

Subject code: BMLT-104/BOPT/BOTT/BMIT-101

Subject: Human Anatomy & Physiology

Time: 3 Hours

M.M. 70

SECTION-A**Human Anatomy (Max. Marks – 35)****Note:- Draw well labeled diagrams wherever necessary.**

- Q1 Write long Notes. Attempt any one:- (10X1=10)**
 a Describe Gross Anatomy of spinal cord
 b Describe classification of bones
- Q2 Write short notes. Attempt any three:- (5X3=15)**
 a Synovial joint
 b External features of thyroid gland
 c External features of heart
 d Gross anatomy of pancreas
 e Gross anatomy of lungs
- Q3 Write very short notes. Attempt any five :- (1X5=5)**
 a Enumerate bones forming elbow joint
 b Enumerate bones of skull
 c Enumerate Veins of upper limb
 d Enumerate parts of nervous system
 e Enumerate parts of female reproductive system
 f Enumerate layers of eye ball
 g Enumerate meninges of brain
- Q4 Multiple Choice Question. Attempt all. (1X5=5)**
 a Osteology is the study of
 1 Bone 2 Muscles 3 Nerves 4 Joints
 b Wrist drop is due to injury of
 1 Radial nerve 2 Median nerve 3 Ulnar nerve 4 None of the above
 c Number of carpal bones is
 1 Eight 2 Seven 3 Nine 4 Five
 d Parotid gland is
 1 Endocrine gland 2 Exocrine gland 3 Both exocrine and endocrine gland 4 Salivary gland
 e Number of spinal nerve is
 1 Twelve pairs 2 Thirteen pairs 3 Twenty five pairs 4 Thirty one pairs

SECTION-B**HUMAN PHYSIOLOGY (Max. Marks – 35)**

- Q1. Long answer type questions. Attempt any one. (10x1=10)**
 a. Define Menstrual Cycle. Explain its different Phases with diagrams.
 b. Define Haemostasis. Explain both coagulation mechanism with the help of a flow chart.
- Q2. Short answer type questions. Attempt any three. (5x3=15)**
 a. Functions of platelets.
 b. Blood groups and its types
 c. Neuro Muscular Junction
 d. Define hypoxia and its type.
 e. Functions of gastric juice

Q 3. Very short answer type questions. Attempt any five.

(1x5=5)

- a. Anaemia
- b. spermatogenesis
- c. Active transport
- d. Define Heart sounds
- e. breath sounds
- f. surfactant
- g. Vital Capacity

Q 4. Multiple choice questions. Attempt all.

(1x5=5)

- a. Which one is not a granulocyte:
 - i. Lymphocyte
 - ii. Monocyte
 - iii. Erythrocyte
 - iv. All of the above
- b. Sarcolemma is :
 - i. A skeletal muscle fiber
 - ii. A smooth muscle fiber
 - iii. Cell membrane of muscle fibers
 - iv. Sheath of myelin
- c. All are the component of small intestine except:
 - i. Oesophagus
 - ii. Duodenum
 - iii. Jejunum
 - iv. Ileum
- d. Protein synthesis takes place in :
 - i. Ribosome
 - ii. Endoplasmic reticulum
 - iii. Nucleus
 - iv. Golgi complex
- e. Heme
 - i. Is the pigment in haemoglobin
 - ii. Is an iron containing porphyrin
 - iii. Iron in it is in ferrous form
 - iv. All of the above

Printing Pages : 1

Paper Code : BMIT-102

C (SVSU:2022-23/R)

Enrollment No.														
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B.Sc. Medical Imaging Technology (BMIT) 1st Year

Subject: Fundamental of Medical Imaging & Basic Radiation Physics

Subject Code: BMIT- 102

Time: 3 Hours

M.M. 70

Note: All questions are compulsory. Make diagrams wherever required.

Q1. Long answer type questions. Attempt any three.

(10x3=30)

- Discuss the rotatory anode x-ray tube and stationary anode x-ray tube.
- Define the importance of Radiation protection in Radiology department.
- Define the construction of dark room with labelled diagram.
- Discuss the interaction of x-rays with matter.
- Explain semiconductors and its types.

Q2. Short answer type questions. Attempt any five.

(5x5=25)

- Discuss about the process of radioactivity.
- Define Grids.
- Write down about the properties of gamma rays.
- Define the structure of Intensifying Screens.
- Discuss about the process of production of characteristic x-rays and bremsstrahlung x-rays with proper diagram.
- Define the Radiographic Film.
- Define x-ray film processing.

Q 3. Very short answer type questions. Attempt any five.

(1x5=5)

- Define ALARA.
- Enlist the shielding used for Radiation protection.
- What is the need for radiation protection in Radiology Department?
- Explain the isobars and isotopes.
- Explain construction of grid controlled x-rays.
- Who discovered x-rays and when.
- Define latent image.

Q 4. Multiple choice questions. Attempt all.

(1x10=10)

- Lead is used for Radiation protection because of :
 - high density
 - high atomic number
 - High binding energy
 - Both a and b
- The developer solution is:
 - basic
 - acidic
 - Neutral
 - None of these
- Isomeric transition is the emission of:
 - x-rays
 - alpha rays
 - Beta rays
 - Gamma rays
- TDS stands for:
 - Time distance shielding
 - Tall distance shield
 - Tungsten white stand
 - None of these
- which one of the following is an example of trivalent impurity:
 - Arsenic (As)
 - boron
 - Molybdenum
 - All of these
- The x-rays are:
 - monochromatic
 - Polychromatic
 - Binding energy
 - Bonding energy
- Number of intensifying screens used in X-ray cassette:
 - one
 - two
 - three
 - four
- X-rays travels in line:
 - straight
 - angled
 - wavy
 - All of these
- When radiation interacts with water, producing fragments such as hydrogen (H) and hydroxyls (OH):
 - Direct radiation
 - Indirect-Direct radiation
 - None of above
 - Both a and b
- The energy required to disassemble an atom into free electrons and a nucleus:
 - kinetic energy
 - Potential energy
 - Binding energy
 - Breaking energy

Time: 3 Hours

M.M. 70

Note: All questions are compulsory. Make diagrams wherever required.

Q1. Long answer type questions. Attempt any three.

(10x3=30)

- What is Carbohydrates? Describe the classification and function of Carbohydrates.
- Describe the Beta oxidation of fatty acid with energetic.
- What are enzymes? Describe the classification and isoenzymes.
- Describe Kreb's cycle with its energetic.
- What is Radioactivity? Describe the different types of ionization and medical application of radioisotopes.

Q2. Short answer type questions. Attempt any five.

(5x5=25)

- Write notes on Essential and non essential amino acid.
- Write about saturated, unsaturated and essential fatty acid.
- What are Ketone bodies? Define the ketogenesis.
- Define the cell nucleus with labeled diagram.
- Explain the Gluconeogenesis.
- Explain the factor affecting enzyme activities.
- Describe the Urea cycle.

Q3. Very short answer type questions. Attempt any five.

(1x5=5)

- Which functional group present in glucose?
- Write the name of Secondary structure of protein.
- Definition of Gluconeogenesis.
- Write the full form of VLDL.
- Write the name of non reducing disaccharide.
- Which cell organelles is called power house of the cell?
- Which cell organelles is called factory of Protein synthesis?

Q4. Multiple choice questions. Attempt all.

(1x10=10)

- The ATP molecules are utilized in activation of Fatty acid are
 - 1
 - 2
 - 3
 - 4
- Starch is the Polymer of
 - α -D-Glucose
 - β -D-Glucose
 - Both of these
 - None of These
- The subunits of 80S ribosomes include
 - 40S and 50S
 - 30S and 50S
 - 40S and 60S
 - None of these
- The basic amino acid is
 - Glycine
 - Leucine
 - Histidine
 - Proline
- Arginase is the enzyme of
 - Kreb's cycle
 - Glycolysis
 - Urea Cycle
 - HMP shunt
- The site of enzyme where substrate is bind
 - Active site
 - Allosteric site
 - Both of these
 - None of These
- The glycolysis is regulated by
 - Hexokinase
 - Phosphofructokinase
 - Pyruvate Kinase
 - All of these
- The nitrogenous base present in Cephalin is
 - Ethanolamine
 - Serine
 - Choline
 - None of These
- The basic principle of an ELISA is
 - Ag-Ab binding
 - Ag-Enzyme binding
 - Both of these
 - None of these
- ATP produced in Aerobic condition of Glycolysis
 - 2
 - 4
 - 6
 - 8

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Paper Code : BMIT-104

C (SVSU:2021-22/R)

Enrollment No.

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B.Sc. (BMIT) I Year

Basics Radiography and Radiographic Equipment

Time 3 Hours

Max. Marks: 70

Q.1: Attempt all multiple Choice Questions. Select the correct answer only. 2 Mark each (2x5=10)

- In PA projection of hand, it is:
 - Pronated
 - Supinated
 - Everted
 - Flexed
- The grid is not necessary in making a radiograph of:
 - Lateral pelvis
 - AP lumbar spine
 - Lateral cervical spine
 - AP view of pelvis
- The leakage radiation is that radiation which comes out-
 - Through glass window
 - Through tube housing
 - Both above
 - None of the above
- Film badge is used for:
 - Radiation protection
 - To measure personnel radiation dose
 - To record the film
 - To expose the film.
- In photoelectric emission, patient dose is:
 - High
 - Low
 - Medium
 - No effect
- The x-ray tube said to be "gassy" when –
 - Filament has burnt out
 - Presence of the gass molecule
 - Pitting of the anode
 - None of the above

Q.2: Fill in the blanks. Attempt all.

(2x5=10)

- Function of the grid to.....
- Filament in x-ray tube emits electron by process known as.....
- Hallux view basically done for.....
- Another name for the seventh cervical vertebra is.....
- Stryker's view is done for.....

Q.3: Write True or False. Attempt all.

(2x5=10)

- The central ray location for a Towne's method is 2 inches above glabella.
- To do a medial oblique projection of the elbow bend the elbow 45 degrees.
- Fixer is not important in x-ray film development.
- X-ray tube are surrounded by lead to absorb unwanted radiation..
- The threshold energy for pair production is 1.022 MeV.

Q.4: Attempt any four of the following. 5 Mark each.

(5x4=20)

- Cassettes.
- Intensifying screen.
- Radiography of cervical spine.
- Radiography of mandible
- Photoelectric effects

Q.5: Write long notes on any two. 10 mark each.

(10x2=20)

- Describe the interaction of ionizing radiation with matter. Discuss the role of beam limiting devices in Radiology.
- Write the basic views of lumbar spine and explain about it in details.
- Explain various steps involved in x-ray film processing. Discuss the theory of latent image, its development and fixing.

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Paper Code : BRIT-105

A (SVSU:2022-23/R)

Enrollment No.

B.Sc. Medical imaging Technology (BMIT) 1st Year**Subject: Community Health Care****Subject Code: BRIT 105****M.M. 70****Time: 3 Hours****Note: All questions are compulsory. Make diagrams wherever required.****(10x3=30)****Q1. Long answer type questions. Attempt any three.**

- Define Health and factors affecting health.
- Describe in detail RNTCP programme of TB?
- What is the role of life style in preventing diseases?
- What are various health hazards of rural community?
- Describe in brief about National Health Policy?

(5x5=25)**Q2. Short answer type questions. Attempt any five.**

- Determinants of health
- What do you mean by Health Team concept?
- Mortality indicators of health.
- Write short note on current population of India and its effect on health?
- Community acquired infection.
- Role of hygiene in preventing infection in hospital.

(1x5=5)**Q3. Very short answer type questions. Attempt any five.**

- Write two indicators of health?
- Write two life style diseases?
- Write two determinants of health?
- Write full form of RNTCP?
- Define tribal community?
- Write two communicable diseases?

(1x10=10)**Q4. Multiple choice questions. Attempt all.****1) Health is**

- State of complete physical well being
- State of complete physical and social well being
- State of complete physical, mental, spiritual and social well being
- None

2) Types of family

- Nuclear
- Simple
- Complex
- All

3) Indicators of health are

- Mortality indicators
- GFR
- Fertility indicators
- Birth rate

4) Vector born disease control programme include

- AIDS
- TB
- Typhoid
- Malaria

5) Programme for Tuberculosis is

- NVBDCP
- RNTCP
- NRHM
- NLEP

6) Life style disorder includes

- Hypertension
- Diabetes
- Obesity
- all

7) A hospital-acquired infection is referred to as a

- nosecomial infection
- nosocongenial infection
- nosocomial infection
- notsocomial infection

8) Which of the following is national Health Programme:

- NACP
- RTCP
- TCNP
- CTNRP

9) Full form of RNTCP

- Revised national tetnus control programme
- Revised national tuberculosis control programme
- Revised national typhoid control programme
- Revised national taenia control programme

10) What are the causes of life style diseases

- Sedentary life
- over eating
- alcohol
- All of these