KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.
(Declared as Deemed-to-be-University u/s 3 of the UGC Act, 1956)

Accredited 'A' Grade by NAAC (2nd Cycle) Placed in 'A' Category by MHRD (GoI)

B.SC. MLT, RADIOGRAPHY, ANAESTHESIA, CARDIAC CARE, NEUROSCIENCE, PERFUSION, B.SC. IN RENAL DIALYSIS TECHNOLOGY, OPTOMETRY, ENDOSCOPY AND CRITICAL CARE TECHNOLOGY-I SEMESTER-FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

HUMAN ANATOMY

Q.P. Code:1901

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Describe the heart under following headings:
   a) Gross anatomy b) Applied anatomy. (8+2)

2. Describe bone under following headings:
   a) Classification of bones
   b) Parts of long bones
   c) Blood supply of long bone
   d) Types of ossification

3. Name the parts of respiratory tract. Describe the gross anatomy of left lung. (5+5)

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Anatomical position.
5. Classification of joints.
6. Blood supply of heart.
7. Write a note on pleura.
8. Bones forming appendicular skeleton.
9. Draw and label the microscopic structure of lung.
10. Blood supply of spinal cord.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

11. Name the meninges covering the brain.
12. Name the paranasal air sinuses.
13. Name the **three** cartilages of larynx.
14. Name the **three** parts of pharynx.
15. Name the **three** types of cartilage.

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B.SC. IN ANESTHESIA TECHNOLOGY/PERFUSION TECHNOLOGY/CARDIAC CARE TECHNOLOGY -III SEMESTER FEBRUARY 2022

Time: 3 Hours Max. Marks: 80

APPLIED PHARMACOLOGY

Q.P. Code:1917/A

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Classify anti-adrenergic drugs explain the mechanism of action, therapeutic uses and adverse effect of propranolol? (4+1+2+3)
2. Classify bronchodilators. Explain the mechanism of action, therapeutic uses and adverse effect of Salbutamol? (4+1+2+3)
3. Classify various routes of drug administration with suitable examples. Enumerate merits and demerits of intravenous route. (6+2+2)

SHORT ESSAY QUESTIONS (Answer any SIX): **6 X 5 = 30**

4. Therapeutic uses and adverse effect of corticosteroids.
5. Therapeutic uses and adverse effect of atropine.
6. Treatment and management of gout.
7. Therapeutic uses and adverse effect of antithyroid drugs.
8. Therapeutic uses and adverse effect of oral hypoglycaemic drugs.
9. Compare salient features of aspirin and paracetamol.
10. Therapeutic uses and adverse effect of adrenaline.

SHORT ANSWER QUESTIONS (All are compulsory): **10 X 3 = 30**

11. Mention **three** uses and adverse effect of prazosin.
12. Mention **three** factors influencing drug absorption with suitable examples.
13. Define and mention drugs causing tachyphylaxis.

14. Mention **three** drugs, their uses and adverse effect in rheumatoid arthritis.
15. Name **three** antihistaminic drugs, their uses and adverse effect.
16. Mention **three** routes of drug excretion with suitable examples.
17. Mention **three** nasal decongestants, their uses and adverse effect.
18. Therapeutic uses and adverse effect of Physostigmine and neostigmine.
19. Mention **three** teratogenic drugs and their adverse effect.
20. Name **three** world health organization approved fixed dose combination drugs and their uses.

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Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN NEUROSCIENCE TECHNOLOGY -III SEMESTER FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

BASIC NEUROSCIENCES-I

Q.P. Code:1924/A

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Describe the anatomy of brachial plexus.
2. Describe the anatomy and physiology of neuromuscular junction.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Frontal lobe.
4. Visual pathway.
5. Action potential.
6. Sympathetic nervous system.
7. Stages of sleep.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. Muscles supplied by ulnar nerve.
9. Muscle supplied by common peroneal nerve.

10. Motor unit.
11. Pyramidal tract.
12. Facial nerve.

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Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN MEDICAL LABORATORY TECHNOLOGY
III SEMESTER – FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

BIOCHEMISTRY-III

Q.P. Code:1911

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Name the ketone bodies. How are they formed in the body? Describe the role of ketone bodies in starvation and uncontrolled diabetes. (1+6+3)
2. Define chromatography. Write its principle, types and applications. (1+2+3+4)
3. Describe how glucose is metabolized to pyruvate in the body. Discuss the fate of pyruvate in erythrocytes. (8+2)

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. List the analytical and therapeutic uses of enzymes.

5. What are the indications for OGTT (Oral Glucose Tolerance Test)? Explain the procedure. (2+3)
6. Discuss molecular defects and biochemical changes in β-thalassemias.
7. What are lipoproteins? Classify them and explain their functions. (1+2+2)
8. Name the plasma proteins. Write their functions and significance.
9. Write the significance of hexose monophosphate shunt pathway.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 3 = 15

10. Mention the enzyme defect and clinical findings in Von Gierke's disease.
11. Explain the carnitine shuttle.
12. Draw the normal pattern of plasma protein electrophoresis.
13. Write the normal levels of blood glucose (fasting random and post prandial).
14. Describe the molecular defect in sickle cell anaemia and its implications.

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Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN RADIOGRAPHY-III SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

RADIATION PHYSICS PART-I

Q.P. Code:1914

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: 2 X 10 = 20

1. Explain in detail about construction and working principle of Ionization chambers.

2. Explain in detail about photoelectric effect and its significance in diagnostic radiology.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Write a note on Pocket dosimeter.
4. Write a note on 12 pulse rectifier.
5. Write a note on technical protective consideration during mammography.
6. Write a note on factors influencing scatter radiation.
7. Write a note on properties of X-rays.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. Write a short note on quality and intensity of X-ray.
9. Draw a labelled diagram of film badge.
10. Write a short note on need and aim for radiation protection.
11. Write a short note on work load, use factor.
12. Write a short note on ionization and excitation.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

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B.SC. IN ANESTHESIA TECHNOLOGY/PERFUSION TECHNOLOGY/CARDIAC CARE TECHNOLOGY -III SEMESTER FEBRUARY 2022

Time: 3 Hours Max. Marks: 80

APPLIED PHARMACOLOGY

Q.P. Code:1917

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Classify various routes of drug administration with suitable examples. Enumerate the merits and demerits of intravenous routes? (6+4)
2. Classify skeletal muscle relaxants. Explain the mechanism of action, therapeutic uses and adverse effect of pancuronium. (4+1+3+2)
3. Classify alpha blockers. Explain the mechanism of action, therapeutic uses and adverse effect of Prazosin? (3+1+3+3)

SHORT ESSAY QUESTIONS (Answer any SIX): **6 X 5 = 30**

4. Enumerate corticosteroids. Discuss its mechanism of action, therapeutic uses and adverse effect.
5. Enumerate bronchodilators. Discuss mechanism of action, therapeutic uses and adverse effect of salbutamol.
6. Enumerate beta blockers. Discuss mechanism of action, therapeutic uses and adverse effect of propranolol.
7. Enumerate oral hypoglycaemia drugs. Discuss mechanism of action, therapeutic uses and adverse effect of glipizide.
8. Enumerate anticholinergics. Discuss mechanism of action, therapeutic uses and adverse effect of atropine.
9. Discuss mechanism of action, therapeutic uses and adverse effect of radioactive iodine.
10. Discuss the factors influencing drug absorption with suitable examples.

SHORT ANSWER QUESTIONS (All are compulsory): **10 X 3 = 30**

11. Discuss **three** therapeutic uses and adverse effect of aspirin.
12. Discuss **three** therapeutic uses and adverse effect of cetirizine.
13. Discuss the treatment of gout.
14. Treatment of organophosphorus poisoning.
15. First pass metabolism.
16. Discuss **three** types of drug antagonism.
17. Discuss **three** therapeutic uses and adverse effect of adrenaline.
18. Discuss the drug therapy of migraine.
19. Treatment of drug allergy.
20. Treatment of morphine poisoning.

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B.SC. IN NEUROSCIENCE TECHNOLOGY -III SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

BASIC NEUROSCIENCES-I

Q.P. Code:1924

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Discuss the staging of sleep in adult person.
2. Discuss the anatomy and functional correlates of motor pathway.
3. Discuss the functional organization of autonomic nervous system.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Briefly discuss the functions of parietal lobes.
5. Write a short note on cerebellar anatomy.
6. Write a short note on generation and importance of action potential.
7. Briefly discuss the importance of ion channels.
8. What are the functions of the frontal lobes?
9. Briefly discuss the functions of basal ganglia.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Excitatory post-synaptic potentials.
11. Name the tracts in the spinal cord.
12. Histamine.
13. Epinephrine.
14. Alpha motor neuron.

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Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN OPTOMETRY III SEMESTER – FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

OCULAR ANATOMY AND VISUAL OPTICS

Q.P. Code:0127

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Draw a neat diagram of cross section of human eye and label the parts.
2. Draw a neat diagram of extra ocular muscles and label the parts. Write a brief note on its nerve supply.
3. Draw a neat diagram of lacrimal excretory apparatus and label the parts.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Enumerate the various axis of the eye with a neat diagram. Add a note on angle kappa.
5. Recording of visual acuity.
6. Enumerate the various steps of lacrimal sac syringing.
7. Pin hole examination.
8. Du-chrome test.
9. Action of extra ocular muscles.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Enumerate the various colour deficiencies.
11. History taking of the patient.
12. Visual acuity in an illiterate patient.
13. Presbyopia correction in a patient.

14. Method of recording intra-ocular pressure.

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Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. RENAL DIALYSIS TECHNOLOGY-IV SEMESTER

FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

APPLIED ANATOMY & PHYSIOLOGY RELATED TO DIALYSIS TECHNOLOGY

Q.P. Code:0118

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Discuss about blood supply of kidney, its anatomical variations and renal artery disorders.

2. Development of kidney and name development abnormalities of kidney.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Write in brief histology of kidney.
4. What is GFR and methods to estimate GFR?
5. Mention physiological values of
   a) Urea, Creatinine
   b) Electrolytes
   c) Calcium & Phosphorus
   d) Magnesium & Uric Acid

6. Write about basic anatomy of Kidney, Bladder, Urethra and Ureter.
7. Discuss in brief mechanism of urine formation.

SHORT ANSWER QUESTIONS (Answer any THREE): **3 X 5 = 15**

8. Write role of nutrition in renal disorders.
9. What is hyperkalaemia and how to treat it?
10. Anatomy of femoral artery its origin and its uses in renal failure.
11. Write about hormones produced by the kidney.
12. Basic nutrition in renal disease.

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Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN MEDICAL LABORATORY TECHNOLOGY-V SEMESTER FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

CLINICAL BIOCHEMISTRY-II

Q.P. Code:1982

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Explain the role of enzymes in clinical practice. Discuss the marker enzymes in liver, myocardium and pancreas. (4+4+2)
2. Explain the factors maintain calcium homeostasis. Add a note on functions of calcium. (6+4)
3. Explain various buffer systems of our body. Write the normal values of blood gas analysis. (6+4)

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Gastric function tests.
5. External quality control.
6. Explain about formation of renal calculi.
7. Phenylketonuria.
8. Biomedical waste management.
9. Principle, types and advantages of autoanalysers.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Errors in laboratory analysis.
11. Advantages of laboratory accreditation.
12. Applications of Gene therapy.
13. Semiautoanalysis
14. Explain isoenzyme with an example.

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B.SC. IN RADIOGRAPHY-V SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

RADIOGRAPHIC TECHNIQUE-II

Q.P. Code:1985

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Explain indications, contraindications, patient preparations procedure and filming for IVU/Excretory urography.

2. Explain indications, contraindications, patient preparation procedure and filming for barium swallow.

SHORT ESSAY QUESTIONS (All are compulsory): 5 X 5 = 25

3. Filming techniques for ASU (Ascending Urethrography).
4. Retrograde pyeloureterography.
5. Lumbar myelogram.
6. Fistulography.
7. Mammography.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 3 = 15

8. Indications for gastrograffin study.
9. List various drugs used in radiology procedures.
10. Indications for percutaneous trans hepatic cholangiography.
11. Patient preparations for HSG (Hysterosaphingogram).
12. Various oral contrast used in radiological procedures.

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B.SC. IN ANESTHESIA TECHNOLOGY -V SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

ANAESTHESIA TECHNOLOGY

Q.P. Code:1987

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Preparation of OT for patient posted for elective appendectomy with hypertension.

2. a) Discuss anaesthesia for LSCS.
   b) Write a note on spinal anaesthesia.

3. a) Describe pre anaesthetic evaluation of an obese patient.
   b) Enumerate complication in obese patients.

SHORT ESSAY QUESTIONS (Answer any FIVE) **5 X 5 = 25**

4. Write a note on acute pain management.
5. Ringer lactate.
6. Anaesthetic management of patient with bronchial asthma.
7. Blood transfusion.
8. Propofol.
9. Humidification.
10. Basic life support.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

11. Endotracheal tube.
12. Oxygen mask.
13. Atropine.
14. Spinal needle.
15. ASA physical status classification.

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FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

ELECTROCARDIOGRAPHY-II

Q.P. Code:1990

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Write the indications and contraindications of TMT and discuss in detail about the interpretation of TMT report.

2. Define cardiac arrest and its causes add a note on the drugs and procedures used in the management of cardiac arrest.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Holter monitoring-procedure and its usefulness.
4. Purpose of cardiac monitoring.
5. Indications to use defibrillator and its complications.
6. Myocardial perfusion scans.
7. ECG diagnosis of bradyarrythmias.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. ECG changes in hypokalemia.
9. Name **three** ventricular arrhythmias.
10. Uses of cardiac monitoring in ICCU.
11. ECG changes in Hyperkalaemia.
12. ECG changes in atrial fibrillation.

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B.SC. IN PERFUSION TECHNOLOGY-V SEMESTER FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

ADVANCED PERFUSION TECHNOLOGY-I

Q.P. Code:1992

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Discuss about the normal coagulation pathway and explain about the action of heparin.
2. Explain about the role of platelets in normal coagulation and explain how it affects the patient physiology on pump.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. How will you monitor and manage protamine reaction.
4. How will you manage inadequate venous drainage?
5. What is the check list before termination of CPB support?
6. What are the complications of blood transfusion?
7. How myocardial protective measures differ between normal sized heart and dilated heart with poor LV function.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. Enumerate complications of cardioplegia fluid.
9. Two stage venous cannula.
10. Complications of direct osteal cardioplegia cannula.
11. Heparin less bypass.
12. Hyperkalaemia management.

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B.SC. IN NEUROSCIENCE TECHNOLOGY -V SEMESTER FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

BASIC NEUROSCIENCES-III

Q.P. Code:1995

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Describe the clinical features and management of chronic inflammatory demyelinating polyradiculoneuropathies.
2. Discuss the inflammatory myopathies with emphasis on dermatomyositis and polymyositis.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Entrapment neuropathies.
4. Extrapyramidal disorders presenting with tremors.
5. Axonal neuropathies.
6. Transverse myelitis.
7. Neuropathy in diabetes mellitus.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. Ulnar neuropathy at elbow.
9. Myotonic disorders.
10. X-linked muscular dystrophies.

11. Rheumatic chorea.
12. Causes of compressive myelopathies.

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FIRST SEMESTER - B.Sc. NUTRITION AND DIETETICS DEGREE EXAMINATION – FEBRUARY 2022

Time: 3 Hours Max. Marks: 80

INTRODUCTION TO FOOD SCIENCE

Q.P. Code: 0136

Answers should be specific to the Questions asked.
Draw neat & labeled diagrams wherever necessary.
All the questions are compulsory.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Write a note on structure and nutritive value of a) Rice b) Wheat.
2. Explain nutritional assessment and what are its components.
3. Define pasteurization. Explain post-mortems changes in meat.

SHORT ESSAY QUESTIONS (Answer any EIGHT): **8 X 5 = 40**

4. What are macro-nutrients and micronutrients?
5. Explain hydrogenation of fat.
6. Define health and write a note on its determinants.

7. Briefly explain the role of eggs in cookery.
8. Write a note on structure of fish and meat.
9. Discuss the nutritional contribution of pulses to the diet.
10. Write about composition and nutritive value of egg.
11. Write about medicinal value of spices and condiments.
12. What is smoking point of fats and oils? Mention factors that lower smoking points.

SHORT ANSWER QUESTIONS (All are compulsory): 10 X 2 = 20

13. What is germination?
14. Mention **four** pigments present in fruits and vegetables.
15. What is malting of cereals?
16. Define balanced diet.
17. Write **two** merits and **two** demerits of moist heat cooking method.
18. Explain the term parboiling of rice.
19. What is fortification?
20. What is pasteurization? At what temperature in milk pasteurized.
21. Mention any **four** criteria for selection of fish.
22. Mention any **four** factor affecting crystallization of sugar.

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B.SC. MLT, RADIOGRAPHY, ANAESTHESIA, CARDIAC CARE, NEUROSCIENCE, PERFUSION, B.SC. IN RENAL DIALYSIS TECHNOLOGY, OPTOMETRY, ENDOSCOPY AND CRITICAL CARE TECHNOLOGY-I
SEMESTER-FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

HUMAN PHYSIOLOGY-I AND BIOCHEMISTRY

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
Use separate answer books for Section A and Section B

SECTION A : HUMAN PHYSIOLOGY-I Q.P. CODE : 1902 [30 Marks]

Question Number Marks

LONG ESSAY QUESTIONS (Answer any ONE): 1 X 10 = 10

16. Name the types of blood group system. Describe blood grouping test and cross matching. List the hazards of mismatched blood transfusion. (3+4+3)

17. Describe the origin, course, termination and functions of pyramidal tract. (2+4+2+2)

SHORT ESSAY QUESTIONS (Answer any TWO):
2 X 5 = 10

18. Explain visual pathway.
19. Action potential-phases and ionic basis.
20. Functions of cerebellum.

SHORT ANSWER QUESTIONS (All are compulsory):
5 X 2 = 10

21. Name any **two** anticoagulants.
22. Functions of rods and cones.
23. Primary active transport-definition with **one** example.
24. Name any **four** properties of synapse.
25. Cause and features of Myasthenia Gravis.

SECTION B : BASICS OF BIOCHEMISTRY Q.P. CODE : 1903 [30 Marks]

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any ONE): **1 X 10 = 10**

1. Classify carbohydrates with examples. What are Polysaccharides? Describe the structure and biomedical importance of homopolysaccharides. (4+1+5)
2. Classify amino acids based on their structure giving examples.

SHORT ESSAY QUESTIONS (Answer any TWO): **2 X 5 = 10**

3. What are buffers? Discuss any **two** buffer systems of the body.
4. Define phospholipids. Add a note on their functions.
5. Give the functional classification of proteins.

SHORT ANSWER QUESTIONS (All are compulsory):
5 X 2 = 10

6. Mention **three** safety measures to be taken in laboratory.
7. Define Atomic weight. Atomic structure and Valence.
8. Give **two** examples for each of the following:
    a) Aldopentose
    b) Ketoses
    c) Mucopolysaccharides
9. What are essential amino acids? Name them.
10. Structure and functions of DNA.

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B.SC. IN ANESTHESIA TECHNOLOGY-III SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 80

INTRODUCTION TO ANESTHESIA TECHNOLOGY

Q.P. Code:1918/B

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Define $EtCo_2$ and describe $EtCo_2$ graph.
2. Distinguish between red robber and PVC endotracheal tubes.
3. Discuss merits and demerits of closed breathing circuit.

SHORT ESSAY QUESTIONS (Answer any SIX): **6 X 5 = 30**

4. How to check anaesthesia circuits open and closed.
5. Mention the parts of high pressure system of anaesthesia machine.
6. Humidification.
7. Flexometalic (Armoured) endotracheal tube.
8. With the help of neat diagram mention parts of face mask.
9. Guedel's airway.
10. Macintosh laryngoscope.

SHORT ANSWER QUESTIONS (All are compulsory): **10 X 3 = 30**

11. Nasal prongs.
12. Oxygen cylinder.
13. Unidirectional values of circle system.
14. Sites of temperature monitoring.
15. Advantages of closed circuit of anaesthesia.
16. Magill's forceps.
17. Boyle's law.
18. Diameter index safety system.
19. Flow meter tubes.
20. Sodalime.

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B.Sc. IN MEDICAL LABORATORY TECHNOLOGY
III SEMESTER – FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

HISTOPATHOLOGY

Q.P. Code:1912

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Discuss organization of histopathology lab.
2. Classify fixatives. Add a note on aldehyde fixatives.
3. Discuss preparation and staining method of haematoxylin and Eosin stain.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Discuss maintaining of museum specimen.
5. Discuss various types of microtome knives.
6. Discuss various instruments used in grossing.
7. Discuss Cryostat.
8. Preparation of tissue embedded paraffin blocks.
9. Discuss polarizing microscope.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. How to confirm endpoint of decalcification.
11. Slide warmer.
12. Clearing agents.
13. Uses of ethanol.
14. Preparation of buffered formula.

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B.SC. IN RADIOGRAPHY-III SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

RADIATION PHYSICS PART-II

Q.P. Code:1915

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Explain in detail about construction and working principle of medium frequency generators.
2. Explain in detail about grids and its types.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Write a note on dedicated mammography equipement.
4. Write a short note on tube rating.
5. Write a note on high tension cables.
6. Write a note on digital fluoroscopy.
7. Write a note on semiconductor and its types.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. Write a short note on properties of electromagnetic radiation.

9. Draw a labelled diagram of full wave rectification.
10. Write a short note on line voltage drop.
11. Write a short note on line focus principle.
12. Write a short note on magnification radiography.

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B.SC. IN ANESTHESIA TECHNOLOGY-III SEMESTER FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

INTRODUCTION TO ANESTHESIA TECHNOLOGY

Q.P. Code:1918

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. a) Classification of breathing system.
   b) Write a note on Bair's and TR circuit.

2. a) Enumerate types of endotracheal intubation
   b) Write briefly about endotracheal intubation.
   c) Indication and contraindication of endotracheal intubation

3. a) Describe anaesthesia machine.
   b) List various safety features of anaesthesia workstation.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. a) Describe various medical gas cylinders.
   b) Colour coding and safety measure of cylinder.
5. Preparation of OT for general anaesthesia.
6. Oropharyngeal airway.
7. Airway gadgets used for airway management.
8. Laryngeal mask airway.
9. Flow meter assembly.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. PIN index.
11. Solar line canister.
12. Face masks.
13. Magill's forceps and uses
14. Flow meter assembly.

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B.SC. IN PERFUSION TECHNOLOGY -III SEMESTER FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

BASICS OF PERFUSION TECHNOLOGY-I

Q.P. Code:1920

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Write a note on normal coronary anatomy and indications for coronary angiogram.
2. How ECHO is useful in ischemic heart disease?

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. What are the different views of chest X-ray write any two differences between chest X-ray PA view and AP view?
4. Write a note on limitations & contraindications of peripheral angiogram.
5. What is the diagnostic criteria for aortic stenosis on ECHO.
6. What is the normal range of PT-INR APTT? What do you understand by raised PT-INR?
7. What are the renal function tests and their significance from perfusion point of view?

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. Write a short note on Carrel.
9. Controlled cross circulation.
10. Components of right heart border on chest X-ray PA view.
11. Draw a diagram of
    a) Normal ECG
    b) Atrial Fibrillation
    c) Ventricular tachycardia
12. ECHO findings of aortic regurgitation.

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Time: 3 Hours Max. Marks: 60

CARDIOLOGY

Q.P. Code:1922

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Write in detail about the definition, classification, causes of prevention of Hypertension.
2. Discuss about the prevalence, pathogenesis, clinical importance and preventive measures for atherosclerosis.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Chronic renal failure.
4. Systolic and diastolic heart failure.
5. Diagnosis and management of ventricular septal defect.
6. Causes, symptoms and management of aortic regurgitation.
7. Write a short note on Rheumatic fever.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Indications of cardiac MRI.
9. Mention **three** Acyanotic congenital heart diseases.
10. Central venous lines.
11. Mention **three** types of ventricular arrhythmias.
12. Treatment of Anaemia.

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B.SC. IN NEUROSCIENCE TECHNOLOGY -III SEMESTER FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

APPLIED TECHNOLOGY-I BASICS OF CLINICAL NEUROPHYSIOLOGY

Q.P. Code:1925

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Discuss the basic principles of recording in the clinical neurophysiology laboratory.
2. What are filters? Describe the application of filters in clinical neurophysiology. (2+8)
3. Discuss the principles and application of triggering in clinical neurophysiology.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Describe how you would be preparing the patient for electroencephalography.
5. Maintenance the electrical ground of the clinical neurophysiology laboratory.
6. What is aliasing? Describe the methods to avoid aliasing in the laboratory.
7. Describe the methods to reduce impedance in the clinical neurophysiology laboratory.
8. Briefly discuss the principles of amplification.
9. Electrodes used in electroencephalography.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. What is phase shift caused by the filters?
11. Nyquist theorem.

12. Analog to digital conversion.
13. Band pass filter.
14. Common mode rejection ratio.

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B.SC. IN OPTOMETRY III SEMESTER – FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

PHYSICAL OPTICS AND GEOMETRIC OPTICS

Q.P. Code:0128

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Discuss the newton's ring experiments and explain how it is used to determine the wavelength of sodium light.
2. Derive and expression of lateral magnification by a lens.
3. Explain the construction and working of Michelson interferometer.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Write a note on Nicol prism.
5. What is the application of interference of light?
6. Write a note on types of lens according to shapes.
7. What are the application of refraction and reflection of light?
8. Write a note on dispersive power of a prism.
9. Explain photoelectric effect.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Write a note on rectilinear propagation of light.
11. Define and explain dispersion of light.
12. What are laws of refraction?
13. Write a note on constructive and destructive interference of light.
14. Write a note on zone plate.

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B.SC. RENAL DIALYSIS TECHNOLOGY-IV SEMESTER

FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

PHARMACOLOGY RELATED TO DIALYSIS TECHNOLOGY

Q.P. Code:0120

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Discuss about drugs and dialysis. What are the precautions are taken prior to administering drug in kidney disease.

2. How do you classify antihypertensive? Mention in detail about calcium channel blockers, use side effects.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Write about haemodialysis concentrates, composition and dilution.
4. Write about diuretics its uses and side effects.
5. Write about Erythropoietin, its uses, contraindication and side effects.
6. Write about use of heparin, its uses and side effects in dialysis and how to prevent heparin bleeding post dialysis therapy.
7. Write about role of formalin in dialysis unit and adverse effects, traces of formalin in dialysis.

SHORT ANSWER QUESTIONS (Answer any THREE): **3 X 5 = 15**

8. Discuss about IV fluid therapy in renal disorders.
9. What you mean by dialyzable drugs and mention three drugs that are dialyzable.
10. Write about protamine sulphate in dialysis.
11. Use of sodium hypochloride in dialysis unit.
12. Write about peritoneal dialysis fluids.

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B.Sc. IN MEDICAL LABORATORY TECHNOLOGY–V SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

CYTOLOGY & CYTOGENETICS

Q.P. Code:1983

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. What is Karyotyping? Describe the technique for routine karyotyping. (2+8)

2. How do you collect and prepare body fluid for cytologic examination. Describe cytologic features of malignant and non-malignant effusions. (2+2+3+3)

3. What is mismatched blood transfusion? Discuss causes and prevention of mismatched blood transfusion. (2+4+4)

SHORT ESSAY QUESTIONS (Answer any FIVE): 5 X 5 = 25

4. Discuss importance of Bombay blood group.
5. Procedure and uses of cytospin.
6. Maturation index in cervical cytology.
7. Procedure for examination of sputum cytology.
8. Human chromosome nomenclature.
9. Chromosome aberrations in cancer.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 3 = 15

10. Discuss features of carcinoma-in-situ.
11. Enumerate spray fixatives with advantages.
12. Identification of sex chromosomes.
13. Indications for blood transfusion.
14. Enumerate the stains used in cytology.

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B.SC. IN RADIOGRAPHY-V SEMESTER

FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

IMAGING TECHNIQUE

Q.P. Code:1986

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. What are ultrasound transducers? Explain in detail construction and functioning of transducers.
2. Explain the basic principle of MRI in detail.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Define radioactive. Explain radioactive decay by beta emission.
4. Write a note on slip ring technology.
5. Write a note on continuous wave Doppler.
6. Explain CT protocol for abdomen with the history of pancreatitis.
7. Write a note on inversion recovery sequences.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. Precaution while handling radiopharmaceuticals.
9. CT number.
10. Doppler effect.
11. Useful artifacts in ultrasound.
12. Differences between T1 and T2 weighted MRI images.

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B.SC. IN ANESTHESIA TECHNOLOGY-V SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

REGIONAL ANAESTHESIA TECHNOLOGY

Q.P. Code:1988

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. a) Preparation of OT for spinal anaesthesia.
   b) Write a note on spinal anaesthesia.
2. a) Discuss difference between spinal and epidural anaesthesia.
   b) Discuss management of hypotensive after spinal anaesthesia.
3. a) What are the advantages of ultrasound guided nerve block.
   b) Enumerate various upper limb block
   c) Write in detail about one block.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Spinal needle.
5. Preparation, indication, contraindication and technique of Supraclavicular block.
6. Combined spinal epidural anaesthesia.
7. Management of intra operative hypotension after spinal anaesthesia.
8. Hazard of blood transfusion.
9. Caudal anaesthesia.
10. Wrist block.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

11. Drugs and Adjuvant drug used in regional anaesthesia.
12. Atropine.
13. Tonicity of local anaesthesia.
14. Acute pain management.
15. Complication of epidural anaesthesia.

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B.SC. IN CARDIAC CARE TECHNOLOGY -V SEMESTER FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

ECHOCARDIOGRAPHY

Q.P. Code:1991

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Contrast echocardiography types, indications, procedure and its clinical significance including myocardial contrast echo.
2. Echocardiographic features of contractive percardiatis.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Dobutamine stress echo in coronary artery disease.
4. Principles and usefulness of 3D echo cardiography.
5. Principles and usefulness of speckle tracking.
6. LV systolic function assessment by echo cardiography.
7. Echocardiographic features of restrictive cardiomyopathy.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Usefulness of echocardiography in emergency room.
9. Echocardiographic features of ASD.
10. Echocardiographic features of cardiac myxoma.
11. Dextrocardia echocardiographic features.
12. Indications for TEE.

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B.SC. IN PERFUSION TECHNOLOGY -V SEMESTER FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

ADVANCED PERFUSION TECHNOLOGY-II

Q.P. Code:1993

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. How paediatric cardiopulmonary bypass differs from adult cardiopulmonary bypass?
2. What are the monitoring required when patient is on ECMO?

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Cardioplegia delivery in minimal invasive cardiac surgery.
4. What are the disadvantages of DHCA?
5. Endoaortic cross clamp.
6. How will you avoid fluid overload during repeated cardioplegia delivery?
7. How will you investigate and manage low Po_2 value on ECMO?

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. pH stat strategy in paediatric CPB.
9. Composition of ST Thomas cardioplegia solution.
10. Comparison between ringer lactate and dextrose normal saline.
11. Management of metabolic acidosis.
12. What is the electrolyte imbalance expected in uncontrolled diabetes mellitus on pump?

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B.SC. IN NEUROSCIENCE TECHNOLOGY –V SEMESTER FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

APPLIED NERVE CONDUCTIONS, ELECTROMYOGRAPHY & EVOKED POTENTIALS

Q.P. Code:1996

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Describe the electrophysiological abnormalities in demyelinating neuropathies.
2. Describe electromyography finding in myopathy and neurogenic disorders.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Describe visual evoked potential abnormalities in optic neuropathy.
4. Discuss single fibre electromyography.
5. Discuss abnormalities of repetitive nerve stimulation in myasthenia.
6. Discuss the nerve conduction abnormalities in carpal tunnel syndrome.
7. Physiological variables affecting nerve conduction techniques.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 3 = 15

8. Turns amplitude ratio.
9. P 100.
10. Conduction block.
11. Electronystagmography.
12. H-reflex.

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FIRST SEMESTER - B.Sc. NUTRITION AND DIETETICS DEGREE EXAMINATION – FEBRUARY 2022

Time: 3 Hours Max. Marks: 80

PRINCIPLES OF HUMAN NUTRITION

Q.P. Code: 0137

Answers should be specific to the Questions asked.
Draw neat & labeled diagrams wherever necessary.

All the questions are compulsory.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. What is RDA? Explain factors affecting RDA.
2. Write briefly about deficiency manifestations of each water soluble vitamins.
3. Explain components of energy expenditure:
   a) BMR
   b) Physical activity
   c) Thermic effect of food.

SHORT ESSAY QUESTIONS (Answer any EIGHT): **8 X 5 = 40**

4. Write nutrition researches in India.
5. Explain the role of dietary fibre on health.
6. Define lipids. Write functions of lipids.
7. Write nutritional classification of amino acids.
8. Classify protein based on their function with examples.
9. Iodine deficiency disorder.
10. Define reference men and reference women.
11. Write of toxicity of fat soluble vitamins.
12. Briefly explain functions of Vit. A.

SHORT ANSWER QUESTIONS (All are compulsory): **10 X 2 = 20**

13. Define soluble and insoluble fiber.
14. Name four good quality proteins.
15. Name, sources of essential fatty acids.
16. Define malnutrition.
17. Mention sources of vitamic.
18. Define carbohydrate and mention sources.
19. Pro-vitamins of vitamin D.
20. Write symptoms of pellagra.
21. Write types of beriberi.
22. Define antioxidants. Give **two** examples.

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B.SC. MLT, RADIOGRAPHY, ANAESTHESIA, CARDIAC CARE, NEUROSCIENCE, PERFUSION, B.SC. IN RENAL DIALYSIS TECHNOLOGY, OPTOMETRY, ENDOSCOPY AND CRITICAL CARE TECHNOLOGY-I SEMESTER-FEBRUARY 2022

Time: 3 Hours **Max. Marks: 60**

HEMATOLOGY & CLINICAL PATHOLOGY AND MICROBIOLOGY-I

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
Use separate answer books for Section A and Section B

SECTION A : PATHOLOGY- BASIC HAEMATOLOGY Q.P. CODE : 1904 [30 Marks]

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any ONE): **1 X 10 = 10**

26. Discuss the morphology of W.B.C. in peripheral blood along with neat diagram.
27. Discuss **five** instruments used in haematology laboratory along with neat labelled diagrams.

SHORT ESSAY QUESTIONS (Answer any TWO): **2 X 5 = 10**

28. Discuss the procedures of differential count with normal values.
29. Discuss procedure of blood collection. Name the anticoagulants used for various hematological investigations.
30. Discuss hemoglobin estimation by Salhis method.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 2 = 10**

31. Mention **four** features affecting ESR.
32. Draw a neat diagram of WBC pipette and mention its uses.
33. Mention blood indices along with their normal values.
34. Name the constituents of WBC diluting fluid.
35. Name **four** functions of WBCs.

SECTION B : MICROBIOLOGY-I Q.P. CODE : 1905 [30 Marks]

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any ONE): **1 X 10 = 10**

1. Enlist different types of microscopes. Describe the operational principles of light microscope. Add a note on its applications in diagnostic microscopy laboratory.
2. Define and classify sterilization methods. Discuss in detail about the chemical disinfectants types and their use in hospitals.

SHORT ESSAY QUESTIONS (Answer any TWO): **2 X 5 = 10**

3. Describe the methods of gene transfer in bacteria.
4. Discuss the contributions of Louis Pasteur to microbiology.
5. Explain the operational principle of Autoclave and add a note on its uses.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 2 = 10**

6. Write the morphological classification of bacteria.
7. Write two applications of dark ground microscope.
8. Draw a neat labelled diagram of bacterial growth curve.
9. Enumerate four methods used for sterilization of culture media.
10. Methods for testing efficiency of disinfectants.

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B.SC. IN ANESTHESIA TECHNOLOGY -III SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 80

APPLIED TECHNOLOGY IN ANESTHESIA

Q.P. Code:1919/C

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

21. Discuss pre-anaesthetic assessment of the patient including investigations. Write briefly the essential monitoring devices to be used of general anaesthesia case. (5+5)

22. Discuss various methods of sterilisation and disinfection of anaesthesia equipment. (5+5)

23. Explain anatomy of epidural space. Technique, indications and contraindications of epidural anaesthesia. (3+2+2+3)

SHORT ESSAY QUESTIONS (Answer any SIX): **6 X 5 = 30**

24. ETO sterilization of anaesthesia equipment.
25. Propofol.
26. AMBU bag.
27. Ringer lactate.
28. Fresh Frozen Plasma (FFP).
29. Lignocaine hydrochloride.
30. HME (Heat and Moisture Exchanger).

SHORT ANSWER QUESTIONS (All are compulsory): **10 X 3 = 30**

31. Advantages of humidification.
32. Atropine.
33. Ketamine.
34. Types of hypoxia.
35. Adverse effects of smoking on anaesthesia.
36. Bupivacaine hydrochloride.
37. Autoclaving.
38. Mention the different types of Endo-tracheal tubes.
39. Packed Cell Volume (PCV).
40. Neostigmine.

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Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN NEUROSCIENCE TECHNOLOGY -III SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

BASIC OF NERVE CONDUCTIONS, ELECTROMYOGRAPHY AND EVOKED POTENTIALS

Q.P. Code:1926/C

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Describe the procedure of recording the median nerve somatosensory evoked potentials.
2. Describe the principles and methodology of recording sensory nerve comductions.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Median nerve conduction study.
4. How do you record the H-reflex?
5. Brainstem auditory evoked potentials.
6. Motor nerve conductions of common peroneal nerve.

7. Averaging.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. Compound muscle action potential.
9. Sinus arrhythmia in electrocardiogram (ECG).
10. P100 in visual evoked potentials.
11. Decremental response in repetitive nerve stimulation.
12. End plate spike.

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Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN CARDIAC CARE TECHNOLOGY -III SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

BASICS OF CARDIAC TECHNOLOGY

Q.P. Code:1923/C

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (All are compulsory): **2 X 10 = 20**

1. Discuss basic structure of computers, principles of programming and principles of computer application in various fields.
2. Physical principles and instrumentation in 2D echo cardiography, spectral and color flow imaging.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. ECG criteria for RV, LV & LA enlargement.
4. Basic principles of blood transfusion.
5. Problems of color flow and pulse wave Doppler imaging.
6. Electrical axis and electrical filed of the heart.
7. Demography of vital statistics.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. Chi square test.
9. Echocardiographic transducers.
10. Transesophageal echo indications.
11. Continuous wave Doppler echo cardiography.
12. Electrocardiographic paper.

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Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.Sc. IN MEDICAL LABORATORY TECHNOLOGY
III SEMESTER – FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

BACTERIOLOGY

Q.P. Code:1913

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **10 X 2 = 20**

1. Describe the morphology, pathogenesis and laboratory diagnosis of pulmonary tuberculosis. (2+3+5)
2. List the bacteria causing upper respiratory tract infections. Discuss the pathogenesis and laboratory diagnosis of Diphtheria. (2+3+5)
3. Name the bacteria causing Dysentery. Write the pathogenesis and laboratory diagnosis of Shigella dysentery. (2+3+5)

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Write a note on Elek's Gel precipitation test.
5. Discuss the laboratory diagnosis of leprosy.
6. Name four anaerobic bacteria. Describe the anaerobic culture methods.
7. Write the laboratory diagnosis of Gonorrhoea.
8. Define hospital acquired infection. Add a note on the laboratory diagnosis of wound infection caused pseudomonas species.
9. Discuss the bacteriological surveillance of operation theatre.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Describe the morphology of C. diphtheriae with the help of a labelled diagram.
11. Write a note on coagulase test.
12. List **three** important bacteria causing meningitis.
13. Write the guidelines for collection of urine sample.
14. Enumerate **six** serological tests used for the diagnosis of syphilis.

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B.SC. IN RADIOGRAPHY-III SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

RADIOGRAPHIC PHOTOGRAPHS

Q.P. Code:1916

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Explain in detail work flow, components, image formation of computed radiography.
2. Explain in detail about construction of intensifying screen and add a note on types of phosphor.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Write a note on silver recovery in fixer solution.
4. Write a note on chemistry of image formation.
5. Write a note on magnification.
6. Write a note on structure and quantum mottle.
7. Write a note on construction of X-ray film.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. Write a short note on advantages and disadvantages of intensifying screen.
9. Write a short note on screen marks and pressure marks.
10. Write a short note on factors affecting developer replenishment rate.
11. Write a short note on brightness grain and minification gain.
12. Write a short note on film speed.

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B.SC. IN ANESTHESIA TECHNOLOGY -III SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

APPLIED TECHNOLOGY IN ANESTHESIA

Q.P. Code:1919

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. a) Discuss in detail about monitoring during general anaesthesia.
   b) Write a note on pulse oximeter.
2. a) What is sterilization?
   b) Discuss methods of sterilization of anaesthesia equipments.
3. a) Arrangement of trolly for general anaesthesia.
   b) Discuss endotracheal intubation.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. AMBU Bag.
5. Simple oxygen face mask.
6. Propofol.
7. Autoclaving.
8. Humidifiers.
9. Capnography.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Evaluation of patients receiving oxygen therapy..
11. Atropine.
12. Drug used for general anaesthesia.
13. Oxygen hood.

14. Various instruments for oxygen therapy in recovery room.

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Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN PERFUSION TECHNOLOGY -III SEMESTER

FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

BASICS OF PERFUSION TECHNOLOGY-II

Q.P. Code:1921

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Write an essay on aseptic techniques to be followed by perfusionist.
2. Write an essay on monitorings required in antegrade & retrograde cardioplegia delivery.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Management of metabolic acidosis.
4. Write an essay on materials used in extracorporeal circuit.
5. Compare pulsatile and non-pulsatile perfusion.
6. What care should be taken during handling of blood products and transfusion?
7. Mechanism of working of integrated heat exchanger.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. Respiratory acidosis management on ventilator.
9. Short note on membrane oxygenator.
10. Short note on centrifugal pump.
11. Flow meter in extracorporeal circulation.
12. Suckers in extracorporeal circulation.

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B.SC. IN CARDIAC CARE TECHNOLOGY -III SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

BASICS OF CARDIAC TECHNOLOGY

Q.P. Code:1923

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Describe the basic principles of ECG paper and add a note on the electrical axis.
2. Describe all the views of echocardiography and write a short note on M-mode echocardiography.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Precordial pattern of ECG.

4. Colour Doppler flow imaging.
5. Contrast echocardiography.
6. ECG lead positioning.
7. Chamber enlargement (LAE & RAE)

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Pulse wave Doppler.
9. Methods of determining heart rate on ECG.
10. PR interval.
11. Right ventricular hypertrophy-ECG changes.
12. Clinical application of Doppler echocardiography.

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B.SC. IN NEUROSCIENCE TECHNOLOGY -III SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

APPLIED TECHNOLOGY-II BASIC OF PRINCIPLES OF ELECTROENCEPHALOGRAPHY

Q.P. Code:1926

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Describe the EEG changes during non-rapid eye movement (NREM) sleep.
2. Describe the various biological artefacts during EEG recording.
3. Describe the principles of digital EEG recording.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Neural generators of EEG.
5. Bipolar montages used in EEG.
6. Non-biological artefacts.
7. Principles of video EEG recording.
8. Principles of 10-20 electrode placements.
9. Anterior temporal (T1 and T2) electrodes.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Beta activity.
11. Delta activity.
12. Sweat artefacts.
13. Vertex sharp wave.
14. Sphenoidal electrodes.

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B.SC. IN OPTOMETRY III SEMESTER – FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

OPTOMETRY AND DISPENSING OPTICS

Q.P. Code:0129

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Write in detail about frame measurements (Boxing and Datum system) and parts of a spectacle frame?
2. Elaborate on the designs, advantages and disadvantages, indications and contra indications of progressive addition lenses?
3. Discuss the properties of crossed cylinder with an example for each.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Write about polarizing lens (Lens details, principle and indications)?
5. What re toric transpositions and give an example.
6. What are the types of reflections occurring from spectacle lens?
7. A right lens of power-7.00 D sphere is decentred 3 mm out and 4 mm up. What are the resulting horizontal and vertical prismatic effects?
8. What are the characteristics of cylindrical lens and write about spherical equivalent?
9. Write about facial measurement and frame choices.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. What are the various types of bifocal lenses?
11. What are absorptive lenses?
12. Mention defects which occur due to lens polishing.
13. What is vertex distance and effective power?
14. What is pantascopic tilt and what is its significance.

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B.SC. RENAL DIALYSIS TECHNOLOGY-IV SEMESTER

FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

BASICS IN RENAL DIALYSIS TECHNOLOGY

Q.P. Code:0121

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Discuss about urgent and planned indications for dialysis.
2. Discuss in detail, haemodialysis apparatus types of dialyzer membrane.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Write in details about priming of dialysis apparatus.
4. How to monitor while patient on haemodialysis.
5. Discuss in detail types of vascular access for haemodialysis.
6. Write about dialyser reuse.
7. Discuss about common complications during haemodialysis.

SHORT ANSWER QUESTIONS (Answer any THREE): **3 X 5 = 15**

8. Write about principles of dialysis.
9. What are temporary vascular access in haemodialysis?
10. Write about common complication of vascular access.
11. Predialysis assessment.
12. Machine parameters during dialysis.

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B.Sc. IN MEDICAL LABORATORY TECHNOLOGY–V SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

PARASITOLOGY & MYCOLOGY

Q.P. Code:1984

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **10 X 2 = 20**

1. Enumerate the parasites causing Diarrhoea. Describe the pathogenesis and laboratory diagnosis of Entamoeba histolytica. (3+3+4)
2. Enumerate the parasites causing Anaemia. Describe the life cycle, laboratory diagnosis and prophylaxis of malaria. (2+3+3+2)
3. Classify fungi. Describe the pathogenesis and laboratory diagnosis of Mycetoma. (3+3+4)

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Opportunistic mycosis.
5. Giardia lamblia.
6. Candida albicans.
7. Cryptococcus neoformans.
8. Stool examination for ova and cysts.
9. Taenia solium.
10. Microfilaria.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

11. Draw a neat labelled diagram of ovum Ascaris lumbricoides.
12. Name **three** Dimorphic fungi.
13. Bile stained eggs.
14. Aspergullus.
15. Trichomonas vaginalis.

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B.SC. IN ANESTHESIA TECHNOLOGY -V SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

ANAESTHESIA FOR PATIENTS WITH MEDICAL DISORDERS

Q.P. Code:1989

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. a) Describe pathophysiology of eclampsia of pregnancy.
   b) How will you monitor and manage a 30 year old, 34 week pregnant patient with history of convulsions coming for lower segment caesarean section (LSCS). (5+5)
2. a) How do you evaluate a patient with COPD posted for TURP?
   b) How will you manage the patient with COPD posted for TURP? (5+5)
3. How will you evaluate and optimize a patient with uncontrolled diabetes mellitus posted for laparoscopic cholecystectomy?

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Pulmonary function tests (PFI).
5. Post-operative Nausea vomiting (PON).

6. Post-operative complications.
7. Venturi principle.
8. Difficult airway card.
9. Pre-operative fasting guidelines.
10. Criteria for discharge from PACU.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

11. Thiopenone sodium.
12. Sellicks manouvere.
13. Diffusion hypoxia.
14. Adrenaline uses and routes of administration.
15. Delayed recovery.

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B.SC. IN PERFUSION TECHNOLOGY -V SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

CPR & LIFE SUPPORT

Q.P. Code:1994

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. What are the general care measures with respect to: a) Eyes b) GI tract c) Bladder system d) vascular line e) Tracheostomy

2. Explain about management of acute myocardial infarction in ICU.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. What is the role of chest physiotherapy in cardiac patients?
4. What are the principles of blood transfusion therapy?
5. What are the different options available to maintain oxygenation during respiratory failure?
6. What are the common atrial arrhythmias occur in ICU, how will you manage them?
7. What are the parameters to be monitored to check proper intubation?

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. Draw and label normal CVP trace.
9. What do you understand by basic life support?
10. Noradrenaline.
11. Defibrillators and its uses.
12. Nitroglycerine.

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FIRST SEMESTER - B.Sc. NUTRITION AND DIETETICS DEGREE EXAMINATION – FEBRUARY 2022

Time: 3 Hours Max. Marks: 80

NUTRITIONAL BIOCHEMISTRY-I

Q.P. Code: 0138

Answers should be specific to the Questions asked.
Draw neat & labeled diagrams wherever necessary.

All the questions are compulsory.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Describe the reactions of citric acid cycle and its regulation. Outline its relationship with amino acid metabolism. (4+2+4)
2. Describe the reactions of Beta oxidation of fatty acids. Add a note on ATP yield from palmitate. (7+3)
3. Define enzymes. Classify and explain each class of enzyme with one example according to IUBMB system. (1+9)

SHORT ESSAY QUESTIONS (Answer any EIGHT): **8 X 5 = 40**

4. Describe the fluid mosaic model of cell membrane with the help of a neat labelled diagram.
5. Explain the regulation of glycogenesis and glycogenolysis.
6. Explain the digestion and absorption of lipids. Add a note on steatorrhea.
7. Define active transport. Explain the various types of active transport with examples.
8. Describe allosteric regulation of enzymes with an example.
9. Explain the significance of hexose monophosphate shunt pathway.
10. Explain amphibolic role of citric acid cycle.
11. What are lipoproteins? Classify them and explain their functions. (1+2+2)
12. Explain the role of enzymes in blood glucose homeostasis.

SHORT ANSWER QUESTIONS (All are compulsory): **10 X 2 = 20**

13. Define facilitated transport. Give one example.
14. What are isoenzymes? Give two examples.
15. Classify monosaccharides with suitable examples.
16. Name the ketone bodies. Give two conditions characterized by excess production of ketone bodies.
17. List the derivatives of cholesterol.
18. Describe the structure of mitochondria and mention its function.
19. Mention the enzymes useful in diagnosis of myocardial infarction.
20. List the functions of phospholipids.
21. Describe endocytosis and exocytosis.
22. Mention **two** lipotropic factors.

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B.SC. MLTC, RADIOGRAPHY, ANAESTHESIA, PERFUSION, CARDIAC CARE, NEUROSCIENCE, RENAL DIALYSIS AND OPTOMETRY

II SEMESTER – FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

HUMAN ANATOMY -II

Q.P. Code:1906

Answers should be specific to the Questions asked. Draw neat, labeled diagrams wherever necessary.

Question Number
Marks

LONG ESSAY QUESTIONS (Answer any TWO): 2 X 10 = 20

1. Describe parotid salivary gland under the following headings:
   a. External features
   b. Relations
   c. Blood supply
   d. Lymphatic drainage & nerve supply
   e. Clinical anatomy (3+2+1+2+2)

2. Describe uterus under the following headings:
   a. Morphology
   b. Supports
   c. Blood supply
   d. Applied anatomy (2+3+2+3)

3. Describe urinary bladder under the following headings:
   a. Location
   b. Gross features
   c. Interior
   d. Applied anatomy (2+3+2+3)

SHORT ESSAY QUESTIONS (Answer any Five): 5 X 5 = 25

4. Pituitary gland.

5. Blood supply of stomach.
6. Muscle of tongue.
7. Histology of testis.
8. Head of pancreas.
9. Vermiform appendix.
10. Gall-bladder.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 3 = 15

11. Sensory nerve supply of tongue.
12. Mention ligaments of liver.
13. Name the hormones produced by adrenal glands.
14. Name the relations of right kidney.
15. Name the parts of pituitary gland.

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B.SC. MLTC, RADIOGRAPHY, ANAESTHESIA, PERFUSION, CARDIAC CARE, NEUROSCIENCE, RENAL DIALYSIS AND OPTOMETRY-II SEMESTER FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

HUMAN PHYSIOLOGY-II AND BASICS OF BIOCHEMISTRY- II

Answers should be specific to the Questions asked. Draw neat, labeled diagrams wherever necessary.

Use separate answer books for Section A and Section B

SECTION A : HUMAN PHYSIOLOGY-II O.P. CODE : 1907 [30 Marks]

Question Number
Marks

LONG ESSAY QUESTIONS (Answer any ONE): 1 X 10 = 10

1. Discuss the neural regulation of respiration in detail. Add a note on hypoxia. (8+2)
2. Describe the various phases and hormonal regulation of menstrual cycle. Add a note on menopause. (8+2)

SHORT ESSAY QUESTIONS (Answer any TWO): 2 X 5 = 10

3. Define ECG. Describe the waves in ECG lead II.
4. Define and give the normal values of GFR. Discuss various factors affecting GFR.
5. Regulation and functions of pancreatic juice. (3+2)

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 2 = 10

6. Effects of anti-diuretic hormone.
7. Draw a neat labeled diagram of a nephron.
8. Define stroke volume, cardiac output & cardiac index. Give their normal values.
9. Functions of large intestina.
10. Name the hormones secreted by pancreas and give their functions.

------- SECTION B : BASICS OF BIOCHEMISTRY - II…Q.P. CODE : 1908 [30 Marks]

Question Number
Marks

LONG ESSAY QUESTIONS (Answer any ONE): 1 X 10 = 10

1. Describe the sources, RDA, functions and deficiency manifestations of Vit. A. (1+1+4+4)
2. Define Glycolysis. Explain how glucose is metabolized to pyruvate. Add a note on fate of pyruvate in RBC. (1+6+3)

SHORT ESSAY QUESTIONS (Answer any TWO): 2 X 5 = 10

3. Describe the factors affecting enzyme activity.
4. Explain the digestion and absorption of lipids.
5. Describe the specimen collection of various biological fluids for analysis.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 2 = 10

6. Write the normal levels of a) Urea b) Creatinine.
7. Describe the biochemical functions of copper in the body.
8. Describe **four** factors affecting BMR (Basal Metabolic Rate).
9. Define Transamination. Give example.
10. Describe **two** enzymes with diagnostic importance.

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B.SC. MLTC, RADIOGRAPHY, ANAESTHESIA, PERFUSION, CARDIAC CARE, NEUROSCIENCE, RENAL DIALYSIS AND OPTOMETRY

II SEMESTER – FEBRUARY 2022

Time: 3 Hours **Max. Marks: 60**

HAEMATOLOGY & CLINICAL PATHOLOGY- AND MICROBIOLOGY -II

Answers should be specific to the Questions asked. Draw neat, labeled diagrams wherever necessary.

Use separate answer books for Section A and Section B

SECTION A : HAEMATOLOGY & CLINICAL PATHOLOGY O.P. CODE : 1909 [30 Marks]

Question Number
Marks

LONG ESSAY QUESTIONS (Answer any ONE): 1 X 10 = 10

1. Describe in detail about semen analysis including methods of collection of semen sample. (8+2)
2. Describe the laboratory tests for Megaloblastic anemia. List the etiologies of Megaloblastic anemia. (7+3)

SHORT ESSAY QUESTIONS (Answer any TWO): 2 X 5 = 10

3. Proteinuria.
4. Describe the various methods of collection of urine.
5. How do you prepare buffy coat smears? What are its uses?

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 2 = 10

6. How do you demonstrate ketone bodies in the urine?
7. What is the principle of hemoglobin electrophoresis?
8. Name any **four** poikilocytes.
9. Name **four** urinary crystals.
10. Normal values of Ferritin, serum iron & TIBC.

SECTION B : MICROBIOLOGY -II…O.P. CODE : 1910 [30 Marks]

Question Number
Marks

LONG ESSAY QUESTIONS (Answer any ONE): 1 X 10 = 10

1. Classify bacterial culture media. Describe in detail about selective media with examples and their uses. (3+4+3)
2. Define precipitation reactions. Discuss in detail about the types of precipitation reaction with examples and diagnostic application. (2+4+4)

SHORT ESSAY QUESTIONS (Answer any TWO): 2 X 5 = 10

3. Describe transport media with examples & uses.
4. Describe mechanism of Innate immunity.
5. Describe the structure and function of IgG.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 2 = 10

6. Define antigen and write its properties.
7. Write **two** main functions of compliment system.
8. What is herd idmmunity?
9. Write **two** main functions of B. cells.
10. Give **four** examples of enriched media.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

(Declared as Deemed-to-be-University u/s 3 of the UGC Act, 1956)

Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN ANESTHESIA TECHNOLOGY/PERFUSION TECHNOLOGY/CARDIAC CARE TECHNOLOGY -IV SEMESTER FEBRUARY 2022

Time: 3 Hours Max. Marks: 80

APPLIED PHARMACOLOGY

Q.P. Code:1969

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): 2 X 10 = 20

1. Classify diuretics. Explain the mechanism of action, therapeutic uses and adverse effect of furosemide? (3+1+3+3)
2. Classify sedative hypnotic drugs. Explain the mechanism of action, therapeutic uses and adverse effect of diazepam? (4+1+3+2)
3. Classify local anesthetic drugs. Explain the mechanism of action, therapeutic uses and adverse effect of lignocaine? (3+1+3+3)

SHORT ESSAY QUESTIONS (Answer any SIX) **6 X 5 = 30**

4. Merits and demerits of inhalational general anesthetics.
5. Name **five** anti-anginal drugs, their therapeutic uses and adverse effect.
6. Name **five** anti-platelet drugs, their therapeutic uses and adverse effect.
7. Discuss **five** types of shock and their management.
8. Mention **five** anti-epileptic drugs their therapeutic uses and adverse effect.
9. Name **five** anti-tubercular drugs, their therapeutic uses and adverse effect.
10. Name **five** beta blockers, their therapeutic uses and adverse effect.

SHORT ANSWER QUESTIONS (All are compulsory): **10 X 3 = 30**

11. Name **three** aminoglycosides their therapeutics uses and adverse effect.
12. Mention **three** merits and demerits of intravenous general anesthetics.
13. Name **three** anti-HIV drugs their therapeutic uses and adverse effect.
14. Enumerate **three** clinical uses of alcohol.
15. Discuss **three** anti-fibrinolytic drugs their therapeutic uses and adverse effect.
16. Mention **three** drugs and their therapeutic uses in management of heart failure.
17. Mention **three** semi-synthetic penicillin their therapeutic uses and adverse effect.
18. Mention **three** therapeutic uses and adverse effect of Prazosin.
19. Mention **three** advantages of combining sulfonamide and trimethoprim.
20. Mention **three** oral iron preparations their therapeutic uses and adverse effect.

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Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. RENAL DIALYSIS TECHNOLOGY-III SEMESTER

FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

CONCEPTS OF RENAL DISEASE AND ITS MANAGEMENT

Q.P. Code:0115

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Describe etiology, pathogenesis and salient treatment of AKI.
2. Discuss: causes, symptoms, investigations and treatment of chronic kidney disease stage IV and V.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Definition, causes and treatment of Nephrotic syndrome.
4. Define and discuss asymptomatic urinary abnormalities (urine analysis).
5. Name the tumors of kidney.
6. What are the causes of obstructive uropathy and what are the investigation modalities.
7. Define complicated UTI and how to investigate.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. What are the types of renal stone disease?
9. Write a brief note on early and later symptoms of chronic renal failure.
10. Urine analysis in acute renal failure.
11. List the risk factors for acute renal failure
12. What do you mean by secondary nephrotic syndrome?

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Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN ANESTHESIA TECHNOLOGY-IV SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

BASICS OF ANAESTHESIA TECHNOLOGY

Q.P. Code:1970

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (All are compulsory): **2 X 10 = 20**

1. Write a note on BLS.
2. Describe the neuromuscular junction and neuromuscular monitoring in anaesthesia.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Mallampati classification.
4. Discuss about adrenaline and Amiodarone.
5. WTG Morton.
6. Oxygen cascade.
7. Write a note on laryngoscopes and mention their types.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 3 = 15

8. Endotracheal tube.
9. Oxygen therapy.
10. Succinyl choline.
11. Recovery score.
12. AMBU bag.

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(Declared as Deemed-to-be-University u/s 3 of the UGC Act, 1956)

Accredited 'A' Grade by NAAC (2nd Cycle) Placed in 'A' Category by MHRD (GoI)

B.SC. RENAL DIALYSIS TECHNOLOGY-III SEMESTER-FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

APPLIED ASPECTS OF PATHOLOGY AND MICROBIOLOGY

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
Use separate answer books for Section A and Section B

SECTION A : APPLIED ASPECTS OF PATHOLOGY Q.P. CODE : 0116 [30 Marks]

Question Number Marks

LONG ESSAY QUESTIONS (Answer any ONE): 1 X 10 = 10

1. Discuss the differences between nephrotic & nephritic syndrome. Name the investigations done for urine proteins.
2. Discuss etiopathogenesis & pathology of pyelonephritis.

SHORT ESSAY QUESTIONS (Answer any TWO): 2 X 5 = 10

3. Pathology of autosomal dominant polycystic renal disease.
4. Benign nephrosclerosis.
5. Nephritic syndrome.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 2 = 10

6. Horse shoe kidney.
7. Renal hypoplasia.
8. **Four** causes of hematuria.
9. **Four** causes of contracted kidney.

10. Name **four** renal crystals.

SECTION B : MICROBIOLOGY …Q.P. CODE : 0117 [30 Marks]

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any ONE): **1 X 10 = 10**

1. Discuss the mode of transmission, pathogenesis and universal precautions for HIV infection. (2+3+5)
2. Enumerate the pathogens causing opportunistic infections. Add a note on their pathogenesis and laboratory diagnosis.

SHORT ESSAY QUESTIONS (Answer any TWO): **2 X 5 = 10**

3. Describe hepatitis B virus with help of a labeled diagram. Add a note on its mode of transmission.
4. Discuss the microbiology of urinary tract infections.
5. Describe the microbiology of vascular access infections.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 2 = 10**

6. Enumerate the sites of vascular access infection.
7. Write the modes of transmission of HIV infection.
8. Write a brief note on transfusion associated infections.
9. Name the vaccines against hepatitis B virus infection.
10. Write the precautions to be taken while collecting blood sample.

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Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN ANESTHESIA TECHNOLOGY -IV SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

APPLIED ANESTHESIA TECHNOLOGY-I

Q.P. Code:1971

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (All are compulsory): **2 X 10 = 20**

1. Discuss on detail about epidural anaesthesia.
2. Describe the Mapleson classifications of breathing circuits. Mention the advantage and disadvantages of each.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Laryngeal mask airway.

4. Desflurance.
5. Atracurium.
6. Complications of spinal intrathecal block.
7. Air way assessment.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. Beta blockers.
9. Mismatched blood transfusion under anaesthesia.
10. Capnography.
11. Complications of laryngoscopy.
12. Types of endotracheal tubes.

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B.SC. IN ANESTHESIA TECHNOLOGY -IV SEMESTER
FEBRUARY 2022

Time: 3 Hours Max. Marks: 60

APPLIED ANAESTHESIA TECHNOLOGY-II

Q.P. Code:1972

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (All are compulsory): **2 X 10 = 20**

1. Discuss about anaesthesia for LSCS.
2. Write in detail about anaesthesia for a patient with Ischaemic heart disease.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Anaesthesia considerations for MRI procedure.
4. Discharge criteria following day care surgery.
5. Write about labor analgesia.
6. Normal physiological changes in pregnancy and anaesthesia point of view discuss its importance.

7. Anaesthesia for bronchoscopy for foreign body removal in a two year old child.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 3 = 15

8. Mention various drugs used for treating pain.
9. Total intravenous anaesthesia (TIVA).
10. Lithotomy position problems.
11. Anaesthesia problems in manual removal of placenta.
12. Mention different types of shock.

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B.SC. MLT, RADIOGRAPHY, ANAESTHESIA, CARDIAC CARE, NEUROSCIENCE, PERFUSION, B.SC. IN RENAL DIALYSIS TECHNOLOGY, OPTOMETRY, ENDOSCOPY AND CRITICAL CARE TECHNOLOGY-I SEMESTER-JULY 2022

Time: 3 Hours Max. Marks: 60

HUMAN ANATOMY

Q.P. Code:1901

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number Marks

LONG ESSAY QUESTIONS (Answer any TWO): 2 X 10 = 20

36. Describe the heart under the following headings: (4+2+2+2)
    a) External features.
    b) Interior of chambers
    c) Blood supply
    d) Applied anatomy

37. Name the parts of respiratory system. Describe the right lung under the following headings: (2+4+1+1+2)
    a) External features
    b) Blood supply
    c) Nerve supply
    d) Applied anatomy

38. Name the parts of the central nervous system. Describe the superolateral surface of brain under the following headings: (2+2+4+2)
    a) Lobes

b) Sulci and Gyri
c) Functional areas

SHORT ESSAY QUESTIONS (Answer any FIVE): 5 X 5 = 25

39. Enumerate the paired and unpaired cartilages of larynx.
40. Write a note on classification of synovial joints.
41. Name types of epithelium with examples.
42. Name the bones of appendicular skeleton.
43. Write the gross anatomy of spinal cord.
44. Name the paranasal air sinuses and write their functions.
45. Define bronchopulmonary segment. Write the bronchopulmonary segments of left lung.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 3 = 15

46. Write the components of spinal reflect arc.
47. Define pericardium and write types of pericardium. Mention its applied anatomy.
48. Name the types of pleura.
49. Name the bones of axial skeleton.
50. Name the **three** meninges.

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Accredited A+ Grade by NAAC (3rd Cycle) Placed in 'A' Category by MHRD (GoI)

B.SC. IN ANESTHESIA TECHNOLOGY/PERFUSION TECHNOLOGY/CARDIAC CARE TECHNOLOGY -III SEMESTER JULY 2022

Time: 3 Hours Max. Marks: 80

APPLIED PHARMACOLOGY

Q.P. Code:1917

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number Marks

LONG ESSAY QUESTIONS (Answer any TWO): 2 X 10 = 20

1. Classify antiadrenergic. Explain the mechanism of action, therapeutic uses and adverse effect of adrenaline? (4+1+3+2)
2. Classify non-steroidal anti-inflammatory drugs. Explain the mechanism of action, therapeutic uses and adverse effect of aspirin? (4+1+3+2)
3. Enumerate the various routes of drug administration with suitable examples. Add a note on bioavailability? (8+2)

SHORT ESSAY QUESTIONS (Answer any SIX): 6 X 5 = 30

4. Enumerate opioids. Discuss mechanism of action, therapeutic uses and adverse effects of morphine.
5. Enumerate skeletal muscle relaxants. Discuss mechanism of action, therapeutic uses and adverse effects of d-tubocurarine.
6. Enumerate atropine substitute. Discuss mechanism of action, therapeutic uses and adverse effects of atropine.
7. Discuss the therapeutic uses and adverse effects of various bronchodilators.
8. Discuss the various drugs used in acute, chronic and prophylactic migraine.
9. Enumerate DMARD. Discuss its pharmacological actions in rheumatoid arthritis.
10. Discuss the term and types of teratogenicity with suitable examples.

SHORT ANSWER QUESTIONS (All are compulsory): 10 X 3 = 30

11. Discuss the drugs used in acute and chronic gout.
12. Discuss **three** factors influencing drug absorption.
13. Discuss **three** therapeutic uses and adverse effects of cetirizine.
14. Discuss **three** world health organization approved fixed dose combination.
15. Enumerate antitussive agents and their therapeutic uses.
16. Discuss the therapeutic uses and adverse effects of radioactive iodine.
17. Discuss various types of drug antagonism with suitable examples.
18. Discuss **three** therapeutic uses and adverse effects of corticosteroids.
19. Discuss the principles of treatment of poisoning with suitable examples.
20. Discuss various types of anti-diabetic drugs with suitable examples.

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Accredited A$^+$ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN MEDICAL LABORATORY TECHNOLOGY-V SEMESTER

JULY 2022

Time: 3 Hours Max. Marks: 60

CLINICAL BIOCHEMISTRY-II

Q.P. Code:1982

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): 2 X 10 = 20

1. List the thyroid function tests. Describe the various tests done in the laboratory to assess thyroid disorders. (3+7)
2. Define automation. Describe the component steps in fully automated systems. Explain the advantages of automation.
3. Describe the sources, RDA and functions of calcium. Explain the maintenance of calcium homeostasis by various factors. (1+2+4+3)

SHORT ESSAY QUESTIONS (Answer any FIVE): 5 X 5 = 25

4. Explain the theory of formation of renal calculi.
5. Describe the composition of Gastric juice. Add a note on fractional test meal.
6. Explain the principle, procedure and applications of radioimmunoassay.
7. Explain the steps of NABL accreditation process.
8. Describe three inborn errors of metabolism with their biochemical defect diagnosis and clinical features.
9. Describe the role of enzymes in the diagnosis of liver disorders.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 3 = 15

10. Define the terms: a) Accuracy b) Precision
11. Name the different coloured bags used for biomedical waste disposal and the type of waste disposal in them.
12. Mention the normal levels of a) Protein b) Albumin c) A/G ratio.
13. Mention **three** uses of Gene therapy.
14. Describe the basic principle of pH estimation.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

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B.SC. IN ANESTHESIA TECHNOLOGY -V SEMESTER
JULY 2022

Time: 3 Hours Max. Marks: 60

ANAESTHESIA TECHNOLOGY

Q.P. Code:1987

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. a) What are the physiological changes that occur in pregnancy?
   b) Describe the pre-anaesthetic evaluation of patient for Lower Segment Caesarean Section (LSCS).
   c) Describe the management of patient for Lower Segment Caesarean Section (LSCS).

2. a) What is the principle of capnography?
   b) Mention the different types of capnographs.
   c) Write a note on different capnography waveforms.

3. Discuss the different modes of mechanical ventilation.

SHORT ESSAY QUESTIONS (Answer any FIVE) **5 X 5 = 25**

4. Defibrillation.
5. Caudal epidural anaesthesia.
6. Mendelson syndrome.
7. Post-operative Nausea and vomiting (PONV).
8. Endo-tracheal tubes.
9. Protamine.
10. Complications of blood transfusion.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

11. Merits and demerits of SGA (Supra glottis airway devices).
12. Jackson Ree's circuit.
13. Ringer's lactate.
14. Care of central line.
15. Mallampati score.

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B.SC. IN CARDIAC CARE TECHNOLOGY -V SEMESTER

JULY 2022

Time: 3 Hours Max. Marks: 60

ELECTROCARDIOGRAPHY-II

Q.P. Code:1990

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Define cardiac arrest. Discuss the causes and management of cardiac arrest.
2. Indications for permanent pacemaker implantation. Describe the procedure and complications of permanent pacemaker implantation.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Indications and contraindication for TMT.
4. Various tachycarrhymia ECG features.
5. Indications and complications of cardiac defibrillator.
6. ECG features of hyperkalaemia.
7. ECG features of mitral stenosis.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Criteria for positive TMT.
9. Complete heart block ECG features.
10. Sinus arrhythmia.
11. External cardiac massage.
12. Uses of Holter monitoring.

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B.SC. IN NEUROSCIENCE TECHNOLOGY -V SEMESTER
JULY 2022

Time: 3 Hours Max. Marks: 60

BASIC NEUROSCIENCES-III

Q.P. Code:1995

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. List the classification of muscular dystrophies and discuss Duchenne muscular dystrophy.
2. Discuss the clinical features and treatment of multiple sclerosis.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Discuss the entrapment neuropathies of the ulnar nerve.
4. Myasthenia gravis.
5. Guillain Barre syndrome.
6. Parkinson's disease.
7. Entrapment neuropathies of the posterior tibial nerve.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Myotonia congenita.
9. Dermatomyositis.
10. Causes of dystonia.
11. Neuropathy in renal failure.
12. Muscles involved in anterior interosseous neuropathy.

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Accredited A+ Grade by NAAC (3rd Cycle) Placed in 'A' Category by MHRD (GoI)

B.SC. MLT, RADIOGRAPHY, ANAESTHESIA, CARDIAC CARE, NEUROSCIENCE, PERFUSION, B.SC. IN RENAL DIALYSIS TECHNOLOGY,

OPTOMETRY, ENDOSCOPY AND CRITICAL CARE TECHNOLOGY-I
SEMESTER-JULY 2022

Time: 3 Hours **Max. Marks: 60**

HUMAN PHYSIOLOGY-I AND BASICS OF BIOCHEMISTRY

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
Use separate answer books for Section A and Section B

SECTION A : HUMAN PHYSIOLOGY-I Q.P. CODE : 1902 [30 Marks]

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any ONE): 1 X 10 = 10

51. Define Landsteiner's law, classify blood groups mention uses of blood groups and add a note on complications arising out of mismatched blood transfusion. (2+2+2+4)
52. With a neat labeled diagram explain the sequence of events occurring at the neuromuscular junction. (2+8)

SHORT ESSAY QUESTIONS (Answer any TWO): 2 X 5 = 10

53. Define jaundice, give reference values for normal serum bilirubin and classify jaundice. (2+1+2)
54. Define homeostasis and explain in detail the feedback cycles. (2+3)
55. Draw a neat labeled diagram of a mitochondrion and enlist its functions. (3+2)

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 2 = 10

56. Enlist tests for hearing atleast **two**. (1+1)
57. Draw a beat labeled diagram of reflex arc.
58. Classify nerve fibres based on their conduction velocity.
59. Give the normal value of extracellular fluid in ECF compartment and its measurement. (1+1)
60. Enlist atleast **two** features of Myasthenia Gravis. (1+1)

SECTION B : BASICS OF BIOCHEMISTRY…Q.P. CODE : 1903 [30 Marks]

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any ONE): 1 X 10 = 10

11. Classify carbohydrates and give examples for each class. List the functions of carbohydrates.
12. Define lipids. Classify giving suitable examples.

SHORT ESSAY QUESTIONS (Answer any TWO): 2 X 5 = 10

13. Name the different types of RNA. Mention their functions.

14. What is Normality and Molarity? How do you calculate it explain with an example.
15. What are essential fatty acids? Mention their importance.

SHORT ANSWER QUESTIONS (All are compulsory):
5 X 2 = 10

16. Name **two** biological important peptides with functions.
17. Write **two** safety measures to be followed in laboratory.
18. Name **two** indicators.
19. Name **two** reducing sugars and test to confirm it.
20. What is denaturation of proteins? Name **two** denaturing agents.

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B.SC. IN ANESTHESIA TECHNOLOGY-III SEMESTER
JULY 2022

Time: 3 Hours Max. Marks: 60

INTRODUCTION TO ANESTHESIA TECHNOLOGY

Q.P. Code:1918

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. a) Classification of breathing system.
   b) Write in detail about Bain's circuit.
2. a) Describe anaesthesia machine.
   b) Enumerate various safety features of anaesthesia machine.
3. a) Classification of LMA.
   b) Write indications and contraindications of LMA.
   c) Write a note on any one LMA.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Soda lime canister.
5. Oxygen cylinder.
6. Enumerate types of laryngoscope and write note with labelled diagram.
7. Types of endotracheal tube. Write indication for endotracheal intubation.
8. Colour coding of cylinder.
9. PIN index.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Face masks.
11. Nasopharyngeal airway.
12. Flexometalic tube.
13. JR circuits.
14. Note on airway management.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.
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B.SC. IN PERFUSION TECHNOLOGY -III SEMESTER
JULY 2022

Time: 3 Hours Max. Marks: 60

BASICS OF PERFUSION TECHNOLOGY-I

Q.P. Code:1920

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Write a note on indications and findings of angiogram of lower limbs.
2. Write a note on cardiac thallium scan with respect to indications and advantages.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. What are contraindications and limitations of coronary angiogram?
4. What are the diagnostic criteria on ECHO for mitral regurgitation?
5. What is the advantage of TEE over surface ECHO?

6. What are the components of urine analysis and its significance?
7. Compare obstructive and restrictive lung disease on spirometer.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Azygous flow principle.
9. What is cardio-thoracic ratio? What do you understand by cardiomegaly on chest x-ray?
10. X-ray findings of right tension pneumothorax.
11. Define pneumothorax pleural effusion hydropneumo thorax.
12. Draw a diagram of normal ECG and first degree heart block.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

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B.SC. IN ANESTHESIA TECHNOLOGY-V SEMESTER

JULY 2022

Time: 3 Hours Max. Marks: 60

REGIONAL ANAESTHESIA TECHNOLOGY

Q.P. Code:1988

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. a) Describe anatomy of epidural space.
   b) Enumerate advantages and disadvantages over spinal anaesthesia.

2. a) Discuss anaesthesia for fracture both bone forearm.
   b) Write in detail about one peripheral nerve block.

3. a) Anaesthesia management of LSCS.
   b) Complications of spinal anaesthesia and its management.

SHORT ESSAY QUESTIONS (Answer any FIVE): 5 X 5 = 25

4. Indications, contraindications and complications of ankle block.
5. Preparation of OT for spinal anaesthesia.
6. Note on emergency drugs.
7. a) Local anaesthetic drugs commonly used
   b) Their dosage
   c) Complications
8. Endotracheal tube.
9. Fluids used in anaesthesia.
10. Post-operative care unit.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 3 = 15

11. Epidural needle.
12. Atropine and Adrenaline.
13. Pre anaesthetic evaluation.
14. Oxygen mask.
15. Wrist block.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

(Declared as Deemed-to-be-University u/s 3 of the UGC Act, 1956)

Accredited A+ Grade by NAAC (3rd Cycle) Placed in 'A' Category by MHRD (GoI)

B.SC. IN CARDIAC CARE TECHNOLOGY -V SEMESTER

JULY 2022

Time: 3 Hours Max. Marks: 60

ECHOCARDIOGRAPHY

Q.P. Code:1991

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Discuss in detail regarding echo features of mitral valve stenosis and mitral regurgitation of rheumatic origin.
2. Echocardiographic features of pericardial diseases.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Short note on transoesophageal ECHO.
4. Assessment of cardiac diastolic dysfunction.
5. Echo features in hypertrophic cardiomyopathy.
6. Fetal echocardiography procedure, basic interpretation.
7. Echo in tetralogy of fallot.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Procedure of Myocardial contrast Echo.
9. 3D echocardiography.
10. Echo in mitral valve prolapse.
11. Echo in pericardial effusion.
12. Indications of stress echocardiography.

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(Declared as Deemed-to-be-University u/s 3 of the UGC Act, 1956)

Accredited A+ Grade by NAAC (3rd Cycle) Placed in 'A' Category by MHRD (GoI)

B.SC. IN NEUROSCIENCE TECHNOLOGY –V SEMESTER
JULY 2022

Time: 3 Hours Max. Marks: 60

APPLIED NERVE CONDUCTIONS, ELECTROMYOGRAPHY & EVOKED POTENTIALS

Q.P. Code:1996

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Describe the technique of repetitive nerve stimulation. What are the abnormalities of RNS in myasthenia?
2. What are the nerve conduction abnormalities in demyelinating neuropathies?

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Describe electromyography abnormalities in neurogenic lesions.
4. Describe abnormalities of brain stem auditory evoked response in peripheral and central disorders.
5. Discuss H reflex and F. response.
6. Describe nerve conduction abnormalities in carpal tunnel syndrome.
7. Write a note on single fibre electromyography.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Magnetic stimulation.
9. Fibrillation, fasciculation.
10. Interference pattern.
11. Sural nerve conductions.
12. Tremor recording.

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Accredited A+ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. MLT, RADIOGRAPHY, ANAESTHESIA, CARDIAC CARE, NEUROSCIENCE, PERFUSION, B.SC. IN RENAL DIALYSIS TECHNOLOGY, OPTOMETRY, ENDOSCOPY AND CRITICAL CARE TECHNOLOGY-I SEMESTER-JULY 2022

Time: 3 Hours **Max. Marks: 60**

HEMATOLOGY & CLINICAL PATHOLOGY AND MICROBIOLOGY-I

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
Use separate answer books for Section A and Section B

SECTION A : PATHOLOGY- BASIC HAEMATOLOGY Q.P. CODE : 1904 [30 Marks]

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any ONE): **1 X 10 = 10**

61. Discuss laboratory organization and safety measures in haematology laboratory.
62. Describe neubauer's counting chamber with a neat diagram. Describe the procedures of total WBC count.

SHORT ESSAY QUESTIONS (Answer any TWO): **2 X 5 = 10**

63. Describe the procedure and normal value of AEC.
64. Describe Hb estimation by sahli's method.
65. Describe the procedure of P.C.V and its clinical significance.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 2 = 10**

66. Name **four** anticoagulants used in haematology.
67. RBC pipette-draw a neat diagram and mention its **two** uses.
68. Describe peripheral smear staining by wright's stain.
69. Describe a lymphocyte with a neat diagram.
70. Name **two** methods of ESR estimation and its normal values.

SECTION B : MICROBIOLOGY-I…Q.P. CODE : 1905 [30 Marks]

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any ONE): **1 X 10 = 10**

11. Describe the principle, uses and sterilization controls used in autoclave. (4+3+3)
12. Enumerate the methods of gene transfer in bacteria and describe in detail transduction. (3+7)

SHORT ESSAY QUESTIONS (Answer any TWO): **2 X 5 = 10**

13. List the properties of ideal antiseptic.
14. Write the contributions of Louis Pasteur.
15. Describe the bacterial spore and write its uses.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 2 = 10**

16. Name **four** methods for antibiotic sensitivity testing.
17. Name **four** chemical disinfectants and their uses.
18. Write the principle of phase contrast microscope.
19. Write the morphological classification of bacteria with examples.

20. Write **two** differences between gram positive and gram negative cell wall.

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Accredited A+ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN PERFUSION TECHNOLOGY -III SEMESTER

JULY 2022

Time: 3 Hours Max. Marks: 60

BASICS OF PERFUSION TECHNOLOGY-II

Q.P. Code:1921

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Write an essay on hazards of extracorporeal circulation?
2. Write an essay on arterial and venous cannulae used in extracorporeal circulation.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Write a short note on neurological monitorings.
4. Write a short note on gas exchange in extracorporeal circuit.
5. Compare occlusive and non-occlusive pump.
6. Compare roller and centrifugal pump.
7. Add a note on compatible ABO and RH blood grouping system.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Management of hypercarbia on ventilator.
9. Short note on bubble oxygenator.
10. Short note on heat exchanger.
11. Vents.
12. Short note retrograde cardioplegia.

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Accredited A$^+$ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN CARDIAC CARE TECHNOLOGY -III SEMESTER
JULY 2022

Time: 3 Hours Max. Marks: 60

BASICS OF CARDIAC TECHNOLOGY

Q.P. Code:1923/C

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (All are compulsory): **2 X 10 = 20**

1. Describe in detail about the uses, indications, contraindications and complications of transesophageal echocardiography.
2. Describe the basic cardiac life support in cardiopulmonary resuscitation.

SHORT ESSAY QUESTIONS (All are compulsory): **5 X 5 = 25**

3. Normal ECG wave forms.
4. Normal variants in 2D echo.
5. Normal M mode findings in parasternal long axis.
6. Colour flow Doppler.
7. Contrast echo.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

8. Write in brief about medical ethics.
9. TLD badges.
10. Standard deviation.
11. DICOM.
12. Left ventricular segment analysis.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.
(Declared as Deemed-to-be-University u/s 3 of the UGC Act, 1956)

Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN ANESTHESIA TECHNOLOGY -V SEMESTER
JULY 2022

Time: 3 Hours Max. Marks: 60

ANAESTHESIA FOR PATIENTS WITH MEDICAL DISORDERS

Q.P. Code:1989

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Anaesthetic management of patient with renal failure posted for fracture both bone forearms.

2. a) Preparation of OT for regional anaesthesia.
   b) Write a note on anaesthetic management for patient with uncontrolled hypertension.

3. Discuss anaesthetic management of patient with bronchial asthma.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. a) What are different types of fluid used in anaesthesia?
   b) Fluid management in shock.
5. Acute pain management.
6. Indication and complication for blood transfusion.
7. Anaesthesia for patient for emergency laprotomy.
8. Different parameter monitored during anaesthesia list importance of each.
9. Difficult airway cart.
10. Anaesthetic management of patient for LSCS.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

11. Note on intraoperative monitoring.
12. Oral airway.
13. Pre anaesthetic check list.
14. Problem of prone position under anaesthesia.
15. Oxygen therapy in recovery room.

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Accredited A$^+$ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

FIRST SEMESTER - B.Sc. NUTRITION AND DIETETICS DEGREE EXAMINATION – JULY 2022

Time: 3 Hours Max. Marks: 80

NUTRITIONAL BIOCHEMISTRY-I

Q.P. Code: 0138

Answers should be specific to the Questions asked.
Draw neat & labeled diagrams wherever necessary.
All the questions are compulsory.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Define Gluconeogenesis. Name the substrates for gluconeogenesis. Trace the pathway for gluconeogenesis from lactate. Add a note on its regulation. (1+2+4+3)
2. What are the different types of enzyme inhibition? Explain with suitable examples and changes in Km and Vmax. (4+6)
3. Describe the reactions of Beta oxidation of fatty acids. Add a note on ATP yield from palmitate. (7+3)

SHORT ESSAY QUESTIONS (Answer any EIGHT): **8 X 5 = 40**

4. Define active transport. Explain the different types of active transport with examples. (2+3)
5. Write the significance of hexose monophosphate shunt pathway.
6. What is fatty liver? Explain the causes for fatty liver. Mention the lipotropic factors. (1+2+2)
7. Describe allosteric regulation of enzymes with an example.
8. Describe fluid mosaic model of cell membrane with the help of a diagram.
9. What are lipoproteins? Classify them and explain their functions. (1+2+2)
10. Explain amplibolic role of citric acid cycle.
11. Define enzymes. Classify enzymes according to IUBMB system with one example for each class.
12. What are mucopolysaccharides? Name any **three** and explain their biological significance.

SHORT ANSWER QUESTIONS (All are compulsory): **10 X 2 = 20**

13. Mention two examples for transferase group of enzymes.
14. Describe the structure of mitochondria and mention its function.
15. Describe the role of bile salts in the absorption of lipids.
16. Define coenzymes. Give **two** examples.
17. Describe endocytosis and exocytosis.
18. Mention the inborn error associated with fructose metabolism with its enzyme defect.
19. What are phospholipids? Mention their functions.
20. Write the sources and fate of acetyl CoA.
21. Mention the normal range of the following.
    a) Total cholesterol b) HDL-C c) LDL-C
22. What are isoenzymes? Give **two** examples.

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Accredited 'A' Grade by NAAC (2nd Cycle) Placed in 'A' Category by MHRD (GoI)

B.SC. IN CARDIAC CARE TECHNOLOGY -III SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

CARDIOLOGY

Q.P. Code:1922

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Discuss about causes, diagnosis and treatment aspects of pulmonary hypertension and define pulmonary HTN.

2. Mention the types and causes of heart failure and discuss its diagnosis and management aspects.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Discuss in brief about hypertrophic cardiomyopathy.
4. Causes, symptoms and treatment of mitral regurgitation.
5. Diagnosis and management of atrial septal defect.
6. Risk factors and pathogenesis of Atherosclerosis
7. Co-arctation of aorta.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Fluid therapy.
9. Complications of coronary artery disease.
10. Mention three types of atrial arrhythmias.
11. Name three cyanotic congenital heart diseases.
12. Causes of pericardial effusion.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.
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Accredited A+ Grade by NAAC (3rd Cycle) Placed in 'A' Category by MHRD (GoI)

B.SC. MLTC, RADIOGRAPHY, ANAESTHESIA, PERFUSION, CARDIAC CARE, NEUROSCIENCE, RENAL DIALYSIS AND OPTOMETRY
II SEMESTER – AUGUST 2022

Time: 3 Hours Max. Marks: 60

HUMAN ANATOMY -II

Q.P. Code:1906

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number	Marks
LONG ESSAY QUESTIONS (Answer any TWO):	**2 X 10 = 20**
71 Describe thyroid gland under following headings: a) Morphology b) Relations c) Blood supply d) Applied anatomy	(2+3+2+3)
72 Describe Duodenum under following headings: a) Location and relations b) Blood supply c) Major openings in 2nd part d) Applied anatomy	(3+2+2+3)
73 Describe the liver under following headings: a) Location and relations b) Ligaments c) Blood supply d) Applied anatomy	(3+3+2+2)
SHORT ESSAY QUESTIONS (Answer any Five):	**5 X 5 = 25**
74 Ovary.	
75 Endocrine part of pancreas.	
76 Caecum.	
77 Gall bladder.	
78 Ureter.	
79 Seminal vesicles.	
80 Muscles of tongue.	
SHORT ANSWER QUESTIONS (All are compulsory):	**5 X 3 = 15**
81 Blood supply of tongue.	
82 Mention three hormones produced by pituitary gland.	
83 Histology of kidney. (Diagram only).	

84 Name the supports of uterus.

85 Name major salivary glands.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

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Accredited A+ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN MEDICAL LABORATORY TECHNOLOGY
IV SEMESTER – AUGUST 2022

Time: 3 Hours Max. Marks: 60

ANALYTICAL BIOCHEMISTRY AND CLINICAL BIOCHEMISTRY-I

Q.P. Code:1963

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Explain in detail the principle, working procedure and applications of spectrophotometer. (2+6+2)
2. Enumerate Liver Function Tests. Explain liver enzyme panel in detail. (3+7)
3. Mention the acid-base disorders. Discuss the causes in detail. (2+8)

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Describe the preventive measures to be taken against biomedical laboratory hazards.
5. Explain various markers of myocardial infarction.
6. Classify Laboratory errors. Explain in brief along with their causes. (1+4)
7. Explain the principle and uses of flame photometer. (2+3)
8. Explain respiratory regulation of body pH.
9. Define jaundice. Compare between haemolytic and obstructive jaundice. (1+4)

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Name the serum electrolytes and give their normal values. (1+2)
11. Define Glomerular Filtration rate (GFR). Mention its normal range. (2+1)

12. Write the normal values of the following: a) Blood urea b) Total protein c) Serum uric acid. (1+1+1)

13. Mention the principle and applications of atomic absorption spectrophotometer. (1+2)

14. What is Hyperkalemia? List **two** causes for it. (1+2)

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

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Accredited A+ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN RADIOGRAPHY-IV SEMESTER AUGUST 2022

Time: 3 Hours Max. Marks: 60

RADIOGRAPHIC TECHNIQUE-I

Q.P. Code:1966

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. What is radiation protection and how is it relevant from both a radiographer and patient's perspective. Elaborate on all the devices and mechanisms in place to minimize the overall radiation exposure.

2. Enumerate the routine projection for shoulder joint and scapula. Explain the routine projections for shoulder joint and indications for the same.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Supplementary projections for acute abdomen?
4. Describe the positioning for various knee joint views.
5. Thumb AP and lateral -X-ray
6. Frog leg projection?
7. Flexion and extension view of cervical spine?

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Grid ratio
9. Axial Projection for sella.
10. Write about positioning aids.
11. Lateral decubitus film of chest.
12. Foot oblique view.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

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Accredited A^{+} Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN ANESTHESIA TECHNOLOGY/PERFUSION TECHNOLOGY/CARDIAC CARE TECHNOLOGY -IV SEMESTER AUGUST 2022

Time: 3 Hours Max. Marks: 80

APPLIED PHARMACOLOGY

Q.P. Code:1969

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Enumerate Antihypertensive Drugs. Describe the role of beta blockers in treatment of hypertension. Enumerate drugs used to treat hypertension in pregnancy. (4+3+3)
2. Enumerate aminoglycoside antibiotics. Mention their general pharmacological properties. Write the therapeutic uses of gentamicin. (4+3+3)
3. Enumerate diuretics. Describe mechanism of action, adverse effects and therapeutic uses of high ceiling diuretics. (3+3+2+2)

SHORT ESSAY QUESTIONS (Answer any SIX) **6 X 5 = 30**

4. Mention differences between Heparin & low molecular weight heparin (LMWH). Mention their indications.
5. Enumerate different types of shock. Discuss the management of hypovolemic shock.
6. Discuss the uses and adverse effects of benzodiazepines.
7. Discuss mechanism of action and uses of Sodium valproate.
8. Discuss therapeutic uses and side effects of Rifampicin.
9. Discuss the mechanism of actions, adverse effects and uses of Ondansetron.
10. Explain sequential blockade with respect to Cotrimoxazole. Add a note on uses of Cotrimoxazole.

SHORT ANSWER QUESTIONS (All are compulsory): **10 X 3 = 30**

11. Name three Antiplatelet agents and their three uses.
12. Write three uses of ethyl alcohol.
13. Mention the rationale for combining adrenaline with Lignocaine.
14. Write three aims of pre-anesthetic medication.
15. Enumerate therapeutic uses of fluroquinolones.
16. Enumerate various types of intravenous fluids along with their indications
17. Enumerate any **three** immunosuppressants along with their indications.
18. What are Styptic agents? Give any **two** examples.
19. Enumerate the uses and adverse effects of Spironolactone
20. Name **three** calcium channel blockers and their **three** indications.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

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Accredited A$^+$ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN NEUROSCIENCE TECHNOLOGY -IV SEMESTER AUGUST 2022

Time: 3 Hours Max. Marks: 60

BASIC NEUROSCIENCES-II

Q.P. Code:1980

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Draw a diagram of visual pathway and describe the pathway.
2. Describe somatosensory pathway.
3. Describe neuromuscular junction.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Describe anatomy of median nerve.
5. Posterior tibial nerve.
6. Facial nerve.
7. Radial nerve anatomy.
8. Describe thenar and hypothenar muscles.
9. Muscle stretch reflex.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Quadriceps.
11. Orbicularis oculi.
12. Branches of ulnar nerve.
13. Motor unit.
14. Lateral cutaneous nerve of fore arm.

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B.SC. IN OPTOMETRY-IV SEMESTER – AUGUST 2022

Time: 3 Hours Max. Marks: 60

OCULAR PHYSIOLOGY AND OCULAR BIOCHEMISTRY

Q.P. Code:0130

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. What is accommodation? Explain the mechanism, changes taking place during accommodation.
2. Explain components of visual acuity.
3. Explain the endothelial pump mechanism.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Explain Schirmer's test and uses.
5. Explain visual cycle.
6. Explain the maintenance of intraocular pressure.
7. What is rhodopsin and its role in visual cycle.
8. Functions of tear film.
9. Explain binocular fusion

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Explain light adaptation
11. Write in detail about visual evoked potential
12. Biochemical components of vitreous humour.
13. Tear brake up time.
14. Enumerate lacrimal sac patency test.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.
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Accredited A+ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. RENAL DIALYSIS TECHNOLOGY-IV SEMESTER AUGUST 2022

Time: 3 Hours Max. Marks: 60

APPLIED ANATOMY & PHYSIOLOGY RELATED TO DIALYSIS TECHNOLOGY

Q.P. Code:0118

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Glomerular filtration rate (GFR)-discuss in detail.
2. Hyperkalaemia-definition, causes, diagnosis and treatment.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Physiologic alterations in pregnancy.
4. Show the diagrammatically the intrinsic and extrinsic coagulation pathways.
5. Mention the actions and feedback control of vitamin D.
6. Define edema. Enumerate the differences between transudative and exudative edema.
7. Hypercalcemia.

SHORT ANSWER QUESTIONS (Answer any THREE): **3 X 5 = 15**

8. Hormones produced by kidney.
9. Inulin.
10. Mention five causes of metabolic acidosis.
11. Name three hernias.
12. Normal values of Creatinine, urea, sodium and potassium.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.
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B.SC. RENAL DIALYSIS TECHNOLOGY-V SEMESTER

AUGUST 2022

Time: 3 Hours Max. Marks: 60

BASICS OF NEPHROLOGY

Q.P. Code:0122

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Write about pregnancy and renal physiological changes.
2. What are the hereditary cystic kidney diseases? And write in brief about ADPKD.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. How do you treat Diabetic Nephropathy?
4. Write about Non pharmacological treatment of renovascular hypertension.
5. What are the physiological changes of kidney in pregnancy with pre-existing renal disease?
6. How do you diagnose diabetic nephropathy and what are other corborative evidence.
7. What are the renal complication of normal pregnancy?

SHORT ANSWER QUESTIONS (Answer any THREE): **3 X 5 = 15**

8. What are the complications of ADPKD?
9. What are the causes of renal parenchymal hypertension?
10. What are the renal complications of pregnancy with pre-existing kidney disease?
11. What are pharmacological treatment for renal hypertension?

12. Write about the stages of Diabetic Nephropathy.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.
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B.SC. IN MEDICAL LABORATORY TECHNOLOGY
VI SEMESTER – AUGUST 2022

Time: 3 Hours Max. Marks: 60

CLINICAL BIOCHEMISTRY-VI

Q.P. Code:0101

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Explain the NABL accreditation process. What are the benefits of NABL accreditation? (5+5)

2. Explain the various methods of collection and processing of various biological fluids.

3. Explain the west guard rules, its different types, rules of rejection and interpretation of levy-Jennings chart. (1+3+3+3)

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Define automation. Explain the different types of analyzers.
5. List good safe laboratory principles.
6. Describe colour coding for segregation of different types of biomedical waste.

7. Male Syrup urine disease.
8. Describe the requisition forms and patient data registers in maintenance of clinical laboratory records.
9. Explain pre-analytical errors.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Explain the preparation of normal solutions with an example.
11. Describe semiautoanalysers.
12. Write the normal levels of calcium, sodium and potassium.
13. List **three** indicators.
14. Which are the rules of rejection according to west guard rules?

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

(Declared as Deemed-to-be-University u/s 3 of the UGC Act, 1956)

Accredited A+ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN RADIOGRAPHY-VI SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

NUCLEAR MEDICINE (NM)

Q.P. Code:0109

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Explain in detail about radiopharmaceuticals and their preparation.
2. Discuss in detail about Single Photon Emission Computed Tomography (SPECT) and its uses.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Periodic table.
4. Explain about spatial and temporal resolution.

5. Gamma camera.
6. DTPA.
7. Radioactive transformations.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Specific activity.
9. Radioactive displacement law.
10. Half-life.
11. Units of radioactivity.
12. Define artificial radioactivity.

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B.SC. IN ANESTHESIA TECHNOLOGY-VI SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

APPLIED ANAESTHESIA TECHNOLOGY-I

Q.P. Code:0104

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Describe the different parameters monitored under spinal anaesthesia and in short importance of each one.

2. Describe invasive and non-invasive monitoring under anaesthesia. Write in detail about pulse oxymetry.
3. Discuss End tidal carbon dioxide monitoring with diagram.

SHORT ESSAY QUESTIONS (Answer any FIVE): 5 X 5 = 25

4. Central venous pressure monitoring.
5. Basic of Tromboelectrography.
6. Physiology of temperature regulation.
7. Discuss importance of airway pressure monitoring.
8. Non-invasive cardiac output monitoring.
9. Discuss basics of monitoring in depth of anaesthesia.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 3 = 15

10. Enumerate site for temperature monitoring.
11. Enumerate site for monitoring oxygen saturation.
12. Discuss importance of glucose monitoring.
13. Preparation of CVP line insertion.
14. ASA grading.

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Accredited A$^+$ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN CARDIAC CARE TECHNOLOGY -VI SEMESTER AUGUST 2022

Time: 3 Hours Max. Marks: 60

PROFESSIONAL TRAINING

Q.P. Code:0107

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Write about 17 segments of heart as assessed by echocardiography. Describe mechanical complications of Myocardial infarction and their echo features.

2. Define cardiac arrest. Mention about current guidelines for cardiac resuscitation.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Precautions and procedure while defibrillating a patient with ventricular tachycardia.

4. ECG changes in Hyperkalemia.
5. Echo features of pulmonary stenosis.
6. Indications and contra indications of TEE.
7. Restrictive cardiomyopathy versus constrictive pericarditis echo features.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. M-mode features of mitral stenosis.
9. Echo features of Dextrocardia.
10. Echo features of Dilated cardiomyopathy.
11. Types of atrial fibrillation.
12. Uses of 3D echo.

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B.SC. IN PERFUSION TECHNOLOGY-VI SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

PERFUSION TECHNOLOGY-ADVANCED

Q.P. Code:0113

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. How perfusion techniques differ in paediatric cardiac surgery compare to adults?
2. What are the parameters to be evaluated before putting the patient on ECMO?

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Complications of ECMO.
4. Indications for CPB for non-cardiac surgeries.
5. What are the different preservation solutions used for heart & lung transplants?
6. Compare pH stat and α stat management?
7. Endoaortic cross clamp.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Indications for LVAD?
9. Compare VV & VA ECMO.
10. Weaning of ECMO.
11. Management of metabolic acidosis.
12. Complications of peripheral cannulation.

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B.SC. IN NEUROSCIENCE TECHNOLOGY –VI SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

APPLIED NEUROLOGY-II

Q.P. Code:0111

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Describe the clinical features and evaluation of Guillain Barre syndrome.
2. Describe the various entrapment neuropathies.
3. Discuss clinical features of multiple sclerosis.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Clinical features of Parkinson's disease.
5. Describe the clinical features of chronic inflammatory demyelinating polyneuropathy (CIDP).
6. Write a note on optic neuritis.
7. Write a short note on radial nerve palsy.
8. What are the investigations for polymyositis?
9. Write a note on acute transverse myelitis.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Ulnar nerve palsy.
11. Describe clinical features of Duchenne's muscular dystrophy.
12. Myotonia.
13. Rest tremors.
14. Chorea.

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Accredited A+ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

SECOND SEMESTER - B.Sc. NUTRITION AND DIETETICS DEGREE EXAMINATION – AUGUST 2022

Time: 3 Hours Max. Marks: 80

HUMAN PHYSIOLOGY

Q.P. Code: 0139

Answers should be specific to the Questions asked.
Draw neat & labeled diagrams wherever necessary.
All the questions are compulsory.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Explain the different parts of cerebrum enumerate the different lobes and hemispheres of cerebrum. Write a note on special regions located in the cerebrum.
2. Draw and name all the parts of the nephron. Explain the physiology of urine formation.
3. Describe the gross anatomy of the lungs with a neat labeled diagram. Add a note on transport of gasses.

SHORT ESSAY QUESTIONS (Answer any EIGHT): **8 X 5 = 40**

4. Discuss ABO blood group and determination of blood groups.
5. Discuss the development of the placenta and embryo.
6. Write about the events of the cardiac cycle.
7. Write the properties and composition of gastric juice and secretion of gastric juice.
8. Define immunity. Discuss the types of immunity.
9. Explain the functions of skin with a neat labeled diagram.

10. Functions of brain.
11. Write the morphology and functions of WBC.
12. Explain the process of milk secretion and milk ejection during lactation.

SHORT ANSWER QUESTIONS (All are compulsory): 10 X 2 = 20

13. What are the components of dietary fibre?
14. Haemolytic disease of the new born erythroblastosis fetalis.
15. What are the functions of the kidney?
16. Define synapse.
17. Composition of cerebrospinal fluid.
18. Definition and composition of a clot.
19. Divisions of the pituitary gland.
20. What is Haversian system?
21. Structure of seminal vesicles.
22. Define the cardiac cycle.

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B.SC. MLTC, RADIOGRAPHY, ANAESTHESIA, PERFUSION, CARDIAC CARE, NEUROSCIENCE, RENAL DIALYSIS AND OPTOMETRY-II SEMESTER AUGUST 2022

Time: 3 Hours Max. Marks: 60

HUMAN PHYSIOLOGY-II AND BASICS OF BIOCHEMISTRY- II

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
Use separate answer books for Section A and Section B

SECTION A : HUMAN PHYSIOLOGY-II Q.P. CODE : 1907 [30 Marks]

Question Number Marks

LONG ESSAY QUESTIONS (Answer any ONE): 1 X 10 = 10

86. Define Spermatogenesis. Describe Stages of Spermatogenesis and factors regulating it. (2+5+3)
87. Name the hormones regulating serum calcium levels. Explain their actions in regulating blood calcium levels. (3+7)

SHORT ESSAY QUESTIONS (Answer any TWO): 2 X 5 = 10

88. Explain the conducting system of the heart with neat diagram. (3+2)
89. Describe the composition and functions of surfactant. (2+3)

90. Describe micturition reflex

SHORT ANSWER QUESTIONS (All are compulsory):
5 X 2 = 10

91. Enlist the functions of HCl.
92. List the posterior pituitary hormones.
93. Draw and label neat diagram of Nephron.
94. Name the forms of Carbon-dioxide transport in blood.
95. Write a note on characteristics of 1st and 2nd Heart sounds

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SECTION B : BASICS OF BIOCHEMISTRY - II…Q.P. CODE : 1908 [30 Marks]

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any ONE): **1 X 10 = 10**

1. Describe the sources, RDA, functions and deficiency manifestation of calcium. (1+1+4+4)
2. a) Define enzymes. Classify enzymes according to IUBMB classification. (1+5)
   b) Define isoenzymes. Give examples. (4)

SHORT ESSAY QUESTIONS (Answer any TWO):
2 X 5 = 10

3. Describe the specimen collection of various biological fluids for analysis.
4. Describe the deficiency manifestations f vitamin B1 (Thiamine).
5. Define Gluconeogenesis. Describe the sources for Gluconeogenesis.

SHORT ANSWER QUESTIONS (All are compulsory):
5 X 2 = 10

6. List four factors affecting BMR.
7. Normal levels of a) urea b) Creatinine.
8. Describe the significance of dietary fibre.
9. Describe fluorosis.
10. Define transamunation. Give example.

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B.Sc. IN MEDICAL LABORATORY TECHNOLOGY
IV SEMESTER – AUGUST 2022

Time: 3 Hours Max. Marks: 60

HEMATOLOGY AND CLINICAL PATHOLOGY

Q.P. Code:1964

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Discuss the Coagulation Pathway in detail.
2. Discuss the principle, methods and manual procedure for estimation of platelet count. Mention normal values of platelets.
3. Discuss the Indications, Pre requisites, equipment's and Procedure for Bone marrow Aspiration and Biopsy.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Discuss the principle, procedure and interpretation of demonstration of LE cell Phenomenon.
5. Discuss the principle, procedure and Interpretation of Prothrombin time.
6. Mention the Anticoagulants used in Haematology laboratory, Add a note on its merits and demerits.
7. Discuss organization of a Haematology Laboratory.
8. Discuss the cytochemical stains used in Haematology.
9. Discuss Bio medical waste management in Haematology laboratory

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Mention normal values of INR and its importance.
11. Mention importance of mixing studies of APTT is prolonged.
12. Mention normal value of FDP. Mention 2 cause for increase of FDPs.
13. Mention three Platelet function tests.
14. State the principle for Thrombin time with normal values.

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Accredited A+ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN RADIOGRAPHY-IV SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

RADIOGRAPHY TECHNIQUE-II

Q.P. Code:1967

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

13. Write about patient preparation, procedure, indications and contraindications of Micturating Cystourethrogram (MCU)

14. Elaborate on any of three the most commonly used emergency drugs in radiology department, dosage based on age and sex, indications and contraindications for the drugs.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

15. Mention various contrast media used in gastrointestinal tract and urinary system procedures.
16. Fistulography.
17. Barium enema in intussusception.
18. Distal colostogram.
19. MD CT angiography.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

20. Barium meal.
21. Sonosalpingography.
22. Coronary angiography.
23. What is invertogram?
24. Contraindications for use of Barium contrast.

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B.SC. IN ANESTHESIA TECHNOLOGY-IV SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

APPLIED ANAESTHESIA TECHNOLOGY-I

Q.P. Code:1970

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Describe structures encountered during spinal anaesthesia. Enumerate indication, contraindication and complication of spinal anaesthesia.
2. Enumerate content along with their use of tray for epidural anaesthesia. Write a note on drugs used for epidural anaesthesia.
3. Classify local anaesthesia drugs? Explain mechanism of action of local anaesthesia.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Spinal needle.
5. List intravenous fluid used during regional anaesthesia. Discuss one in detail.
6. a) Oxygen mask
   b) Nasal prongs.
7. Lignocaine hydrochloride.
8. List indication and contraindication for caudal anaesthesia.
9. Technique of identification for epidural space.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. List adjuvant used for spinal anaesthesia.
11. Epidural needle.
12. Write a note on Benzodiazepines.
13. Systemic effects of spinal anaesthesia.
14. Write a note on paediatric spinal anaesthesia.

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B.SC. IN PERFUSION TECHNOLOGY-IV SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

APPLIED PERFUSION TECHNOLOGY-I

Q.P. Code:1975

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Blood conservation techniques in details.
2. What is prime? What are aims of an ideal prime?

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Draw membrane oxygenator and specify all its components.
4. Compare modified and conventional ultrafiltration.
5. Write a short note on various filters used in cardiopulmonary bypass circuit.
6. Premedication drugs used by anesthesiologist and its importance.
7. What are advantages and disadvantages of hemodilution?

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Name **three** beta blockers.
9. Write the formula for calculating body surface area blood volume and hematocrit?
10. Enumerate any **three** demerits of hypothermia.
11. Draw the normal CVP trace.
12. Computer linked monitoring.

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B.SC. IN CARDIAC CARE TECHNOLOGY -IV SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

ELECTROCARDIOGRAPHY-I

Q.P. Code:1973

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Describe ECG features of Acute Myocardial infarction - Acute AWMI, Acute IWMI, Acute posterior wall MI & Acute right ventricular infarction.

2. Describe general principles of bundle branch block & ECG features of Left bundle branch block.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. ECG in hypertension.
4. ECG features of Mitral stenosis.
5. ECG features of WPW syndrome.
6. TMT - different exercise protocols.
7. Electrical axis.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. ECG features of Restrictive cardiomyopathy.
9. ECG in pulmonary stenosis.
10. PR segment in ECG.
11. QRS complex in ECG.
12. Age predicted maximum heart rate.

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B.SC. IN NEUROSCIENCE TECHNOLOGY -IV SEMESTER

AUGUST 2022

Time: 3 Hours Max. Marks: 80

APPLIED TECHNOLOGY III: NERVE CONDUCTION STUDIES (BASIC)

Q.P. Code:1981

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Describe repetitive nerve stimulation study.
2. Describe principles of nerve conduction studies.
3. Describe H-reflex study.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Describe femoral nerve conductions.
5. Describe factors affecting nerve conductions.
6. Describe CMAP (Compound Muscle Action Potential) and Sensory nerve Action Potential (SNAP).
7. Describe ulnar nerve motor and sensory nerve conduction study.
8. Describe conductions of sural nerve.
9. F response studies.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Medial cutaneous nerve of forearm conductions.
11. Saphenous nerve conductions.
12. Lateral cutaneous nerve of forearm conduction.
13. Radial nerve motor conductions.
14. Axillary nerve conduction study.

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B.SC. IN OPTOMETRY-IV SEMESTER – AUGUST 2022

Time: 3 Hours Max. Marks: 60

OCULAR PHARMACOLOGY AND NUTRITION AND HOSPITAL PROCEDURE

Q.P. Code:0131

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Write a note on drug delivery system in eye.
2. Mention the dietary source of Vit A; its importance in ocular health.
3. Discuss the advantages and disadvantages of oral route of drug administration.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Enumerate the various anti-oxidants and their role in vision.
5. Adverse effect of drugs used in the treatment of eye infection.
6. Name the essential fatty acids.
7. How does lignocaine produce a local anesthetic action?
8. Classify anti-hypertensive drug.
9. Mention 3 drug each for viral, bacterial & fungal ocular infections.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Define minerals.
11. Method of topical drug admiration to the eye.
12. Action of Atropine eye ointment.
13. Write a note on pharmacokinetics.
14. Action of pharmacological of adrenaline.

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B.SC. RENAL DIALYSIS TECHNOLOGY-IV SEMESTER

AUGUST 2022

Time: 3 Hours Max. Marks: 60

PHARMACOLOGY RELATED TO DIALYSIS TECHNOLOGY

Q.P. Code:0120

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Classify anti-hypertensives add a detailed note on the action, uses and adverse effects of angiotensin converting enzyme inhibitors.

2. Heparin use during Haemodialysis. Discuss in detail about regular heparin, tight heparin, heparin free dialysis and add on side effects of heparin.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Potassium exchange resins.
4. Side effects of diuretics.
5. Indications for IV fluids & inotropes in dialysis.
6. Classify oral anticoagulants.
7. Disinfectants and its use dialysis unit.

SHORT ANSWER QUESTIONS (Answer any THREE): **3 X 5 = 15**

8. Calcium channel blockers.
9. Retinol.

10. Name three erythropoietin.
11. List the indications and dose of intravenous iron.
12. Phosphate binders.

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B.SC. RENAL DIALYSIS TECHNOLOGY-V SEMESTER

AUGUST 2022

Time: 3 Hours Max. Marks: 60

APPLIED DIALYSIS TECHNOLOGY-I

Q.P. Code:0123

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Write in detail haemodialysis apparatus and its functioning.
2. Write about theory of haemodialysis diffusion, osmosis, and ultrafiltration.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Write about Anticoagulation in haemodialysis.
4. Write about vascular complications.
5. What are the indications for the dialysis?
6. What criteria are used to stop dialysis in Acute Kidney Injury?

7. What are biochemical investigations are required to start dialysis.

SHORT ANSWER QUESTIONS (Answer any THREE): **3 X 5 = 15**

8. Mention types of vascular access for haemodialysis.
9. What are the complications of peritoneal dialysis?
10. Write about history of haemodialysis.
11. Write how adequacy of peritoneal is assessed.
12. How you assess adequacy of haemodialysis?

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B.Sc. IN MEDICAL LABORATORY TECHNOLOGY

VI SEMESTER – AUGUST 2022

Time: 3 Hours Max. Marks: 60

MICROBIOLOGY-VI

Q.P. Code:0102

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Describe the structure and functions of central sterile supply department in a hospital. Add a note on its role in hospital infection control. (6+4)

2. What is blood culture? Describe in detail the process and applications of blood culture in diagnosis of infectious diseases. (3+7)

3. Discuss the principle, procedure and diagnostic applications of ELISA test. (3+3+4)

SHORT ESSAY QUESTIONS (Answer any FIVE): 5 X 5 = 25

4. Discuss the diagnostic utility of stool examination.
5. Define agglutination reactions. Describe their diagnostic applications.
6. Define nosocomial infections. Explain the aetiology of four major nosocomial infections.
7. Describe stool concentration techniques and their significance.
8. Explain automation in diagnostic microbiology laboratory.
9. Classify culture media. Discuss two transport media. Add a note on bacterial growth requirements.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 3 = 15

10. Enumerate three different colour coded bins used for biomedical waste management. Write the types of waste that go in the each of them.
11. Name three rapid tests used for diagnosis of parasitic infections.
12. What are selective media? Give three examples.
13. Enumerate three reasons for rejecting the clinical samples for culture in the laboratory.
14. Explain the utility of KOH preparation in the mycology laboratory.

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B.SC. IN RADIOGRAPHY-VI SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

BIOMEDICAL RESEARCH AND MEDICAL ETHICS IN RADIOLOGY

Q.P. Code:0110

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Describe in detail the basic steps in conducting Randomized Controlled Trail (RCT).
2. Explain in detail qualitative research discusses its applications.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Informed consent.
4. Mention guidelines given by good clinical practice India.
5. Cohort study and its applications.
6. ICMR guidelines on medical ethics.
7. Ethical codes in clinical trials.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Null hypothesis.
9. Operational studies.
10. Research question.
11. Two differences of qualitative vs. quantitative research.
12. Patient care, explain role for radiographer.

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B.SC. IN ANESTHESIA TECHNOLOGY -VI SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

APPLIED ANESTHESIA TECHNOLOGY-II

Q.P. Code:0105

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Discuss environmental safety in operating room. Write in detail about biomedical waste management.
2. Discuss importance of post-operative monitoring with its complication and treatment.
3. Discuss electrical safety in operating room.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Discuss waste disposal of HIV infected patient.
5. Post-operative nausea vomiting.
6. Fire triangle.
7. Operation theatre pollution.
8. Post-operative hypotension and its management.
9. Write in detail how to prepare trolley for general anaesthesia.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Informed consent.
11. Enumerate steps for fibre optic bronchoscopy.
12. Universal precaution.
13. Occupational hazards in operation room.
14. Earthing in operation theatre.

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(Declared as Deemed-to-be-University u/s 3 of the UGC Act, 1956)

Accredited A$^+$ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN CARDIAC CARE TECHNOLOGY -VI SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

CARDIAC CATHETERIZATION

Q.P. Code:0108

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Describe the procedure of VSD device closure and its complications.
2. Left heart catheterization.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Indications and contra indications of temporary pacemaker implantation.
4. PDA coil closure.
5. Causes of O_2 step up in right ventricle level.
6. Preparation of patient for cath procedure and post procedure.
7. LV (Left Ventricle) angiogram and various views.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Femoral artery punctures.
9. Valvuloplasty balloons.
10. Damped and ventricularized pressure tracing.
11. Angio-berman catheter.
12. Indication for Nonionic dye usage.

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Accredited A+ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN PERFUSION TECHNOLOGY -VI SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

CLINICAL PERFUSION TECHNOLOGY

Q.P. Code:0114

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. What are the pulmonary function tests? How they are important form perfusionist view?

2. What are the different manifestations of rheumatic heart disease?

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Write a note on aortic stenosis.
4. What are the causes of cyanosis in cyanotic heart diseases?
5. Pulmonary function tests in restrictive lung diseases.
6. How will you investigate peripheral vascular disease?
7. What are the X-ray findings in cardiomegaly and pulmonary hypertension?

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Write a short note on hypertension.
9. Write a short note on end stage renal disease.
10. Name **three** a cyanotic congenital heart disease.
11. Name any **three** diagnostic modalities for interpretation of ischaemic heart diseases.
12. Comparison between sympathetic and parasympathetic nervous system effects on cardiovascular system.

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B.SC. IN NEUROSCIENCE TECHNOLOGY -VI SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

APPLIED TECHNOLOGY-VII ELECTROMYOGRAPHY (ENMG) AND EVOKED POTENTIALS (EP)

Q.P. Code:0112

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Describe electromyographic changes in Myopathic disorders.
2. Describe the electromyographic changes in anterior horn cell disease.
3. Describe various abnormalities of BAER in deafness.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Write short note on jitter.
5. Write a note on tremor recording.
6. Turns amplitude ratio.
7. P 100 in optic neuropathy.
8. Abnormal spontaneous activity on electromyography.
9. Interference analysis.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Fasciculations.
11. Positive sharp waves.
12. Rise time.
13. Recruitment.
14. Polyphasic potentials.

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Accredited A$^+$ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

SECOND SEMESTER - B.Sc. NUTRITION AND DIETETICS DEGREE EXAMINATION – AUGUST 2022

Time: 3 Hours Max. Marks: 80

NUTRITIONAL BIOCHEMISTRY-II

Q.P. Code: 0140

Answers should be specific to the Questions asked.
Draw neat & labeled diagrams wherever necessary.
All the questions are compulsory.

Question Number	Marks

LONG ESSAY QUESTIONS (Answer any TWO): 2 X 10 = 20

1. Define amino acids. Describe the classification of amino acids bases on structure and nutritional importance. (1+5+4)
2. Enumerate Liver Function Tests. Explain liver enzyme panel in detail. (3+7)
3. Describe the sources, requirements, biochemical functions and deficiency manifestations of vitamin C. (1+1+6+2)

SHORT ESSAY QUESTIONS (Answer any EIGHT): 8 X 5 = 40

4. Explain the term transamination. Give one suitable example. Mention its clinical significance. (2+1+2)
5. Explain in detail about the sources, RDA, biochemical functions and deficiency manifestations of Vitamin K. (1+1+2+1)
6. Explain the structure of t-RNA with a neat labeled diagram.
7. Define clearance tests. Explain Creatinine clearance with its significance. (1+4)
8. What is urea? Mention its normal serum value range. Explain the causes for uremia. (1+1+3)
9. Describe the dietary absorption and biochemical functions of Iron in the body. (3+2)
10. What are blood buffers? Explain their role in acid-base balance. (2.5+2.5)
11. Describe the mechanism of water balance in the body.
12. Explain in detail about the sources, RDA and biochemical functions of Vitamin B6. (1+1+3)

SHORT ANSWER QUESTIONS (All are compulsory): 10 X 2 = 20

13. Mention the sources and daily requirements of vitamin A.
14. What is proteinuria? Mention the causes.
15. What are transport proteins? Give examples. (1+1)
16. Enumerate the steps of transcription.
17. Define jaundice. Mention two causes for Hepatic jaundice.
18. Mention sources, dietary requirement of phosphorus. List two functions of phosphorus. (05+0.5+1)
19. What is Hypokalemia? Give the causes for the same.
20. Mention two physiologically active peptides.
21. Define Nucleosides and give suitable examples.
22. Mention deficiency manifestations of zinc.

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B.SC. MLTC, RADIOGRAPHY, ANAESTHESIA, PERFUSION, CARDIAC CARE, NEUROSCIENCE, RENAL DIALYSIS AND OPTOMETRYII SEMESTER – II SEMESTER – AUGUST 2022

Time: 3 Hours **Max. Marks: 60**

HAEMATOLOGY & CLINICAL PATHOLOGY- AND MICROBIOLOGY -II

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
Use separate answer books for Section A and Section B

SECTION A : HAEMATOLOGY & CLINICAL PATHOLOGY Q.P. CODE : 1909 [30 Marks]

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any ONE): **1 X 10 = 10**

96. Describe in detail about routine urine examination. Add a note on its clinical significance. (8+2)
97. Describe the laboratory tests used in investigation of Iron deficiency anemia. Add a note on its etiology. (8+2)

SHORT ESSAY QUESTIONS (Answer any TWO): **2 X 5 = 10**

98. Discuss briefly about osmotic fragility.
99. Hemoglobin electrophoresis.
100. Coomb's tests.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 2 = 10**

101. What are the uses of buffy coat smear?
102. Describe briefly procedure of sickling test.
103. Name any four investigations done in hemolytic anaemias.
104. Oligospermia.
105. Anuria.

SECTION B : MICROBIOLOGY -II…Q.P. CODE : 1910 [30 Marks]

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any ONE): **1 X 10 = 10**

1. Classify culture media. Enumerate various culture methods. Add a note on lawn culture. (2+5+3)
2. Define and classify Immunity, describe innate immune mechanisms. Add a note on passive immunity. (2+3+5)

SHORT ESSAY QUESTIONS (Answer any TWO): **2 X 5 = 10**

3. Describe classical complement pathway.
4. Describe structure and functions of IgM.
5. Describe the principle and applications of ELISA test.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 2 = 10**

6. Enumerate types of antigen-antibody reactions with **two** examples.

7. What are selective media, give **two** examples.
8. Name **two** anaerobic culture methods.
9. List **four** growth requirements of bacteria.
10. Enlist various types of culture methods.

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Accredited A$^+$ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.Sc. IN MEDICAL LABORATORY TECHNOLOGY

IV SEMESTER – AUGUST 2022

Time: 3 Hours Max. Marks: 60

VIROLOGY

Q.P. Code:1965

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **10 X 2 = 20**

15. Describe the structure and classification of viruses. Discuss the general steps in the diagnosis of viral diseases. (3+2+5)

16. Explain the morphology, pathogenesis and laboratory diagnosis of Hepatitis B virus infection. (2+3+5)

17. Classify Arboviruses. Describe the pathogenesis and laboratory diagnosis of dengue fever. (2+3+5)

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

18. Explain the principle and applications of ELISA test.

19. Explain the structure of HIV with the help of a colored labelled diagram. Name three diagnostic tests for HIV.

20. What are interferons? Explain their role in viral infections.

21. Write the structure and properties of a bacteriophage.

22. Discuss in detail about viral cultivation methods. Add a note on cytopathic effect (CPE).

23. Write the classification and laboratory diagnosis of Herpes viruses.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

24. Define antigenic shift and antigenic drift.
25. Describe inclusion bodies with **two** examples.
26. Describe the principle of hemagglutination inhibition test.
27. Write **three** viral vaccines and their uses.
28. Write **three** differences between the properties of bacteria and viruses.

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B.SC. IN RADIOGRAPHY-IV SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

QUALITY CONTROL, RADIOBIOLOGY AND RADIATION SAFETY IN RADIODIAGNOSIS/ IMAGING

Q.P. Code:1968

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Write in details about structural shielding.
2. Write in details about the radiation protection of patient, staff & public.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Chromosomal aberrations and mutations.
4. TLD badge.
5. Benefits of Quality Assurance procedures in an imaging department.
6. Difference between fluorescence and phosphorescence.
7. Characteristics of ion chamber.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Atomic Energy Regulatory Board.
9. Staff requirement in x ray room.
10. Lead apron.
11. Sources of radiation.
12. CT dose modulation.

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Accredited A+ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN ANESTHESIA TECHNOLOGY -IV SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

APPLIED ANESTHESIA TECHNOLOGY-II

Q.P. Code:1971

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Describe in detail IVRA (Intravenous Regional Anaesthesia) (Biers Block) and preparation of OT. Write a note on local anaesthesia toxicity and its management.

2. 60 year old male posted for debridement of foot. Preparation of OT for the same. Enumerate various block used in lower limb.

3. Discuss in detail about Digit block. Approach, technique, indication, contraindications and complications.

SHORT ESSAY QUESTIONS (Answer any FIVE): 5 X 5 = 25

4. List indication and complication of blood transfusion.
5. Oxygen therapy used in recovery room.
6. Write a note on ultrasound guided nerve block.
7. Adjuvants used in regional anaesthesia. Write few lines about each drug.
8. Minimum mandatory monitoring required during anaesthesia.
9. Write a note on a) Ringer lactate b) DNS.

SHORT ANSWER QUESTIONS (All are compulsory): 5 X 3 = 15

10. Discuss management of hypotension.
11. Endotracheal tube.
12. Discuss arrangement of OT for regional block.
13. Complication of supraclavicular brachial plexus block.
14. Cleaning and disinfection of peripheral nerve stimulator.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

(Declared as Deemed-to-be-University u/s 3 of the UGC Act, 1956)

Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN PERFUSION TECHNOLOGY -IV SEMESTER
SEPTEMBER 2021

Time: 3 Hours Max. Marks: 60

APPLIED PERFUSION TECHNOLOGY-II

Q.P. Code:1976

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. What is cannula? Write any five types of cannula with their significance.
2. Describe your cardioplegia delivery strategies in aortic regurgitation patient and minimal invasive cardiac surgery.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Merits of pulsatile perfusion.
4. Limb perfusion in peripheral ECMO.
5. Compare VA & VV ECMO.
6. Venting in minimal invasive cardiac surgery.
7. Complications of IABP.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Loss of electrical power during CPB.
9. Flow rates and desired cannula size.
10. Mannitol.
11. Endoaortic cross clamp.
12. Dopamine.

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B.SC. IN CARDIAC CARE TECHNOLOGY -IV SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

CARDIAC CATHETERIZATION

Q.P. Code:1974

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. List indications for Balloon Aortic Valvuloplasty. Describe the Procedure, materials used & complications.
2. Right Heart Catheterization, -Indications, contraindications, materials used, procedure & complications.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Coronary guide wires.
4. Preparation of patient for cath procedures & post procedure care.
5. Radiation hazards.
6. Coil closure of PDA-Mention indication, materials used, procedures & complications.
7. Oxymetry -indications, procedure & interpretation

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

8. Complications of coronary angiogram.
9. Systemic vascular resistance.
10. Calculation of cardiac output -Fick equation or thermo dilution method.
11. Pigtail catheter.
12. Mention complications of Left heart catheterization.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.
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B.SC. IN NEUROSCIENCE TECHNOLOGY -IV SEMESTER
AUGUST 2022

Time: 3 Hours Max. Marks: 60

APPLIED TECHNOLOGY IV: ELECTROMYOGRAPHY AND EVOKED POTENTIALS (BASIC)

Q.P. Code:1978

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Describe principles of electromyography.
2. Describe in detail median nerve somatosensory evoked potential studies.
3. Describe the methodology for conducting visual evoked potential studies.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Describe the methodology for sympathetic skin response studies.
5. Describe electrodes used for electromyography.
6. Write a note on spontaneous electromyography activity describing fibrillation positive sharp wave.
7. Describe interference pattern.
8. Name different wave forms of BAER.
9. Describe Myotonic discharges.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Heart rate variability.
11. Motor unit potential.
12. Describe averaging.
13. Fasciculations.

14. Electrocardiogram.

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Accredited A$^+$ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. IN OPTOMETRY-IV SEMESTER – AUGUST 2022

Time: 3 Hours Max. Marks: 60

OPTOMETRIC INSTRUMENT AND CLINICAL EXAMINATION OF VISUAL SYSTEM

Q.P. Code:0132

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. What is tonometerry? What are the different types of tonometerry? Explain the procedure of applanation tonometerry.
2. Explain the colour vision testing and its interpretations. What is its clinical significance?
3. Explain the normal E.R.G. (Electro Retinogram) and visual evoked potentials.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Explain the instrument used in I.O.L. power calculation.
5. Write a note on accessories instruments used in slit lamp.
6. Explain Bjerrum's screen.
7. Write about hand neutralization.

8. Explain sclerotic scatter.
9. Explain the procedure of removal of corneal foreign body.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Explain normal pupillary reaction.
11. Define Isopter.
12. Write two sources of error while doing keratometerry.
13. Enumerate the principle of Gonioscopy.
14. Anderson's criteria.

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Accredited A$^+$ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. RENAL DIALYSIS TECHNOLOGY-IV SEMESTER

AUGUST 2022

Time: 3 Hours Max. Marks: 60

BASICS IN RENAL DIALYSIS TECHNOLOGY

Q.P. Code:0121

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Discuss in detail about dialysis apparatus. Add a note on Monitors and alarms during dialysis.

2. What are the types of vascular accesses for haemodialysis? Give the advantages and disadvantages of each type.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. Discuss indications of dialysis.
4. Describe types of dialyser & membrane.
5. Water treatment plant.
6. Dialysis reuse.
7. Access recirculation.

SHORT ANSWER QUESTIONS (Answer any THREE): **3 X 5 = 15**

8. What is priming volume?
9. Causes of fever during dialysis.
10. Care of venous dialysis catheters.
11. Write a note on management and prevention of muscle cramps during haemodialysis.
12. Sodium modelling in haemodialysis.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

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B.SC. RENAL DIALYSIS TECHNOLOGY-V SEMESTER

AUGUST 2022

Time: 3 Hours Max. Marks: 60

APPLIED DIALYSIS TECHNOLOGY-II

Q.P. Code:0124

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. How do you plan dialysis in HIV, HBsAg & HCV patients?
2. How do you carry out dialysis reuse and what are advantages and disadvantages.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. What is SLED? What are its advantages and disadvantages?
4. What you mean by continuous therapy (CRRT) in haemodialysis? What are its advantages and disadvantages?
5. What are the difficulties you anticipate in carrying out haemodialysis in pregnant patients?
6. What is the role of haemodialysis in poisoning?
7. What are the challenges faced during dialysis of infants and children?

SHORT ANSWER QUESTIONS (Answer any THREE): **3 X 5 = 15**

8. What are the problems are anticipated in patient considered for haemodialysis with advanced liver disease?
9. How do you conduct haemodialysis in congestive cardiac failure?
10. What are different modalities of peritoneal dialysis?
11. What you mean by MARS? Where it is used.
12. What is haemodiafiltration?

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

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B.Sc. IN MEDICAL LABORATORY TECHNOLOGY

VI SEMESTER – AUGUST 2022

Time: 3 Hours Max. Marks: 60

CLINICAL PATHOLOGY-VI

Q.P. Code:0103

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Discuss blood collection and component preparation. Add a note on storage of components and mention their short life.
2. Discuss investigations in a case of transfusion reaction.
3. Discuss characterisation of human chromosome by various banding techniques.

SHORT ESSAY QUESTIONS (Answer any Five): **5 X 5 = 25**

4. Donor selection.
5. Chromosomal aberrations in cancer.
6. Discuss various procedures used for blood grouping.
7. Preparations of Anti human globulin.
8. Complications of blood transfusion.
9. Principle and procedure of peroxidase anti peroxidase technique.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Define Landsteiner law.
11. Name **three** uses of RBC pack.
12. Cryoprecipitate.
13. Cross matching.
14. Name **three** anticoagulants used in blood banking and their self-life.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

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B.SC. IN ANESTHESIA TECHNOLOGY -VI SEMESTER AUGUST 2022

Time: 3 Hours Max. Marks: 60

APPLIED ANAESTHESIA TECHNOLOGY-III

Q.P. Code:0106

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Discuss intra and post-operative problem of anaesthesia in dental chair.
2. Discuss intra-operative and post-operative management of 2 years old child posted for appendieectomy?
3. Write in detail about preparation of trolly for spinal and epidural anaesthesia. Enumerate complication.

SHORT ESSAY QUESTIONS (Answer any FIVE): **5 X 5 = 25**

4. Complication in anaesthesia.
5. Anaesthetic management of 60 years old make posted for TURP.
6. Local anaesthesia toxicity.
7. Pre-anaesthetic evaluation.
8. Difference between adult and paediatric airway.
9. Discuss pre-operative assessment of patient with cardio vascular disease.

SHORT ANSWER QUESTIONS (All are compulsory): **5 X 3 = 15**

10. Extubation criteria.
11. Glasgow coma scale.
12. Enumerate cardiovascular complications during anaesthesia.
13. Hypothermia prevention and effect.
14. Mallampati grading.

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FIRST SEMESTER - B.Sc. NUTRITION AND DIETETICS DEGREE EXAMINATION – AUGUST 2022

Time: 3 Hours Max. Marks: 80

NUTRITION IN THE LIFE CYCLE-I

Q.P. Code: 0141

Answers should be specific to the Questions asked.
Draw neat & labeled diagrams wherever necessary.
All the questions are compulsory.

Question Number **Marks**

LONG ESSAY QUESTIONS (Answer any TWO): **2 X 10 = 20**

1. Write RDA for normal and pregnant women.
2. Write the dietary guidelines for lactating mother.
3. Compare the nutritional requirements of 7-9 years old and 10-12 years old and discuss the causes for the difference.

SHORT ESSAY QUESTIONS (Answer any EIGHT): **8 X 5 = 40**

4. Write a note on composition of humans and cow's milk.
5. Write five advantages of breast feeding of an infant a) to the infant b) to the mother.
6. Write in brief about special feeding problems in infants.
7. Define low birth weight baby. Write a note on nutrition care of low birth weight infant.
8. Write RDA for toddlers (1-3 years).
9. What is PEM? Explain different forms of PEM.
10. Enumerate the objectives of school lunch programmes.
11. Write a note on pregnancy induces hypertension.
12. Write a note on vitamin A deficiency.

SHORT ANSWER QUESTIONS (All are compulsory): **10 X 2 = 20**

13. List **four** causes of iron deficiency anemia.
14. Define fore milk and hind milk.
15. What are weaning foods?
16. Define edema? How can it be prevented?
17. Define spina bifida.
18. List any **four** nutrients that play an important role in pregnancy.
19. What is the full form of ICDS program?
20. Define marasmus and Kwashiorkor.
21. Define obesity.
22. Define Gestational diabetes mellitus.

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KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

(Declared as Deemed-to-be-University u/s 3 of the UGC Act, 1956)

Accredited A$^+$ Grade by NAAC (3rd Cycle) **Placed in 'A' Category by MHRD (GoI)**

B.SC. RENAL DIALYSIS TECHNOLOGY-V SEMESTER

AUGUST 2022

Time: 3 Hours Max. Marks: 60

APPLIED DIALYSIS TECHNOLOGY-3

Q.P. Code:0125

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.

Question Number **Marks**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

1. Write in detail about water treatment system.
2. What is plasmapharesis? Indications, complications.

SHORT ESSAY QUESTIONS: **5 X 5 = 25**

3. What are the problems faced when you consider patient of diabetes for haemodialysis?
4. What is the role of Telemedicine in haemodialysis?
5. What you mean by daily dialysis? Its advantages and disadvantages.
6. What are the psychological problems anticipated in dialysis patients.
7. How do you treat anemia in chronic kidney disease-stage V on haemodialysis.

SHORT ANSWER QUESTIONS (Answer any THREE): **3 X 5 = 15**

8. Write about dialyser and infections.
9. How do you treat bone disease in dialysis patient?
10. What is Aluminium toxicity in haemodialysis? How to avoid it?
11. What are the difficulties in treating hypertension in haemodialysis patients?
12. What is Noctural dialysis? Its advantages and disadvantages.

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