

B.Sc. CRITICAL CARE TECHNOLOGY

FIRST YEAR

PAPER I – ANATOMY, PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code: 801101

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. With suitable diagrams answer the following about Heart:
 - a) Introduction
 - b) External features
 - c) Surface marking of the Borders of the Heart
 - d) Surface marking of the Cardiac valves and Auscultatory areas.
2. Describe about the cell under the following headings with suitable diagrams:
 - a) Structure and functions of cell membrane
 - b) Endoplasmic reticulum
 - c) Mitochondria
 - d) Nucleus.
3. Classify Lipids based on their chemical composition.

II. Write notes on:

(8 x 5 = 40)

1. Internal features of Right Atrium.
2. Kidneys: a) External features b) Location c) Shape, size weight and orientation (Draw diagrams wherever applicable).
3. Electrocardiogram.
4. Insulin and Diabetes Mellitus.
5. Lung volumes and capacities.
6. Define enzymes. Explain enzyme inhibition.
7. Give a brief note on Conjugated Protein.
8. List out the Fat Soluble Vitamins. Give a detailed account on Vitamin A.

III. Short Answers on:

(10 x 3 = 30)

1. Draw the diagram of Bronchopulmonary segment and label its parts.
2. How many Carpal Bones are there in the wrist? Name them.
3. Draw a neat diagram of the Cross Section of Kidneys showing the naked eye structure and label its parts.
4. Causes of Renal Failure.
5. Draw a neat diagram of Agranulocytes. Label its parts & mention its peculiar features.
6. Write a brief note of Automatic and Neurogenic Bladder.
7. Write the functions of Phospholipids.
8. Explain the principle of Benedict's Test.
9. Write a note on Colles fracture.
10. What is Pellagra?

**B.Sc. OPERATION THEATRE AND ANAESTHESIA TECHNOLOGY /
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PAPER I – ANATOMY, PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code: 801101

Time : Three Hours

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on:

**Pages Time Marks
(Max.) (Max.) (Max.)**

- | | | | |
|---|---|---------|----|
| 1. Classify the Muscles and give a detailed account on Deltoid muscle. | 7 | 20 min. | 10 |
| 2. Define Blood pressure. Mention its normal value and add a note on factors regulating blood pressure. | 7 | 20 min. | 10 |
| 3. Classify lipids with suitable examples. Add a note on physiological importance of lipids. | 7 | 20 min. | 10 |

II. Write notes on:

- | | | | |
|--|---|---------|---|
| 1. Blood supply of heart. | 4 | 10 min. | 5 |
| 2. Lungs. | 4 | 10 min. | 5 |
| 3. Humerus. | 4 | 10 min. | 5 |
| 4. Stomach. | 4 | 10 min. | 5 |
| 5. Taste pathway. | 4 | 10 min. | 5 |
| 6. Hazards of blood transfusion. | 4 | 10 min. | 5 |
| 7. Micturation reflex. | 4 | 10 min. | 5 |
| 8. Reducing property of monosaccharides. | 4 | 10 min. | 5 |

III. Short Answer on :

- | | | | |
|---|---|--------|---|
| 1. Name the structures forming Waldeyer's ring. | 2 | 4 min. | 3 |
| 2. Mention the arteries taking part in the formation of circle of Willis. | 2 | 4 min. | 3 |
| 3. Superior vena cava. | 2 | 4 min. | 3 |
| 4. Cushing Syndrome. | 2 | 4 min. | 3 |
| 5. Plasma protein. | 2 | 4 min. | 3 |
| 6. Spermatogenesis. | 2 | 4 min. | 3 |
| 7. Iron deficiency anemia. | 2 | 4 min. | 3 |
| 8. Metabolic acidosis. | 2 | 4 min. | 3 |
| 9. Enumerate thyroid function tests. | 2 | 4 min. | 3 |
| 10. Effect of PH on rate of enzyme activity. | 2 | 4 min. | 3 |

[LC 0212]

FEBRUARY 2013

Sub. Code: 1101

**B.Sc. OPERATION THEATRE AND ANAESTHESIA TECHNOLOGY /
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FIRST YEAR

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Q.P. Code: 801101

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Regulation of respiration.
2. Answer the following about the heart:
a) Situation b) Dimensions c) Surfaces d) Apex e) Right ventricle.
3. Structure of protein and urea cycle.

II. Write notes on:

(8 x 5 = 40)

1. Bio medical importance of phospholipids.
2. Micturition.
3. Pulmonary tuberculosis.
4. Artificial respiration.
5. Cyanosis.
6. Pleura.
7. Functions of skin.
8. Insulin.

III. Short Answers on:

(10 x 3 = 30)

1. Hering Breuer Reflex.
2. Caisson's disease.
3. Hyperkalemia.
4. Emphysema.
5. A. Fovea. B. sinus. C. hamulus.
6. Covering of skeletal muscle.
7. Difference between voluntary muscle and involuntary muscle.
8. Nissl's Bodies.
9. Lower end of the humerus.
10. Scurvy.

[LD 0212]

AUGUST 2013

Sub. Code: 1101

**B.Sc. OPERATION THEATRE AND ANAESTHESIA TECHNOLOGY /
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FIRST YEAR

PAPER I – ANATOMY, PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code: 801101

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Name the chambers and Valves of the heart. Briefly describe the blood supply of heart?
2. Mention the parts of G.I. Tract. Briefly describe the role of bile in digestion?
3. Define the enzyme and classify it? Briefly describe the factors affecting the enzyme activity?

II. Write notes on:

(8 x 5 = 40)

1. Intercostal space.
2. Name the bones of appendicular skeleton?
3. Name the parts of respiratory system with suitable diagram.
4. Functions of cell.
5. Functions of Haemoglobin.
6. Cardiac cycle.
7. Function of proteins.
8. Fat soluble vitamins.

III. Short Answers on:

(10 x 3 = 30)

1. Name the parts of bone.
2. Name the parts of excretory system.
3. Name the pleural recesses.
4. Name the flexor muscles of the arm.
5. Components of blood.
6. Endocytosis.
7. Name the renal disorders.
8. Name the endocrine glands.
9. Basal metabolic rate.
10. Buffers.

[LE 0212]

FEBRUARY 2014

Sub. Code: 1101

**B.Sc. OPERATION THEATRE AND ANAESTHESIA TECHNOLOGY /
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FIRST YEAR

PAPER I – ANATOMY, PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code: 801101

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain Heart under following headings :
 - a) External Feature.
 - b) Right Atrium.
 - c) Surface marking.
2. Explain the events of Cardiac Cycle in detail.
3. Describe in detail about Glycolysis, its energetics and regulation.

II. Write notes on:

(8 x 5 = 40)

1. Biceps brachii.
2. Ureter.
3. Sternum.
4. Platelets.
5. Role of bile in digestion.
6. Functions of thyroxine.
7. Walds visual cycle.
8. Enzyme pattern in Myocardial infraction.

III. Short Answers on:

(10 x 3 = 30)

1. Muscles of Respiration.
2. Cartilage.
3. Boundary of Thoracic inlet.
4. Supinator.
5. Lung volume.
6. Insulin.
7. Mention the phases of Menstrual cycle.
8. Balanced diet.
9. Muco polysaccharides.
10. Lipoproteins.

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Q.P. Code: 801101

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain the chambers, valves and major blood vessels of the heart with suitable examples.
2. Define blood pressure. Explain the procedure for recording blood pressure. Add a note on hypertension.
3. Write the dietary sources, daily requirement, functions and deficiency Features of Vitamin A.

II. Write notes on:

(8 x 5 = 40)

1. Functions of Respiratory system.
2. Menstrual cycle.
3. Role of bile in digestion.
4. Bronchopulmonary segments.
5. Mention the bones and joints of the upper limbs.
6. Write the origin, insertion and action of biceps muscle of the arm.
7. Classify carbohydrates with suitable examples.
8. Nutritional disorders.

III. Short Answers on:

(10 x 3 = 30)

1. Renal function test.
2. Define Cardiac cycle.
3. Mention the types of blood groups.
4. Functions of cerebrospinal fluid.
5. What is pleura?
6. Draw and label the parts of excretory system.
7. Vertebral column.
8. What is a buffer?
9. Functions of lipids.
10. What is Basal Metabolic Rate?

[LG 0215]

FEBRUARY 2015

Sub. Code: 1101

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FIRST YEAR

PAPER I – ANATOMY, PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code: 801101

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Define cardiac output. What are the factors which regulate it?
2. Write about glucose and glycogen metabolism.
3. Osteology of upper limb and lower limb.

II. Write notes on:

(8 x 5 = 40)

1. Lung volumes and lung capacities.
2. Auscultatory areas.
3. Pituitary hormones.
4. Spermatogenesis.
5. Trachea and bronchial tree.
6. Factors affecting enzyme activity.
7. Erythrocyte sedimentation rate.
8. Chambers and valves of heart.

III. Short Answers on:

(10 x 3 = 30)

1. Renal function test.
2. Buffers.
3. Exocytosis.
4. Pericardium.
5. Respiratory quotient.
6. Functions of bile.
7. Cerebrospinal fluid.
8. Respiratory movements.
9. Urinary bladder.
10. Basal metabolic rate.

[LH 0815]

AUGUST 2015

Sub. Code: 1101

**B.Sc. OPERATION THEATRE AND ANAESTHESIA TECHNOLOGY /
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FIRST YEAR

PAPER I – ANATOMY, PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code: 801101

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe the external and internal features of the human lung.
2. List the coagulation factors and describe the blood coagulation pathways in detail.
3. Classify bones based on their shape and give examples.

II. Write notes on:

(8 x 5 = 40)

1. Describe mitosis.
2. Coronary circulation.
3. Describe the stages of fertilization.
4. Gross anatomy of the stomach.
5. Thyroid gland.
6. Acid base disorders.
7. Normal ECG.
8. Blood grouping.

III. Short Answers on:

(10 x 3 = 30)

1. Functions of mitochondria.
2. Role of bile.
3. Functions of platelets.
4. Functions of sodium in the body.
5. Name any 3 hormones secreted by anterior pituitary gland & write 2 functions for each.
6. Define coronal plane.
7. Name the parts of the small intestine.
8. Name the lobes of the cerebrum.
9. Name the salivary glands.
10. What are the criteria for the diagnosis of diabetes mellitus based on blood sugar levels?

[LI 0216]

FEBRUARY 2016

Sub. Code: 1101

**B.Sc. OPERATION THEATRE AND ANAESTHESIA TECHNOLOGY/
CRITICAL CARE TECHNOLOGY**

FIRST YEAR

PAPER I – ANATOMY, PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code: 801101

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

I. Elaborate on:

(3 x 10 = 30)

1. Define cardiac output and the factors affecting it.
2. Classify Joints. Describe the different types of synovial joints with suitable examples.
3. Fat soluble vitamins.

II. Write notes on:

(8 x 5 = 40)

1. Describe mitosis.
2. External features of the right lung.
3. Gross anatomy of the stomach.
4. Functions of haemoglobin.
5. Lung volumes and capacities.
6. Regulation of breathing.
7. Functions of CSF.
8. Renal function test.

III. Short Answers on:

(10 x 3 = 30)

1. Functions of mitochondria.
2. Name the intercostal muscles.
3. Rh factor.
4. Functions of saliva.
5. Clinical manifestations of thiamine deficiency.
6. Name the electrolytes that are routinely measured in clinical laboratory along with their normal values.
7. Types of RNA and their functions.
8. Name the coverings of the brain.
9. Name three structures that drain into the right atrium.
10. Name two common diseases affecting bones.
