. 32 ml
 - c. 48 ml
 - d. 52 ml
8. Rate of filtration at any point along a capillary is determined by:
 - a. Mean capillary pressure
 - b. Colloidal osmotic pressure
 - c. Starling process
 - d. Filtration pressure
9. Hydrostatic and colloidal pressure in glomerular capillaries is:
 - a. 45 and 25 mmhg
 - b. 25 and 45 mmhg
 - c. 10 and 25 mmhg
 - d. 25 and 10 mmhg
10. All are menosynaptic reflexes EXCEPT:
 - a. Knee reflex
 - b. Biceps reflex
 - c. Ankle reflex
 - d. Abdominal reflex
11. Kinesthetic receptors are:
 - a. Free nerve ending
 - b. Pacinian capsule
 - c. Ruffini corpuscles
 - d. Corticel cells
12. Medial geniculate body is concerned with:
 - a. Hearing
 - b. Vision
 - c. Taste
 - d. Smell
13. Hormone secreted by hypothalamus:
 - a. GHIH
 - b. GH
 - c. LH
 - d. FSH
14. Substance net excreted via kidney by filtration alone is:
 - a. Glucose
 - b. Vitamin B_{12}
 - c. Mannitol
 - d. Sucrose

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
RADIATION PHYSICS
PAPER THREE

[Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions

Draw suitable diagram wherever necessary

A : Short answer questions:

(7 x 9 = 63)

Write briefly on

- Q. 1.** Define following quantities and write their units-
- a.** Radiation exposure
 - b.** Radiation dose equivalent
- Q. 2.** What is Ohm's law? Discuss various ways of its failure.
- Q. 3.** Define electromagnetic induction. What are the laws governing this phenomenon?
- Q. 4.** Describe the working of transformer and write about different types of transformers.
- Q. 5.** What is radioactivity? Explain radioactive decay law.
- Q. 6.** Describe various ways of heat transfer.
- Q. 7.** Write short notes on –
- a.** Ultrasound transducer
 - b.** Photo-electric absorption
- Q. 8.** Write in short about conductors, semiconductor and insulators with appropriate examples.
- Q. 9.** Write short notes on –
- a.** Wave-particle duality
 - b.** Mass-energy equivalence

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013**RADIATION PHYSICS****PAPER THREE (MCQ)****Time allotted for MCQ- 15 minutes****B : MCQs (Single response type):****(½ x 14= 7)**

Select the most appropriate answer and encircle the alphabet against it

1. Which one is a radiological quantity?
 - a. Electric charge
 - b. Exposure
 - c. Force
 - d. Temperature
2. Which Newton law is called “law of inertia”?
 - a. 1st law
 - b. 2nd law
 - c. 3rd law
 - d. 4th law
3. Ohm’s law relates
 - a. Force and accelerations
 - b. Electricity and magnetism
 - c. Power and current
4. Which of the following possess least resistance?
 - a. Conductors
 - b. Intrinsic semiconductors
 - c. Extrinsic semiconductors
 - d. Insulators
5. A rectifier converts –
 - a. Low voltage to high voltage
 - b. Series circuit to parallel circuit
 - c. Magnetism to electricity
 - d. Alternating current to direct current
6. Rad is the unit of
 - a. Radiation exposure
 - b. Radioactivity
 - c. Radiation dose
 - d. Dose equivalent
7. A step up transformer converts –
 - a. High voltage to low voltage
 - b. Low voltage to high voltage
 - c. Low current to high current
 - d. None of these
8. Radiation absorption is due to –
 - a. Photoelectric effect
 - b. Compton effect
 - c. Pair production
 - d. Photodisintegrations
9. Which atomic shell has highest binding energy?
 - a. K
 - b. L
 - c. M
 - d. N
10. A radionuclide emits –
 - a. X-rays
 - b. Gamma rays
 - c. Microwaves
 - d. Ultraviolet rays
11. In X-ray circuit, PN junction acts as a
 - a. Transformer
 - b. Rectifier
 - c. Amplifier
 - d. None of these
12. Suitable target in X-ray tube is –
 - a. Al
 - b. Cu
 - c. Ba
 - d. Pb
13. The perceived change in the frequency of sound due to relative motion between the source of sound and observer is called-
 - a. Piezoelectric effect
 - b. Compton effect
 - c. Edition effect
 - d. Doppler effect
14. Process of heat transfer in vacuum takes place by-
 - a. Conduction
 - b. Convection
 - c. Radiation
 - d. None of these

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
HOSPITAL ADMINISTRATION & PATIENT CARE
PAPER FOUR

[Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions

Draw suitable diagram wherever necessary

A : Short answer questions:

(7 x 9 = 63)

- Q. 1.** What procedure you will follow in the event of an accident?
- Q. 2.** How will you transport a patient from wheel chair to x-ray table? What is Australian lift?
- Q. 3.** How will you maintain the hygiene in the x-ray department?
- Q. 4.** What are the ethical and legal responsibilities of radiographer? Describe in brief.
- Q. 5.** What are the radiation hazards and write its protection measures.
- Q. 6.** What are the broad categories of drug used in x-ray department? Name them category wise.
- Q. 7.** What are the principles of abdominal preparation for urography? Describe the different types of purgatives briefly.
- Q. 8.** What is 10 days rule?
- Q. 9.** What are the precautions taken while working in the dark room?

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
HOSPITAL ADMINISTRATION & PATIENT CARE
PAPER FOUR (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. What is the oral cholecystography agent?
 - a. Telepaque
 - b. Gastrographyn
 - c. Iodine
 - d. Omnipaque
2. Disadvantage of ionic contrast media is that the molar concentration is:
 - a. High
 - b. Normal
 - c. Low
 - d. None of the above
3. Adverse reaction of contrast media depends on:
 - a. Osmolality
 - b. Chemotoxicity
 - c. Hypersensitivity
 - d. All of them
4. Injection of hydrocortisone is given to:
 - a. Increase BP
 - b. Reduce BP
 - c. Stop vomiting
 - d. None of the above
5. Cracks in lead apron is checked by:
 - a. Open & see
 - b. X-ray
 - c. Fluoroscopy
 - d. Sun light
6. The purgative are contraindicated in:
 - a. Patient with colostomy
 - b. Asthma
 - c. MI
 - d. Hypertension
7. Drug which is used to raise the blood pressure and increase cardiac output?
 - a. Adrenaline
 - b. Avil
 - c. Urographine
 - d. None of the above
8. Drug which reduce cardiac excitability?
 - a. Avil
 - b. Heparin
 - c. Propanol
 - d. Hydrocortisone
9. Gonad shield is used to protect:
 - a. Thyroid
 - b. Testis
 - c. Breast
 - d. Heart
10. Sterile forceps used for removing the articles from sterilizer are known as:
 - a. Autoclave
 - b. Hooks
 - c. Cheyle
 - d. Tooth forcep
11. Non ionic contrast is used in all EXCEPT:
 - a. Ultrasound
 - b. CT
 - c. IVU
 - d. MCU
12. Ionising radiation are known to alter:
 - a. Blood
 - b. Chromosomes
 - c. Bone
 - d. Lymph nodes
13. Unit of effective dose is:
 - a. Roentgen
 - b. RAD
 - c. Gray
 - d. Sievert
14. Radioactivity was discovered by Becquerel in:
 - a. 1895
 - b. 1896
 - c. 1945
 - d. 1960

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Paper Code: BR- 101...

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
ANATOMY INCLUDING RADIOGRAPHIC ANATOMY
PAPER FIRST

[Max Marks: 70]

[Time allotted: Three hours]

Note: Attempt all questions

Draw suitable diagram wherever necessary

(7 x 9 = 63)

A : Short answer questions:

- Q. 1. Describe the Shoulder joint under the following headings: Type, Bones forming, Factors providing stability, movements & applied.
- Q. 2. Draw a well labelled diagram of the structure of a Lymph node.
- Q. 3. Describe the femoral triangle (Boundaries, contents & applied).
- Q. 4. Draw a well labelled diagram of the Circle of Willis.
- Q. 5. Write about Systemic Circulation.
- Q. 6. Describe the lymphatic drainage of the head and neck region.
- Q. 7. Write about the rectus sheath (formation and contents) .
- Q. 8. Describe the bronchopulmonary segments of the lung.
- Q. 9. Describe the Brachial plexus.

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
ANATOMY INCLUDING RADIOGRAPHIC ANATOMY
PAPER FIRST (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. Periosteum is absent in:-
 - a. Long bones
 - b. Short bones
 - c. Irregular bones
 - d. Sesamoid bones
2. Abduction is defined as:-
 - a. Going away from the median plane
 - b. Increase of angle
 - c. Decrease of angle
 - d. Come nearer to the median plane
3. Wrist drop is seen in injuries of:
 - a. Median nerve
 - b. Ulnar nerve
 - c. Radial nerve
 - d. Musculocutaneous nerve
4. Pisiform is an example of:-
 - a. Long bone
 - b. Short bone
 - c. Sesamoid bone
 - d. Flat bone
5. Right gonadal vein drains into:-
 - a. Inferior vena cava
 - b. Right renal vein
 - c. Right internal iliac vein
 - d. Right external iliac vein
6. Spinal cord in an adult ends at the level of:
 - a. Lower border of L3
 - b. Upper border of L3
 - c. Lower border of L1
 - d. Upper border of L1
7. Carcinoma prostate occurs in:-
 - a. Apex
 - b. Base
 - c. Central zone
 - d. Peripheral zone
8. All are branches of external carotid artery EXCEPT:-
 - a. Lingual artery
 - b. Facial artery
 - c. Posterior auricular artery
 - d. Middle meningeal artery
9. Brodmann's number for visual area is:-
 - a. 4, 6
 - b. 3, 1, 2
 - c. 44, 45
 - d. 17, 18, 19
10. Pubic Symphysis is an example of:-
 - a. Primary cartilaginous joint
 - b. Secondary Cartilaginous joint
 - c. Synovial joint
 - d. Fibrous joint
11. All are hamstring muscles EXCEPT:
 - a. Semitendinosus
 - b. Semimembranosus
 - c. Short head of biceps femoris
 - d. Ischial head of adductor magnus
12. The anterior interventricular artery in the heart is a branch of:
 - a. Left coronary artery
 - b. Right coronary artery
 - c. Circumflex artery
 - d. Conus artery
13. Movements of pronation and supination occur at:
 - a. Radioulnar joints
 - b. Wrist joint
 - c. Shoulder joint
 - d. Elbow joint
14. Motor supply of muscles of facial expression is from:
 - a. Trigeminal nerve
 - b. Facial nerve
 - c. Glossopharyngeal nerve
 - d. Hypoglossal nerve

Regn. No.....

Paper Code: BR- 102...

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
PHYSIOLOGY & BIO-PHYSICS
PAPER TWO

[Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions

Draw suitable diagram wherever necessary

A : Short answer questions:

(7 x 9 = 63)

Write short notes on:

- Q. 1. What is erythropoiesis? Describe the stages and factors influencing it.
- Q. 2. With help of a diagram describe the structure of neuromuscular junction explain the mechanism of transmission of impulses across it?
- Q. 3. List 4 important function of saliva and stomach.
- Q. 4. What is synapse? What are the type of synapse? Enumerate the properties of synapse.
- Q. 5. Name the anterior pituitary hormone. Describe the functions of growth hormone.
- Q. 6. What is cardiac output? Describe the regulation of cardiac output.
- Q. 7. What is hypoxia? What are the types of hypoxia?
- Q. 8. What is GFR? What is its normal value? What factors affect it?
- Q. 9. List the differences between:
 - a. 1st Heart sound and 2nd heart sound
 - b. Cortical nephron and juxta medullary nephron.

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
PHYSIOLOGY & BIO-PHYSICS
PAPER TWO (MCQ)

Time allotted for MCQ- 15 minutes

(½ x 14= 7)

B : MCQs (Single response type):

Select the most appropriate answer and encircle the alphabet against it

1. The power house of the cell is :
 - a. Centriole
 - b. Centrosome
 - c. Mitochondria
 - d. Lysosomes
2. Erythropoiesis normally occurs in adult in:
 - a. Liver
 - b. Yolk sac
 - c. Spleen
 - d. Bone marrow
3. Phagocytic cell is :
 - a. Neutrophil
 - b. RBC
 - c. Platelets
 - d. Astrocytes
4. Depolarization in a motor nerve action potential is due to :
 - a. Entry of K⁺ ion
 - b. Exit of K⁺ ion
 - c. Entry of Na⁺ ion
 - d. Entry of Ca⁺⁺ ion
5. The neurotransmitter at neuromuscular function is?
 - a. Acetylcholine
 - b. Dopamine
 - c. Epinephrine
 - d. GABA
6. Cause for plateau phase in cardiac muscle action potential is?
 - a. Entry of Na⁺ ion
 - b. Exit of K⁺ ion
 - c. Entry of Ca⁺⁺ ion
 - d. Entry of chloride ion
7. First heart sound is best heard in :
 - a. Mitral area
 - b. Pulmonary area
 - c. Aortic area
 - d. All the above
8. Exposure to high altitude causes :
 - a. Hypoxic hypoxia
 - b. Stagnant hypoxia
 - c. Histotoxic hypoxia
 - d. Anemic hypoxia
9. Interruption of respiration during swallowing is called?
 - a. Deglutition apnea
 - b. Hyperpnea
 - c. Sleep apnea
 - d. Dyspnea
10. Trypsin helps in the digestion of :
 - a. Proteins
 - b. Fat
 - c. Carbohydrates
 - d. Minerals
11. Substances used for estimation of GFR:
 - a. Insulin
 - b. Inulin
 - c. Renin
 - d. PAH
12. The vascular layer of eye is:
 - a. Sclera
 - b. Retina
 - c. Choroid
 - d. None
13. Dorsal column next carry all sensations except:
 - a. Pain
 - b. Fine touch
 - c. Pressure
 - d. Vibration
14. A cells of pancreas secrete :
 - a. Insulin
 - b. Somatostatin
 - c. Glucagon
 - d. Pancreatic polypeptide

Regn. No.....

Paper Code: BR- 103...

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
RADIATION PHYSICS
PAPER THREE

[Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions

Draw suitable diagram wherever necessary

A : Short answer questions:

(7 x 9 = 63)

- Q. 1.** Write the difference among conductors, semi conductors and insulators. Support your answer with appropriate examples.
- Q. 2.** Discuss the principle of an A.C. generator.
- Q. 3.** Discuss the various types of interactions of X-rays with matter.
- Q. 4.** What is radioactive decay law? Define radioisotopes with an example.
- Q. 5.** Describe the wave nature of radiation and define.
- a.** Velocity
 - b.** Frequency of a wave
- Q. 6.** Discuss health hazards of ionizing radiation.
- Q. 7.** Define following quantities and write their units.
- a.** Radiation exposure
 - b.** Radiation dose equivalent
- Q. 8.** Write short notes on:
- a.** Wave-particle
 - b.** Mass energy equivalence
- Q. 9.** Write short notes on:
- a.** Photo-electric absorption
 - b.** Ultrasound transducer

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
RADIATION PHYSICS
PAPER THREE (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. In X-ray circuit, PN function acts as a:
 - a. Transformer
 - b. Rectifier
 - c. Amplifier
 - d. None of the above
2. Milliampere-sec (mAs) represents:
 - a. Current
 - b. Tune
 - c. Charge
 - d. Energy
3. Elements having similar atomic number and different mass number are called:
 - a. Isotopes
 - b. Isobars
 - c. Isotones
 - d. None of these
4. Faraday's law is related to:
 - a. Rectifications
 - b. Amplification
 - c. Induction
 - d. None of these
5. The perceived change in the frequency of sound due to relative motion between the source of sound and observer is called:
 - a. Piezo electric effect
 - b. Compton effect
 - c. Edison effect
 - d. Doppler effect
6. In solids the process of heat transfer is?
 - a. Conduction
 - b. Radiation
 - c. Convection
 - d. All of the above
7. Rod is the unit of :
 - a. Radiation exposure
 - b. Radioactivity
 - c. Radiation dose
 - d. Dose equivalent
8. Which one is the radiological quantity:
 - a. Heat
 - b. Charge
 - c. Temperature
 - d. Exposure
9. Working of the transformer is based on?
 - a. Oersted experiment
 - b. Bio-Savart Law
 - c. Faraday's Law
 - d. Ampere's Law
10. A step-up transformer converts:
 - a. High voltage to low current
 - b. Low voltage to high voltage
 - c. Low current to high current
 - d. None of these
11. Suitable target in X-ray tube is:
 - a. Aluminum
 - b. Copper
 - c. Barium
 - d. Lead
12. Half life is related to :
 - a. Radioactively
 - b. Attenuation
 - c. Transformer
 - d. Rectification
13. "Roentgen" is the unit of :
 - a. Radiation exposure
 - b. Radiation dose
 - c. Radioactivity
 - d. Dose equivalent
14. Sound travels at highest speed in:
 - a. Solids
 - b. Liquids
 - c. Gases
 - d. Vacuum

Regn. No.....

Paper Code: BR- 104...

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
HOSPITAL ADMINISTRATION & PATIENT CARE
PAPER FOUR

[Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions

Draw suitable diagram wherever necessary

A : Short answer questions:

(7 x 9 = 63)

- Q. 1. What is the 10 days rule?
- Q. 2. What are the clinical and ethical responsibilities of a Radiographer?
- Q. 3. Write about precautions in handling the infectious patient.
- Q. 4. What are the complications of intravascular contrast media?
- Q. 5. Describe the purgatives used in preparation in patient for abdominal X-ray investigation.
- Q. 6. What are the radiation protective measures taken in the radiology department?
- Q. 7. How to maintain the hygiene in Radiology department?
- Q. 8. What is the nonvascular contrast media used in Ultrasound and what is its applications?
- Q. 9. What is the 4H rule in relation to adverse drugs reaction?

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
HOSPITAL ADMINISTRATION & PATIENT CARE
PAPER FOUR (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. Cyanosis is first observed in :
 - a. Palm
 - b. Nail beds
 - c. Face
 - d. Feet
2. Adrenaline is given in given to raise blood pressure in a ratio of :
 - a. 1:1000
 - b. 1:100
 - c. 1:10
 - d. 1:10000
3. Magnesium sulphate is which type of purgative
 - a. Irritant
 - b. Soft Purgative
 - c. Bulk Purgative
 - d. Lubricant Purgative
4. A patient of reproductive age of LMP-20 November. The safe period to undergo X-ray examination is till I December. This is known as :
 - a. Safe rule
 - b. Ten day rule
 - c. X-ray rule
 - d. Safe period
5. If a patient is not able to stand on his own from the wheel chair, which of the following methods are used :
 - a. Unorthodox lift and shoulder lift
 - b. Australian method and shoulder lift
 - c. French method and orthodox lift
 - d. Australian method and orthodox lift
6. Enema is contraindicated in patients with :
 - a. Constipation
 - b. Chronic Constipation
 - c. Hirschprung's Disease
 - d. None of these
7. Ionizing radiation alters
 - a. Bone
 - b. Chromosome
 - c. Lymphnodes
 - d. None of these
8. Lead aprons should be checked by:
 - a. Hands
 - b. Sunlight
 - c. Fluroscopy
 - d. X-ray
9. Sodium Bicarbonate is used to correct:
 - a. Metabolic acidosis
 - b. Arrythmias
 - c. Respiratory Acidosis
 - d. Heart Rate
10. In portable X-ray, the distance between radiographer and patient should be :
 - a. 2 Feet
 - b. 3 Feet
 - c. 1 Meter
 - d. 2 Meter
11. Minimum lead equivalency of a lead apron is :
 - a. 0.25mm
 - b. 1.0cm
 - c. 0.5mm
 - d. 1.0mm
12. In mobile radiography an infirm patient is supported by :
 - a. Radiographer
 - b. Patient's attendant
 - c. Radiography Student
 - d. None
13. Radiation protection devices are :
 - a. Gonads shield
 - b. Thyroid shield
 - c. Lead gloves
 - d. All of the above
14. Drugs that reduce cardiac activity :
 - a. Propanolol
 - b. Lignocaine
 - c. Adrenaline
 - d. Sodium bicarbonate

Regn. No.....

Paper Code: BR- 101...

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
ANATOMY INCLUDING RADIOGRAPHIC ANATOMY
PAPER FIRST

[Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions

Draw suitable diagram wherever necessary

A : Short answer questions:

(7 x 9 = 63)

- Q. 1.** Describe the shoulder joint under the following headings: type of joint, bones forming the joint, ligaments, muscles producing the movements & applied anatomy.
- Q. 2.** Describe the boundaries and contents of popliteal fossa with its applied anatomy.
- Q. 3.** Write differences between an artery and a vein.
- Q. 4.** Describe the right atrium of human heart.
- Q. 5.** Discuss Femoral sheath.
- Q. 6.** Describe Lymphatic drainage of the stomach.
- Q. 7.** Describe Flexor retinaculum & Carpal Tunnel Syndrome.
- Q. 8.** Write a note on Circle of Willis.
- Q. 9.** Give an outline of Carotid sheath.

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
ANATOMY INCLUDING RADIOGRAPHIC ANATOMY
PAPER FIRST (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. All are parts of the brainstem EXCEPT:
 - a. Pons
 - b. Diencephalon
 - c. Midbrain
 - d. Medulla Oblongata
2. Brodmann's number for visual area is:-
 - a. Area no. 44, 45
 - b. Area no. 6
 - c. Area no. 17, 18, 19
 - d. Area no. 4
3. The muscle which depresses the mandible is:-
 - a. Masseter
 - b. Temporalis
 - c. Medial pterygoid
 - d. Lateral pterygoid
4. Patella is an example of:-
 - a. Long bone
 - b. Short bone
 - c. Sesamoid bone
 - d. Pneumatic bone
5. Supranuclear lesions of facial nerve will lead to paralysis of:-
 - a. Ipsilateral half of face
 - b. Contralateral half of face
 - c. Ipsilateral lower part of face
 - d. Contralateral lower part of face
6. The arrangement of structures in the hilum of Kidney from anterior to posterior is:-
 - a. Artery, Vein, Pelvis
 - b. Pelvis, Artery, Vein
 - c. Vein, Artery, Pelvis
 - d. Vein, Pelvis, Artery
7. All are features of large intestine EXCEPT:-
 - a. Taenia coli
 - b. Plicae circularis
 - c. Haustrations
 - d. Appendices epiploicae
8. Winging of the scapula occurs due to injury to:-
 - a. Axillary nerve
 - b. Median nerve
 - c. Musculocutaneous nerve
 - d. Nerve to serratus anterior
9. Which is not a hamstring muscle?
 - a. Semimembranosus
 - b. Semitendinosus
 - c. Short head of biceps femoris
 - d. Ischial head of adductor magnus
10. The angle of anteversion in the uterus is:-
 - a. 90 degrees
 - b. 120 degrees
 - c. 60 degrees
 - d. 140 degrees
11. The ligament attached to lesser curvature of stomach is:-
 - a. Lesser omentum
 - b. Greater omentum
 - c. Gastrosplenic ligament
 - d. None of the above
12. Foot drop is caused due to injury to:-
 - a. Femoral nerve
 - b. Obturator nerve
 - c. Deep peroneal nerve
 - d. Superior gluteal nerve
13. Facial artery is a branch of:-
 - a. Internal carotid artery
 - b. Subclavian artery
 - c. Maxillary artery
 - d. External carotid artery
14. Corpus callosum is made up of :-
 - a. Commissural fibres
 - b. Association fibres
 - c. Projection fibres
 - d. None of the above

Regn. No.....

Paper Code: BR- 102...

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
PHYSIOLOGY & BIO-PHYSICS
PAPER TWO

[Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions

Draw suitable diagram wherever necessary

A : Short answer questions:

(7 x 9 = 63)

- Q. 1.** Define excitation-contraction coupling. Give the sequence of events involved in excitation-contraction coupling. (2+5=7)
- Q. 2.** Define cardiac cycle. Enumerate the mechanical events of cardiac cycle giving duration of each and draw labelled diagram showing left ventricular pressure-volume and ECG changes during cardiac cycle. (2+2+3=7)
- Q. 3.** Draw a spirogram indicating various lung volumes and capacities and define vital capacity. (5+2=7)
- Q. 4.** Give the composition and functions of pancreatic juice. (3+4=7)
- Q. 5.** Differentiate between: (3.5 x 2=7)
- a. Two types of nephrons in the kidney
 - b. Graded potential and action potential
- Q. 6.** Give the origin, course and functions of pyramidal tract and draw a labelled diagram showing the pathway of pyramidal tract. (4+3=7)
- Q. 7.** Draw labelled diagram to show feedback control of growth hormone secretion. Differentiate between pituitary and hypothyroid dwarf. (3+4=7)
- Q. 8.** List the various types of leucocytes found in the blood. Describe the major functions of each type. (3+4=7)
- Q. 9.** Write briefly on functions of hypothalamus. (7)

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
PHYSIOLOGY & BIO-PHYSICS
PAPER TWO (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. The minimal strength of stimulus acting for a given duration that produces action potential is called _____ stimulus.
 - a. Chronaxie
 - b. Threshold
 - c. Sub-threshold
 - d. Supra-threshold
2. The value of which of the following is considered as unit of excitability:
 - a. Refractory period
 - b. Utilization time
 - c. Chronaxie
 - d. Rheobase
3. The major anion in intracellular fluid is:
 - a. Protein
 - b. Chloride
 - c. Bicarbonate
 - d. Phosphate
4. The normal blood pH is:
 - a. 7.20
 - b. 7.30
 - c. 7.40
 - d. 7.50
5. The total leucocyte count in an adult person is:
 - a. 20000/cu.mm
 - b. 15000-18000/cu.mm
 - c. 11000-15000/cu.mm
 - d. 4000-11000/cu.mm
6. The motor unit is:
 - a. Muscle fiber and neurons supplying it
 - b. Ventral horn cells along with its motor nerve
 - c. Single motor neuron and all the muscle fiber it supplies
 - d. Single muscle fiber with its nerve
7. Deglutition refers to:
 - a. Chewing the food into smaller particles
 - b. Swallowing the food
 - c. Degradation of food by digestive enzymes
 - d. Transport of nutrients from small intestine into circulation
8. All the following are synthesized in the liver **Except:**
 - a. Albumin
 - b. Immunoglobulins
 - c. Urea
 - d. Cholesterol
9. In systemic circulation the blood is pumped from:
 - a. Right atrium
 - b. Right ventricle
 - c. Left atrium
 - d. Left ventricle
10. The exchange vessels are the:
 - a. Arterioles
 - b. Veins and venules
 - c. Capillaries
 - d. Aorta
11. Inspiratory capacity is:
 - a. TV+ERV
 - b. TV+IRV
 - c. ERV+RV
 - d. VC+RV
12. Slow pain is carried by:
 - a. A α fiber
 - b. B fiber
 - c. C fiber
 - d. A δ fiber
13. The tract which carries proprioceptive sensation is:
 - a. Spinotectal
 - b. Lateral spinothalamic
 - c. Dorsal column
 - d. Anterior spinothalamic
14. Delta cells of pancreas secrete:
 - a. Insulin
 - b. Glucagon
 - c. Somatostatin
 - d. Pancreatic polypeptide

Regn. No.....

Paper Code: BR- 103...

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
RADIATION PHYSICS
PAPER THREE

[Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions
Draw suitable diagram wherever necessary

A : Short answer questions:

(7 x 9 = 63)

- Q. 1.** Define the following and write their units:
- a. Radiation exposure
 - b. Radiation dose equivalent
- Q. 2.** Discuss the principle of an A C generator.
- Q. 3.** Briefly explain Faraday's laws of electromagnetic induction. Discuss the principle of working of a transformer.
- Q. 4.** What is the difference between vectors and scalars? Give any two examples of each.
- Q. 5.** Write short notes on:
- a. Photo-electric absorption
 - b. Ultrasound transducer
- Q. 6.** What is radioactivity? Explain radioactive decay law.
- Q. 7.** Write short notes on:
- a. Conservation of energy
 - b. Bio-Savart law
- Q. 8.** Discuss the health effects of ionizing radiation.
- Q. 9.** Which interaction is responsible for scattering of X-rays into tissues? Mention the parameters affecting scattering.

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
RADIATION PHYSICS
PAPER THREE (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

($\frac{1}{2} \times 14 = 7$)

Select the most appropriate answer and encircle the alphabet against it

1. "Rad" is the unit of:
 - a. Radiation exposure
 - b. Radiation dose
 - c. Radioactivity
 - d. Dose equivalent
2. A step-up transformer converts:
 - a. High voltage to low current
 - b. High voltage to low current
 - c. Low voltage to high voltage
 - d. Low voltage to high voltage
3. Which one is a derived quantity?
 - a. Mass
 - b. Temperature
 - c. Time
 - d. Velocity
4. Faraday's law is based on:
 - a. Electrostatics
 - b. Relativity
 - c. Induction
 - d. Conservation of momentum
5. Failure of Ohm's law is related to:
 - a. Conductors
 - b. Insulators
 - c. Superconductors
 - d. None
6. Unit of Radioactivity is:
 - a. Curie
 - b. Einstein
 - c. Tesla
 - d. Newton
7. X-rays are invented by:
 - a. Roentgen
 - b. Faraday
 - c. Coulomb
 - d. Madam Curie
8. Milliampere-sec (mAs) represents:
 - a. Current
 - b. Time
 - c. Charge
 - d. Energy
9. HVL stands for:
 - a. High voltage line
 - b. Half value layer
 - c. Height value limit
 - d. None
10. Sound travels at highest speed in :
 - a. Solids
 - b. Liquids
 - c. Gases
 - d. Vacuum
11. Which interaction does not take place in diagnostic X-ray energy range?
 - a. Photoelectric
 - b. Compton
 - c. Coherent
 - d. Pair production
12. Piezoelectricity is related to:
 - a. Electromagnetism
 - b. Radiation protection
 - c. Ultrasound
 - d. MRI
13. Maximum permissible dose limit per year for radiation workers is:
 - a. 5 mSv
 - b. 30 mSv
 - c. 10 mSv
 - d. 6 mSv
14. In X-ray generator circuit, PN junction acts as:
 - a. Rectifier
 - b. Transformer
 - c. Amplifier
 - d. Voltage regulator

Regn. No.....

Paper Code: BR- 104...

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
HOSPITAL ADMINISTRATION & PATIENT CARE
PAPER FOUR

[Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions

Draw suitable diagram wherever necessary

A : Short answer questions:

(7 x 9 = 63)

- Q. 1. What precaution would you take while doing an X-ray of a patient with tracheostomy?
- Q. 2. How do you prepare the patient for anesthesia in diagnostic Radiology department?
- Q. 3. Write the detail planning of diagnostic X-ray department.
- Q. 4. How will you maintain the hygiene in Radiology department?
- Q. 5. What are the clinical responsibilities of a Radiographer?
- Q. 6. What is the 10 days rule?
- Q. 7. Describe the purgatives used in preparation of a patient for abdominal X-ray investigation.
- Q. 8. Write about the precautions in handling a patient on traction.
- Q. 9. Briefly write the principle of caring for an anaesthetized patient.

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
HOSPITAL ADMINISTRATION & PATIENT CARE
PAPER FOUR (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. Oral cholecystographic agent:
 - a. Telepaque
 - b. Gastrograffin
 - c. Iodine
 - d. Omnipaque
2. Drugs which reduce cardiac excitability :
 - a. Avil
 - b. Heparine
 - c. Propanalal
 - d. Multihance
3. The purgatives are contraindicated when:
 - a. Patient has colostomy
 - b. Asthma
 - c. Diabetic patient
 - d. Hypertension
4. Drug which is used to raise the blood pressure and increase cardiac output:
 - a. Hydrocortisone
 - b. Adrenaline (1 in 1000)
 - c. Adrenaline (1 in 10)
 - d. Urograffin
5. Radiographer in a contaminated state should try to handle cassette:
 - a. Frequently
 - b. Minimally
 - c. Should not touch
 - d. At corner
6. Lead apron should be checked for any crack by:
 - a. Open and see
 - b. X-ray
 - c. Fluoroscopically
 - d. Sunlight
7. Gonad shield is used to:
 - a. Protect radiation
 - b. Protect cassette
 - c. Protect radiographer
 - d. Darkroom
8. Infectious patient must be given priority over other OPD patient :
 - a. Yes
 - b. No
 - c. Both a & b
 - d. None of the above
9. Waist apron is used to cover the:
 - a. Thyroid
 - b. Gonad
 - c. Lower back
 - d. Chest
10. Fruit drinks are allowed in the abdominal preparation:
 - a. Yes
 - b. No
 - c. Both a & b
 - d. None of the above
11. Ionizing radiation is known to alter:
 - a. Blood
 - b. Chromosomes
 - c. Bone
 - d. Lymphnode
12. Sterile forceps for use in removing article from a sterilizer is known as:
 - a. Jar
 - b. Autoclaves
 - c. Cheatle
 - d. Adaptor
13. Non-ionic contrast is used in all except:
 - a. Ultrasound
 - b. MCU
 - c. MRI
 - d. CT
14. A female patient of reproductive age with the LMP on 5th January, what is the safe period for X-ray examination:
 - a. 16th January
 - b. 4th January
 - c. 20th January
 - d. 12th January

Lib

Regn. No.....

Paper Code: BRIT- 101...

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2017
ANATOMY INCLUDING RADIOGRAPHIC ANATOMY
PAPER FIRST

Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions

Draw suitable diagram wherever necessary

Part I : Short answer questions:

(7 x 9 = 63)

- Q. 1.** Describe the hip joint under the following headings :- type of joint, bones forming the joint, ligaments, muscles producing the movements & applied.
- Q. 2.** Describe the formation and branches of the brachial plexus with its applied anatomy.
- Q. 3.** Write difference between skeletal muscle, smooth muscle & cardiac muscle.
- Q. 4.** Describe the bronchopulmonary segments with their applied anatomy.
- Q. 5.** Discuss about muscles of mastication.
- Q. 6.** Describe lymphatic drainage of uterus & cervix.
- Q. 7.** Write short notes on cubital fossa.
- Q. 8.** Describe cerebrospinal fluid circulation & its applied.
- Q. 9.** Write on Popliteal fossa.

B.R.I.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2017
ANATOMY INCLUDING RADIOGRAPHIC ANATOMY
PAPER FIRST (MCQ)

Time allotted for MCQ- 15 minutes

MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. Spinal cord in adults extends upto:
 - a. Lower border of L1
 - b. Upper border of L1
 - c. Lower border of L3
 - d. Upper border of L3
2. Brodmann's number for Broca's motor speech area is:
 - a. Area no. - 44,45
 - b. Area no. - 6
 - c. Area no. - 17
 - d. Area no. - 4
3. Middle ear communicates with the pharynx via:
 - a. Oval window
 - b. Auditory tube
 - c. Internal ear
 - d. Round window
4. Maxilla is an example of:
 - a. Long bone
 - b. Short bone
 - c. Sesamoid bone
 - d. Pneumatic bone
5. All intrinsic muscles of tongue are supplied by:
 - a. 7th cranial nerve
 - b. 8th cranial nerve
 - c. 9th cranial nerve
 - d. 12th cranial nerve
6. Portal vein is formed behind the:
 - a. Head of pancreas
 - b. Neck of pancreas
 - c. Body of pancreas
 - d. Tail of pancreas
7. Stomach bed is formed by all except:
 - a. Pancreas
 - b. Right kidney
 - c. Left suprarenal gland
 - d. Splenic artery
8. Corpus callosum connects the:
 - a. Two hemispheres of cerebellum
 - b. Two hemispheres of cerebral cortex
 - c. Cerebral cortex to brain stem
 - d. Brain stem to spinal cord
9. Cerebellum controls the:
 - a. Proprioception
 - b. Co-ordination of motor movements of opposite side
 - c. Body sensations
 - d. Co-ordination of motor movements of same side
10. Brodmann's number for primary motor area is:
 - a. Area no. - 44
 - b. Area no - 6
 - c. Area no. - 4
 - d. Area no. - 17
11. Perineal body is formed by:
 - a. 4 paired & 2 unpaired muscles
 - b. 4 paired & 4 unpaired muscles
 - c. 2 paired & 2 unpaired muscles
 - d. 2 paired & 4 unpaired muscles
12. Nerve supply of anterior abdominal wall is:
 - a. Upper 6 intercostal nerves
 - b. Lower 6 intercostal nerves
 - c. Lumbosacral trunk
 - d. Sacral plexus
13. 'No' movements occur at:
 - a. Atlanto-occipital joint
 - b. Atlanto-axial joint
 - c. Joint between 6th & 7th cervical vertebra
 - d. Joint between 3rd & 4th cervical vertebra
14. In female, pelvic floor is pierced by:
 - a. Urinary bladder, vagina, rectum
 - b. Urinary bladder, rectum
 - c. Urinary bladder, vagina
 - d. Vagina, rectum

Regn. No.....

Paper Code: BRIT- 102...

B.Sc. MEDICAL TECHNOLOGY (RADIOGRAPHY & IMAGING)
FIRST YEAR EXAMINATION, JUNE/JULY - 2017
PHYSIOLOGY & BIO-PHYSICS

[Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary

A : Short answer questions:

(7 x 9 = 63)

- Q. 1. Describe the structure of neuromuscular junction with the help of labelled diagram and explain formation of end plate potential. (3.5+3.5=7)
- Q. 2. Enumerate the non-respiratory functions of lung. Define surfactant and give its composition & functions. (3+4=7)
- Q. 3. Trace the ascending tracts in TS of spinal cord also illustrating the sensation they carry. What is the sensory loss in complete transection of spinal cord at the level of T 10 vertebra? (5+2=7)
- Q. 4. Name the receptors of vision. Trace the visual pathway and write briefly on errors of refraction. (2+3+2=7)
- Q. 5. Draw a labelled diagram of juxtaglomerular apparatus? Discuss the role of it in urine formation. (3+4=7)
- Q. 6. Define blood pressure and its components. Discuss the methods of measurement of blood pressure. (3+4=7)
- Q. 7. Discuss the hormones regulating the calcium & phosphate metabolism. (7)
- Q. 8. Define hemostasis. Discuss the formation of permanent hemostatic plug. (2+5=7)
- Q. 9. Draw the microscopic structure of the skeletal muscle and discuss the various proteins involved in its contraction. (3+4=7)

B.Sc. MEDICAL TECHNOLOGY (RADIOGRAPHY & IMAGING)
FIRST YEAR EXAMINATION, JUNE/JULY - 2017
PHYSIOLOGY & BIO-PHYSICS
(MCQ)

Time allotted for MCQ - 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and **encircle** the alphabet against it

1. HCl is produced from:
 - a. G cells
 - b. Parietal cells
 - c. Peptic cells
 - d. Mucus cells
2. Muscles of inspiration are all **except**:
 - a. Diaphragm
 - b. Internal intercostal
 - c. Sternocleidomastoid
 - d. External intercostal
3. Most important plasma protein for viscosity of blood is:
 - a. Albumin
 - b. Globulin
 - c. Prothrombin
 - d. Fibrinogen
4. Amount of air remaining in conducting zone after normal inspiration is:
 - a. Residual capacity
 - b. Dead space
 - c. Residual volume
 - d. Functional residual capacity
5. ICF comprises of:
 - a. Blood
 - b. Fluid in the cell
 - c. Lymph
 - d. Fluid in the cavity
6. Second heart sound is produced due to closure of:
 - a. Semilunar valves
 - b. Mitral valves
 - c. Tricuspid valves
 - d. A-V valves
7. Which of these is called as resistance vessels?
 - a. Arterioles
 - b. Vein
 - c. Capillaries
 - d. Venules
8. Maintenance of constant internal environment is called:
 - a. Hemostasis
 - b. Hematemesis
 - c. Homeostasis
 - d. Hypotension
9. All are the hormones for calcium homeostasis **except**:
 - a. Calcitonin
 - b. PTH
 - c. Glucagon
 - d. Vit D3
10. Windkessel effect is shown by:
 - a. Venules
 - b. Capillaries
 - c. Arteries & aorta
 - d. Vena-cava
11. All are responses to parasympathetic system stimulation **except**:
 - a. Vasodilation
 - b. Bradycardia
 - c. Increased gut motility
 - d. Pupil dilation
12. Receptors for hearing is present in:
 - a. Cochlea
 - b. Semicircular canal
 - c. Utricle
 - d. Sacculle
13. Effective filtration pressure depends on all **except**:
 - a. Hydrostatic pressure
 - b. Oncotic pressure
 - c. Interstitial pressure
 - d. Bowman capsular pressure
14. Fast pain is carried by:
 - a. A α fiber
 - b. B fiber
 - c. C fiber
 - d. A δ fiber

Regn. No.....

Paper Code: BRIT- 103...

B.Sc. MEDICAL TECHNOLOGY (RADIOGRAPHY & IMAGING)
FIRST YEAR EXAMINATION, JUNE/JULY - 2017
RADIATION PHYSICS

[Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary

A : Short answer questions:

(7 x 9 = 63)

- Q. 1. Write various measures for radiation dose reduction among radiation workers, patients and public.
- Q. 2. Describe Compton scattering with suitable diagrams.
- Q. 3. Discuss differences between Random access memory (RAM) chip and Read only memory (ROM) chip.
- Q. 4. Define Coulomb's law, Ohm's law and Lenz's law.
- Q. 5. Define Rutherford model of atom. Write problems with this model.
- Q. 6. What are ultrasonic transducers? Describe piezoelectric crystal element.
- Q. 7. What are derived quantities? Define Roentgen and electron volt.
- Q. 8. Write short notes on half value layer (HVL) and inverse square law.
- Q. 9. Calculate mean, mode and median from the following ungrouped data relating to hemoglobin percent in g/100 ml.
6.5, 6.5, 7.5, 8.5, 8.5, 8.5, 8.8, 8, 9, 9 and 9.5

Regn. No.....

Paper Code: BRIT- 103...

B.Sc. MEDICAL TECHNOLOGY (RADIOGRAPHY & IMAGING)

FIRST YEAR EXAMINATION, JUNE/JULY - 2017

RADIATION PHYSICS

(MCQ)

Time allotted for MCQ - 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and **encircle** the alphabet against it

1. Ionizing radiation causes damage to living tissue by:
 - a. Absorption of radiation energy in the tissue
 - b. Scattering of radiation energy by the tissue
 - c. Transmission of radiation
 - d. All of the above
2. IRCP stands for:
 - a. International commission for radiological protection
 - b. International community for radiological protection
 - c. International committee for radiological protection
 - d. International committee for radiological participation
3. Atomic number and atomic mass of Iodine (I) are:
 - a. Atomic number 52 and atomic mass 123
 - b. Atomic number 55 and atomic mass 125
 - c. Atomic number 54 and atomic mass 128
 - d. Atomic number 53 and atomic mass 126
4. B mode (Brightness mode) imaging is used in:
 - a. MRI
 - b. CT scan
 - c. USG
 - d. X-Ray
5. Gadolinium contrast is used in:
 - a. CT scan
 - b. MRI
 - c. X-Ray
 - d. USG
6. Nobel prize for X-rays was awarded to:
 - a. Marie Curie
 - b. Wilhelm Roentgen
 - c. Albert Einstein
 - d. None of the above
7. Which radiological modality is safe in pregnancy?
 - a. X-Ray
 - b. CT scan
 - c. Nuclear scan
 - d. USG
8. MRI is contraindicated in:
 - a. Patient with cardiac pacemaker
 - b. Pregnancy and lactation
 - c. Infants
 - d. Trauma patients
9. Protons + neutrons are known as:
 - a. Nucleons
 - b. Protoneutrons
 - c. A+B
 - d. None
10. Paramagnetic substances have:
 - a. Unpaired electron within the atom
 - b. Paired electrons within the atom
 - c. Paired protons within the atom
 - d. All of the above
11. In ultrasonography transducer converts:
 - a. Electric energy to mechanical energy
 - b. Mechanical energy to electrical energy
 - c. Both a & b
 - d. None
12. Atomic number of Gadolinium is:
 - a. 65
 - b. 66
 - c. 64
 - d. 62
13. M mode USG scanning is used for:
 - a. Brain
 - b. Eye
 - c. Heart
 - d. Voluntary muscles
14. Molybdenum (Mo) is used in:
 - a. X-rays
 - b. Mammography
 - c. PET scan
 - d. Angiography

Regn. No.....

Paper Code: BRIT- 104...

B.Sc. MEDICAL TECHNOLOGY (RADIOGRAPHY & IMAGING)
FIRST YEAR EXAMINATION, JUNE/JULY - 2017
HOSPITAL ADMINISTRATION & PATIENT CARE

[Time allotted: Three hours]

[Max Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary

A : Short answer questions:

(7 x 9 = 63)

- Q. 1. What is the 10 days rule?
- Q. 2. What are the radiation hazards and write its protective measures?
- Q. 3. Write the precaution in handling the infectious patient.
- Q. 4. Define the nosocomial infection.
- Q. 5. What are the clinical and ethical responsibilities of radiographer?
- Q. 6. How do you prepare barium solution for digestive system study?
- Q. 7. How to maintain the hygiene in radiology department?
- Q. 8. What is the 4 H rule in relation to adverse drugs reaction?
- Q. 9. Write short notes on:
 - a. Universal precaution
 - b. Contrast media
 - c. MLC request form

Regn. No.....

Paper Code: BRIT- 104...

B.Sc. MEDICAL TECHNOLOGY (RADIOGRAPHY & IMAGING)

FIRST YEAR EXAMINATION, JUNE/JULY - 2017

HOSPITAL ADMINISTRATION & PATIENT CARE

(MCQ)

Time allotted for MCQ - 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it-

1. Non-ionic contrast is used in all except:
 - a. Ultrasound
 - b. MCU
 - c. IVU
 - d. CT
2. How many radiographs are taken for routine for a long bone?
 - a. 1
 - b. 2
 - c. 3
 - d. 4
3. In a female patient of reproductive age with the LMP on 12th January, what is the safe period for X-ray examination?
 - a. 8th January
 - b. 20th January
 - c. 24th January
 - d. 12th February
4. Ionizing radiation are known to alter:
 - a. Blood
 - b. Chromosomes
 - c. Bone
 - d. Lymph node
5. The recorded sharpness or detail of structures on the image is called:
 - a. KV
 - b. Resolution
 - c. Density
 - d. Factor
6. Gonad shield is used to:
 - a. Protect radiation
 - b. Protect cassette
 - c. Protect radiographer
 - d. Darkroom
7. Radiographs of the abdomen are taken on what kind of respiration?
 - a. Expiration
 - b. Inspiration
 - c. Both of the above a & b
 - d. None of the a & b
8. Drugs which reduce cardiac excitability:
 - a. Avil
 - b. Heparin
 - c. Propanolol
 - d. MultiHance
9. Adverse reaction of contrast media depends on:
 - a. Osmolality
 - b. Chemotoxicity
 - c. Hypersensitivity
 - d. All the above
10. Major disadvantage of all conventional ionic contrast media is that the molar: concentration is:
 - a. Extremely high
 - b. Normal
 - c. Extremely low
 - d. None of these
11. Injection hydrocortisone is given to:
 - a. Increase BP
 - b. Reduced BP
 - c. Increase respiration
 - d. Stop vomiting
12. Lead apron should be check for any crack by:
 - a. Open and see
 - b. X-ray
 - c. Fluoroscopically
 - d. Sunlight
13. Waist apron is used to cover the:
 - a. Thyroid
 - b. Gonad
 - c. Lower back
 - d. Chest
14. The back of hand is called:
 - a. Dorsum
 - b. Planter
 - c. Both of the above a & b
 - d. Neither a & b