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Paper Code : BMLT-104/BPOT/BOTT/BMIT-101 B (SVSU:2022-23/R)

Enrollment No.

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 Liver
- b Describe classification of joints

Q2 Write short notes. Attempt any three:- (5X3=15)

- a Gross anatomy of breast
- b External features of thyroid gland
- c Differences between skeletal, smooth and cardiac muscles
- d Origin, insertion, nerve supply and actions of Biceps brachii muscle
- e Classification of nervous system

Q3 Write very short notes. Attempt any five :- (1X5=5)

- a Enumerate types of tissues
- b Enumerate bones forming shoulder joint
- c Enumerate functions of tongue
- d Enumerate muscles of arm
- e Enumerate lobes of right lung
- f define exocrine gland
- g Enumerate organs of female reproductive system

Q4 Multiple Choice Question. Attempt all. (1X5=5)

- a Sternocleidomastoid muscle is present in
1 Upper limb 2 Neck 3 Thorax 4 Lower limb
- b Radio ulnar joint is
1 Hinge joint 2 Condylar joint 3 Ball and socket joint 4 Pivot joint
- c Number of cranial nerves is
1 Twelve pairs 2 Ten pairs 3 Fourteen pairs 4 Sixteen pairs
- d Parotid gland is
1 Endocrine gland 2 Exocrine gland 3 Both exocrine and endocrine gland 4 Salivary gland
- e Humerus bone is present in
1 Arm 2 Forearm 3 Hand 4 Lower limb

SECTION-B

HUMAN PHYSIOLOGY (Max. Marks – 35)

Q1. Long answer type questions. Attempt any one. (10x1=10)

- a. List the hormones of Pituitary Gland . Explain Growth Hormone.
- b. Define Transport. Explain active and passive transport.

Q2. Short answer type questions. Attempt any three. (5x3=15)

- a. List the functions of Plasma Proteins .
- b. Erythroblastosis Foetalis .
- c. Contraceptives
- d. Glomerular Filtration Rate.
- e. Functions of Liver

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

(1x5=5)

- a. Micturition
- b. Peristalsis.
- c. Hypoxia
- d. Define Cardiac Cycle.
- e. Pernicious Anaemia.
- f. Surfactant.
- g. Type of Blood Cells.

Q 4. Multiple choice questions. Attempt all.

(1x5=5)

- a. The life span of a RBC is ----
 - i. 100 days
 - ii. 102 days
 - iii. 120 days
 - iv. 135 days
- b. Urine is temporarily stored in ----
 - i. Gall Bladder
 - ii. Urinary Bladder
 - iii. Kidneys
 - iv. Nephrons
- c. The process of union of male and female gamete is called -----.
 - i. Luteinization
 - ii. Implantation
 - iii. Neutralization
 - iv. Fertilization
- d. Hypertension is defined as :
 - i. Increase in systemic arterial blood pressure upto 210/110 mmHg
 - ii. Increase in systemic arterial blood pressure more than 260/150 mmHg
 - iii. Sustained elevation of systemic arterial blood pressure
 - iv. None of the above
- e. Functions of Ear are -----.
 - i. Balancing
 - ii. Hearing
 - iii. Both
 - iv. None of the above .

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Paper Code : BMIT-102

A (SVSU:2022-23/R)

Enrollment No.

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 construction of Dark Room with well labelled diagram.
- Define the Semiconductors and its types.
- Define the film processing in the dark room.
- Discuss the Interaction of X-rays with matter.
- Explain the X-ray room layout.

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

- Discuss about the process of radioactivity.
- Write down about the properties of x-rays.
- Discuss about the process of production of x-rays.
- Define the structure of Intensifying Screens.
- Discuss about the history of discovery of X-rays.
- Define the Radiographic Film.
- Define grids.

Q 3. Very short answer type questions. Attempt any five.**(1x5=5)**

- Define latent image.
- Enlist the shielding used for Radiation protection.
- Explain the isobars and isotopes.
- Define ALARA.
- What is the need for radiation protection in Radiology Department?
- Define Pentavalent and trivalent impurity doped semiconductors.
- Define Developer in Dark room and its function.

Q 4. Multiple choice questions. Attempt all.**(1x10=10)**

- TDS stands for:
 - Time distance shielding
 - Tall distance shield
 - Tungsten white stand
 - None of these
- The ingredient of the developer solution of the x-ray is:
 - Hydroquinone
 - Elon
 - Sodium bisulphate
 - Acetic acid
- Isomeric transition is the emission of:
 - x-rays
 - alpha rays
 - Beta rays
 - Gamma rays
- Which room is used to convert latent image into visible image:
 - x-ray room
 - dark room
 - Waiting room
 - None of these
- Which one of the following is an example of Pentavalent impurity:
 - Arsenic (As)
 - tungsten
 - Molybdenum
 - All of these
- The energy required to disassemble an atom into free electrons and a nucleus:
 - kinetic energy
 - Potential energy
 - Binding energy
 - Breaking energy
- A plastic sheet coated with fluorescent material called phosphors is:
 - intensifying screen
 - film
 - cassette
 - All of these
- 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
- Which of the following is the bulb watt used in dark room
 - 5 watts
 - 10 watt
 - 15 watts
 - 20 watts

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Paper Code : BMIT-103

C (SVSU:2022-23/R)

Enrollment No.

B.Sc. Medical Imaging Technology (BMIT) Ist Year

Subject: Medical Biochemistry (Subject Code: BMIT-103)

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)

- Describe the classification of Amino acid on the basis of Structure and chemical Nature.
- What is Cell? Describe the Mitochondria and chloroplast with labeled diagram.
- Describe the Fatty acid Synthesis in details.
- What is Carbohydrate? Describe the classification of carbohydrate.
- What is Lipoproteins? Describe the classification and function of lipoproteins.

Q2. Short answer type questions. Attempt any five.

(5x5=25)

- Write notes on medication application of radioisotopes and half life of radioisotopes.
- What is Polysaccharide? Define starch and cellulose with their structure.
- Explain Kreb's cycle and its energetic.
- What is Phospholipids? Describe the classification and function of phospholipids.
- Describe the structural organization of protein.
- Describe the Urea cycle.
- Describe the glycogenolysis.

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

(1x5=5)

- How many ATPs are produces in glycolysis?
- Write the example of pentose sugar.
- Write the name of ketone bodies.
- Write the name of unsaturated fatty acid.
- Write the name of hormones which secreted by Thyroid gland.
- Write the note on coenzyme and apoenzyme.
- Write the name of Sulphur containing amino acid

Q4. Multiple choice questions. Attempt all.

(1x10=10)

a. The sugar found in milk is

- Glucose
- Fructose
- Lactose
- Maltose

b. Pyruvic acid is the end product of

- Glycolysis
- Gluconeogenesis
- Glycogenesis
- None of These

c. The main control system of cell is

- Mitochondria
- Chloroplast
- Nucleus
- None of these

d. The enzymes of β -oxidation are found in

- Cytoplasm
- Mitochondria
- Golgi body
- None of these

e. The number of double bonds present in arachidonic acid is

- 1
- 2
- 3
- 4

f. Factors affecting enzyme activity

- Temperature
- pH
- Concentration of substrate
- All of These

g. Lipids are mainly store in

- Liver
- Adipose tissue
- Muscles
- None of these

h. The nitrogenous base present in Lecithin is

- Ethanolamine
- Serine
- Choline
- None of These

i. Glucuronic acid is formed by the oxidation of

- Fructose
- Glucose
- Mannose
- None of these

j. Peptide Bonds are preset In

- Lipids
- Carbohydrates
- Proteins
- None of These

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Paper Code : BMIT-104

C (SVSU:2022-23/R)

Enrollment No.

B.Sc. Medical Imaging Technology (BMIT) Ist Year

Subject: Basics Radiography and Radiographic Equipment

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)

- Explain Darkroom construction with its diagram.
- Write down the anatomical structures, image criteria, patient positioning, part positioning of cervical spine AP and LAT.
- Differentiate between Rotating and Stationary Anode.
- Explain Radiographic positioning and radiographic planes.
- Explain Radiographic cassette, its types and functions.

Q2. Short answer type questions. Attempt any five.

(5x5=25)

- Differentiate between Dry and Wet side of the Darkroom.
- Explain the types of radiographic grids.
- Explain different layers of Intensifying screen.
- What are X-Ray filters?
- Explain the patient positioning and part positioning of Chest Oblique.
- Explain the patient positioning of L-S Spine AP/LAT.
- Explain the interaction of X-Rays with matter.

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

(1x5=5)

- What is Sagittal plane?
- Explain coronal and transverse plane.
- What is the target of mammographic machine made up of?
- What is the primary function of X-ray grid?
- Explain Lithotomy position.
- Explain Attenuation and Absorption of X-rays.
- Draw a well labeled diagram of X-Ray tube.

Q4. Multiple choice questions. Attempt all.

(1x10=10)

- a. Filters used in radiographic X-Ray tubes are generally composed of
- | | | | |
|--------------|------------|----------|----------|
| i. Aluminium | ii. Copper | iii. Tin | iv. Lead |
|--------------|------------|----------|----------|
- b. Skyline view is used for
- | | | | |
|----------|-------------|--------------|---------------|
| i. Talus | ii. Scapula | iii. Patella | iv. Hip joint |
|----------|-------------|--------------|---------------|
- c. The vertebral column normally consists of small irregular bones called vertebrae.
- | | | | |
|-------|-------|---------|-------|
| i. 12 | ii. 5 | iii. 33 | iv. 7 |
|-------|-------|---------|-------|
- d. Lordotic view of chest is done for
- | | | | |
|-----------------------|--------------------|-------------------------|-------------------|
| i. Thoracic vertebrae | ii. Apices of lung | iii. Lower part of lung | iv. Thyroid gland |
|-----------------------|--------------------|-------------------------|-------------------|
- e. The front surface of the cassette should be made up of
- | | | | |
|------------|------------|-----------|----------|
| i. Plastic | ii. Copper | iii. Lead | iv. Iron |
|------------|------------|-----------|----------|
- f. The back cover of the cassette is made up of
- | | | | |
|-----------|-------------|-----------|----------|
| i. Carbon | ii. Plastic | iii. Lead | iv. Iron |
|-----------|-------------|-----------|----------|
- g. The anode and cathode are enclosed in a
- | | | | |
|-----------------|-------------|------------|----------|
| i. Borosilicate | ii. Plastic | iii. Steel | iv. Iron |
|-----------------|-------------|------------|----------|
- h. Who was W.C. Roentgen?
- | | | | |
|--------------------------|----------------------------|-----------------------|------------|
| i. Canadian technologist | ii. Australian radiologist | iii. German physicist | iv. Farmer |
|--------------------------|----------------------------|-----------------------|------------|
- i. Melting point of Tungsten target is
- | | | | |
|----------------|-----------------|------------------|-----------------|
| i. 1480 degree | ii. 2800 degree | iii. 2000 degree | iv. 3370 degree |
|----------------|-----------------|------------------|-----------------|
- j. By using grids, contrast is
- | | | | |
|-------------|---------------|----------------|----------|
| i. Improved | ii. Decreased | iii. No effect | iv. None |
|-------------|---------------|----------------|----------|

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Paper Code : BRIT-105

C (SVSU:2022-23/R)

Enrollment No.

B.Sc. Medical imaging Technology (BMIT) 1st Year**Subject: Community Health Care****Subject Code: BRIT 105****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)**

- Describe Health hazards to tribal community?
- Describe in detail RNTCP programme of TB?
- Describe various preventive measures for diabetes?
- What is the meaning and features of urban community?
- Describe in brief about Family welfare programme?

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

- Define factors affecting health?
- What do you mean by Health Team concept?
- Indicators of health.
- Write short note on current population of India and its effect on health?
- Hospital acquired infection.
- Role of hygiene in preventing infection in hospital.

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

- Write two indicators of health?
- Write two life style diseases?
- Write two determinants of health?
- Write full form of RNTCP?
- Define rural community?
- Write two common hospital acquired infections?

Q4. Multiple choice questions. Attempt all.**(1x10=10)****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
- Joint
- Both
- None

3) Indicators of health are

- Mortality indicators
- GFR
- Fertility indicators
- Birth rate

4) Vector born disease control programme include

- AIDS
- TB
- Typhoid
- Dengue

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
- nosocomial infection
- nosocomial infection
- nosocomial infection

8) Which of the following is National Health Programme:

- NACP
- RTCP
- TCNP
- CTNRP

9) Full form of RNTCP

- Revised national tetanus 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