

B.Sc. OPERATION THEATRE AND ANAESTHESIA TECHNOLOGY
(New Syllabus 2015-2016)

FIRST YEAR

PAPER I – APPLIED BASIC SCIENCE

Q.P. Code: 801116

Time : Three Hours

Maximum : 100 Marks

Answer All Questions.

I. Elaborate on:

(3 x 10 = 30)

1. Give detailed account on glucose metabolism.
2. Draw a neat diagram of Scapula, label its parts and explain its features and muscle attachment.
3. Define Cardiac Output. Explain the factors affecting Cardiac Output.

II. Write notes on:

(8 x 5 = 40)

1. Define Micturition. Add a note on Micturition reflex.
2. Explain the factors affecting enzyme activity.
3. Define Erythrocyte sedimentation rate and add a note on it.
4. Describe the composition and functions of blood.
5. Explain the Phases of Menstrual cycle.
6. Explain about the structure of Kidney.
7. Explain the functions of proteins.
8. Sequence of events in Neuromuscular Junction.

III. Short Answers on:

(10 x 3 = 30)

1. Functions of Calcium.
2. Functions of Mitochondria and Golgi Apparatus.
3. Auscultatory areas.
4. Respiratory Quotient.
5. Define Matching and Cross Matching.
6. Functions of Posterior Pituitary hormones.
7. Buffers.
8. Define Basal Metabolic Rate.
9. Draw the diagram of a typical Rib and name its parts.
10. Write the Origin and insertion of Deltoid.

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I. Elaborate on:

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1. Define Blood pressure and write about the factors affecting Blood pressure.
2. Write the dietary sources, requirement, functions and deficiency features of Vitamin-A.
3. Describe the hip joint under the following headings:
 - a) Articular surfaces
 - b) Ligaments
 - c) Relations
 - d) Muscles and movements
 - e) Applied Anatomy

II. Write notes on:

(8 x 5 = 40)

1. Marasmus and Kwashiorkor.
2. Write a note on Urinary Bladder.
3. Describe the Femoral triangle.
4. Structure of cell membrane.
5. Define BMR and explain the factors affecting BMR.
6. Functions of Insulin.
7. Calcium Homeostasis.
8. Write the functions of Platelets.

III. Short Answers on:

(10 x 3 = 30)

1. Name the coverings of kidney.
2. Brachialis Muscle.
3. Pericardium.
4. Layers of Aorta.
5. Isoenzymes
6. Beri-Beri.
7. Effect of temperature on enzyme activity.
8. Functions of eosinophil.
9. Landsteiner's Law.
10. Define Tidal volume.

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I. Elaborate on:

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1. Describe the process of formation of urine in the body.
2. Classify proteins. What are the functions of proteins in the human body?
3. Classify joints. Describe the types of synovial joints using suitable examples.

II. Write notes on:

(8 x 5 = 40)

1. Normal level and functions of platelets.
2. Secretions of Thyroid gland and their functions.
3. Role of bile in digestion.
4. Sleep cycle.
5. Lung volumes.
6. Hyper sensitivity reactions.
7. Valves of the Heart.
8. Conducting part of the respiratory system.

III. Short Answers on:

(10 x 3 = 30)

1. Name three cell organelles and their functions.
2. Define stroke volume.
3. List the differences between skeletal, smooth and cardiac muscle.
4. What is meant by blood pressure? What is the normal adult value of blood pressure?
5. Phases of the menstrual cycle.
6. Transverse plane.
7. Universal blood donor.
8. Functions of sodium in the body
9. One fat soluble vitamin and its functions.
10. What are the criteria for the diagnosis of diabetes mellitus based on blood sugar levels?

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Answer All Questions.

I. Elaborate on:

(3 x 10 = 30)

1. Describe the menstrual cycle.
2. Name the 2 types of diabetes mellitus. Describe briefly their pathogenesis, clinical features and laboratory investigations.
3. With the help of a labelled diagram, write about the kidney under the following headings
(a) External features (b) Internal features (c) Blood supply

II. Write notes on:

(8 x 5 = 40)

1. Renal Function test.
2. Neuromuscular Junction.
3. Secretions of Adrenal gland and their functions.
4. Exocrine secretions of the pancreas.
5. Respiratory movements.
6. Bronchopulmonary segments.
7. Chambers of the heart.
8. Classification of bones based on shape.

III. Short Answers on:

(10 x 3 = 30)

1. Anatomical position.
2. Endocytosis.
3. Types of fibrous joint.
4. Trigone of the bladder.
5. Components of the hip bone.
6. Universal blood recipient.
7. Functions of plasma.
8. Parts of the small intestine.
9. Three modes of contraception.
10. Sources and functions of vitamin E.

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1. With the help of a diagram describe the structure of an animal cell.
2. Name the 2 types of diabetes mellitus. Describe briefly their pathogenesis, clinical features and laboratory investigations.
3. With the help of a labelled diagram write about the heart under the following headings
(a) external features (b) coverings (c) arterial supply and d) innervation

II. Write notes on:**(8 x 5 = 40)**

1. Describe the structure of an RBC. Where is it produced in the body? What are its functions?
2. List the functions of the kidney.
3. What is a buffer? Describe briefly the buffer systems in the body.
4. Functions of CSF.
5. Cartilaginous joints.
6. General features of inflammation.
7. Intercostal space.
8. Internal features of the urinary bladder.

III. Short Answers on:**(10 x 3 = 30)**

1. Anatomical position.
2. Coronal plane.
3. Parts of the sternum.
4. Define a bronchopulmonary segment.
5. Exocytosis.
6. Waves of Electro cardiogram.
7. List two functions of thyroid hormones.
8. Three functions of Vitamin C.
9. Types of White blood cells.
10. Universal recipient.

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Answer All Questions.

I. Elaborate on:

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1. Write in detail about Viral Infections.
2. Elaborate the Classification of Proteins.
3. Describe the situation, external features and chambers of the heart in detail with suitable diagram.

II. Write notes on:

(8 x 5 = 40)

1. Respiratory Movements.
2. Structure of Kidney.
3. Specific Dynamic action.
4. TORCH Complex.
5. Bronchial Tree.
6. Functions of Growth Hormone.
7. Significance of Henderson Equation.
8. Apoptosis and Necrosis.

III. Short Answers on:

(10 x 3 = 30)

1. Three examples of Bacterial infections.
2. Marasmus.
3. First Rib.
4. Erythrocyte Sedimentation Rate.
5. Joints of Sternum.
6. Glomerular Filtration Rate.
7. Respiratory Quotient.
8. ECG Waves.
9. Name any three Carcinogens.
10. Draw a neat labeled diagram of a nephron.

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Answer All Questions.

I. Elaborate on:

(3 x 10 = 30)

1. Explain Acute and Chronic Inflammation.
2. Give an account on Glycolysis.
3. Define Electrocardiogram and describe in detail the waves of a normal Electrocardiogram.

II. Write notes on:

(8 x 5 = 40)

1. Vitamin D.
2. Causes of Cell Injury.
3. Cell Structure and Functions of Various Organelles.
4. Fungal Infections.
5. Lung Volumes and Capacities.
6. Coronary arteries.
7. Basal Metabolic Rate.
8. Bronchopulmonary segments.

III. Short Answers on:

(10 x 3 = 30)

1. Innate Immunity.
2. Define derived lipids with example.
3. Landsteiner's Law.
4. Cartilages forming the Larynx.
5. Molarity and Normality.
6. Anatomical Positions.
7. Typical ribs.
8. Functions of Leucocytes.
9. Features of Benign Tumours.
10. Balanced Diet.
