

KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

(Declared as Deemed-to-be-University u/s 3 & 12B of the UGC Act, 1956)

Accredited A⁺ Grade by NAAC (3rd Cycle)

Placed in 'A' Category by MoE (GoI)

**B.SC. MLTC, RADIOGRAPHY, ANAESTHESIA, PERFUSION, CARDIAC CARE,
NEUROSCIENCE, ENDOSCOPY, CRITICAL CARE, EMERGENCY MEDICINE,
RESPIRATORY CARE TECHNOLOGY, HEALTH INFORMATION
MANAGEMENT, RENAL DIALYSIS, RADIOTHERAPY AND OPTOMETRY- II
SEMESTER–JULY 2025**

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 the uterus under the following headings: a) Parts, position b) Relations c) Blood supply d) Applied anatomy	(3+3+2+2)
2. Describe the Oesophagus under the following headings: a) Gross features & relations b) Blood supply, nerve supply c) Lymphatic drainage & applied anatomy	(5+3+2)
3. Describe the parotid salivary gland under the following headings: a) Gross features & relations b) Blood supply c) Nerve supply d) Applied anatomy	(5+2+2+1)
SHORT ESSAY QUESTIONS (Answer any FIVE):	5 X 5 = 25
4. Discuss in detail the coverings of kidney.	
5. Write in detail about the lymphatic drainage of stomach.	
6. Explain the microscopic structure of duodenum.	
7. Describe the formation and termination of bile duct.	
8. Describe the gross anatomy of urinary bladder.	
9. List the differences between the large intestine and small intestine.	
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 3 = 15
10. Draw a neat labelled diagram of stomach.	
11. Name the curvatures of rectum.	
12. Name the different lobes of liver.	
13. Name the parts of adrenal cortex.	
14. Name the hormones secreted by thyroid gland.	
15. Name the parts of anterior pituitary gland.	

B.SC. IN MEDICAL LABORATORY TECHNOLOGY

IV SEMESTER – JULY 2025

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. Classify and enumerate common renal function test. Describe Creatinine clearance with its significance.	(5+5)
2. Explain in detail the principle, working procedure and applications spectrophotometer.	(2+6+2)
3. Define buffers. Explain the various buffer systems in the body.	(1+9)
SHORT ESSAY QUESTIONS (Answer any FIVE):	5 X 5 = 25
4. What are the functions of liver? Classify liver function tests based on the laboratory findings.	(1+4)
5. Discuss the regulation of water balance in the body.	
6. Mention any two biochemical Parameters of Point of Care Testing (POCT). Discuss in detail the advantages & disadvantages of POCT.	
7. Describe urea clearance test. Mention its clinical significance.	(3+2)
8. List the various hazards that occur in biomedical laboratories.	
9. Discuss the principle and applications of arterial blood gas analyzer.	
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 3 = 15
10. Mention the characteristics of an ideal cardiac marker.	
11. Define internal and external quality control.	(1.5+1.5)
12. Mention the serum normal ranges of sodium, potassium and chloride.	(1+1+1)
13. Write a note on maintenance of laboratory record books.	
14. Explain the Beer Lambert Law.	
15. Give the normal ranges for a) AST b) ALT c) ALP	

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B.S.C. IN MEDICAL LABORATORY TECHNOLOGY

VI SEMESTER – JULY 2025

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. List the various types of vacutainers available for collection of blood along with their use. Add a note on errors which may occur during collection of blood sample.	(5+5)
2. Discuss automation in pre and post analytical aspect of clinical investigation in clinical laboratory. List different types of autoanalyzers used in clinical biochemistry laboratory.	(6+4)
3. List the general laboratory safety principles. Mention various fire hazards in a clinical laboratory. Describe what measures are to be taken in case of fire in a clinical laboratory.	(3+2+5)
SHORT ESSAY QUESTIONS (Answer any FIVE):	5 X 5 = 25
4. Discuss Von Gierke's disease under following headings: a) Enzyme defect b) Clinical features c) Laboratory investigations	
5. Discuss the normal range of analytes in renal panel. Add a note on alteration seen in chronic renal failure.	(3+2)
6. List the chemical and biological hazards in clinical laboratory. Mention the precautions while handling biological hazard.	(3+2)
7. Describe the scope and qualification of technical staff for accreditation process of clinical laboratory.	
8. List the important components of a requisition form. What care must be taken while filling out the requisition form?	(2+3)
9. Discuss analytical errors in clinical biochemistry laboratory. What measures are taken to avoid it?	(2+3)
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 3 = 15
10. What is the normal range of the following analytes: a) Aspartate aminotransferases b) Alanine aminotransferases c) Alkaline transferases	
11. Define decontamination and disinfection.	
12. Name any three types of quality control charts used in clinical laboratory.	
13. Name any three important steps in accreditation process of clinical laboratory.	
14. List three steps as first aid for accidental corrosive acid.	
15. Write the normal range of serum total bilirubin and list two causes of hyperbilirubinemia.	

B.SC. IN RADIOGRAPHY-IV SEMESTER

JULY 2025

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 (Answer any TWO):

2 X 10 = 20

1. Explain in detail basic projections for elbow joint and hand.
2. Explain in details basic projections for sella turcica, optic foramina and zygomatic arches.
3. Explain in detail basic projections for lungs, Cardia & diaphragm.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Write a note on orthopantomography.
5. Write a note on supplementary projections for intervertebral foramina.
6. Write a note on mortise projection.
7. Write a note on projections for sacroiliac joints.
8. Write a note on scapula Y view.
9. Write a note on bitewing radiography.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Write a short note on fisk method.
11. Write a short note on KUB projection.
12. Write a short note on spinal fusion series.
13. Write a short note on judet method.
14. Write a short note on axial projection for patella.
15. Write a short note on projection for carpal tunnel.

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B.SC. IN RADIOGRAPHY-VI SEMESTER

JULY 2025

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 (Answer any TWO):

2 X 10 = 20

1. Explain in detail working principle and instrumentation of gamma camera.
2. Explain in detail principle and instrumentation of PET.
3. Explain in detail production of radionuclides.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Write a note on units of radioactivity.
5. Write a note on properties of alpha, beta and gamma radiation.
6. Write a note on ^{99m}Tc-DTPA for renal imaging.
7. Write a note on pulse height spectrometry.
8. Write a note on radiation dose quality assurance.
9. Write a note on precautions while handling radiopharmaceuticals.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Write a short note on decay constant and half-life.
11. Write a short note on radioimmuno assay.
12. Write a short note on nuclides and its classification.
13. Write a short note on cold kits.
14. Write a short note on ideal characteristics of radiopharmaceuticals
15. Write a short note on HIDA.

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B.SC. IN ANESTHESIA TECHNOLOGY/PERFUSION TECHNOLOGY/CARDIAC CARE TECHNOLOGY -IV SEMESTER - JULY 2025

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 oral hypoglycaemic drugs. Discuss the Mechanism of action, therapeutic uses and adverse effects of Metformin.	(3+3+2+2)
2. Classify Local Anaesthetic agents. Discuss therapeutic uses and adverse effects of Lignocaine Hydrochloride. Add a note on preaneasthetic medication.	(2+3+2+3)
3. Classify antiepileptic drugs. Explain the mechanism of action, uses and adverse effects of phenytoin sodium.	(3+2+2+3)
SHORT ESSAY QUESTIONS (Answer any NINE)	9 X 5 = 45
4. Enumerate different types of shock. Discuss the management of anaphylactic shock.	(2+3)
5. Name the different types of antithyroid drugs and give one example of each. Describe the mechanism of action and clinical use of radioactive iodine (I131)	(2+3)
6. Enumerate drugs used for cough with suitable examples. Describe the adverse effects and uses of dextromethorphan.	(2.5+2.5)
7. Enumerate antihistaminics. Discuss uses and adverse effects of 1 st generation antihistaminics.	(2+3)
8. Enumerate intravenous anaesthetics. Discuss the salient features of intravenous anaesthetics.	(2+3)
9. Enumerate drugs used in peptic ulcer disease. Discuss uses and adverse effects of Proton pump inhibitors.	
10. Enumerate antiplatelet drugs and discuss their uses.	
11. Define antiseptics and disinfectants. Give two differences between them. Mention the uses of chlorhexidine.	(3+2)
12. Discuss the mechanism of actions, adverse effects and uses of Ondansetron.	
13. Enumerate the uses and common adverse effect of corticosteroids.	
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 3 = 15
14. Write three uses of ethyl alcohol.	
15. Enumerate antifibrinolytic agents along with their indications.	
16. Name any three drugs used for diarrhoea.	
17. Name any three drugs used in status asthmaticus.	
18. Name any three killed vaccines.	
19. Write three indications for use of diazepam.	

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B.SC. IN ANESTHESIA TECHNOLOGY-VI SEMESTER**JULY 2025**

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. Discuss minimum mandatory monitoring under anaesthesia.
2. Enumerate indication for Central Venous Pressure (CVP) monitoring. Discuss (5+5) preparation of tray for CVP line.
3. Write in detail about Adult Cardiac Life Support (ACLS).

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

4. Write a note on airway gadgets used in recovery.
5. Draw and explain neuromuscular junction with the help of neat and labelled diagram.
6. Draw a neat labelled diagram for arterial pressure monitoring and preparation for the same.
7. Discuss End tidal carbon dioxide monitoring (EtCO₂).
8. List various site of temperature monitoring and its importance.
9. Write in detail about monitoring depth in anaesthesia.

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

10. List emergency drugs with their dosages.
11. List components of Arterial Blood Gas (ABG).
12. Write in detail about prevention of hypothermia.
13. Write a note on laryngoscope.
14. List component of difficult airway cart.
15. Write a note on Propofol.

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B.S.C. IN CARDIAC CARE TECHNOLOGY -VI SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

ECG & ECHO

Q.P. Code:0107

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 the indications, contraindications and diagnostic characteristics of the exercise electrocardiogram in treadmill testing.
2. Write and explain in detail about echocardiographic features of mitral valve diseases.
3. Write & explain in detail about echocardiographic features in pericardial diseases.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Discuss the procedure & indications for transesophageal Echo.
5. Echo in infective endocarditis.
6. Describe ECG in A – V nodal blocks.
7. Uses of defibrillator.
8. Holter monitoring-procedure and usefulness.
9. Contrast ECHO.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. ECG in hypokalemia.
11. Echocardiographic features in TOF.
12. Echo findings in Dextrocardia.
13. ECG in atrial fibrillation.
14. Normal ECG interpretation.
15. ECHO in restrictive cardiomyopathy.

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B.S.C. IN PERFUSION TECHNOLOGY-VI SEMESTER

JULY 2025

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 (Answer any TWO):

2 X 10 = 20

1. Explain the complication in VV and VA ECMO and its management.
2. Describe the indications of LVAD and complications.
3. Quote organ preservation techniques in heart transplant. Discuss the composition of HTK solution and its delivery method in donor heart.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Define the use of impeller and the technology of the device. Mention the management and complications related to it.
5. Illustrate the safety protocols employed during CPB.
6. Mention the prime composition in paediatric CPB. Role of human albumin.
7. Describe the cannulation techniques in minimally invasive surgeries.
8. Discuss the management of VV ECMO with Avalon cannula and its complications.
9. Explain the anticoagulation during ECMO and its monitoring.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Name cyanotic heart diseases. What is BT shunt procedure?
11. What are the reasons for high line pressures? Steps to manage high line pressure.
12. Define VAVD and its application during CPB.
13. Mention the indication for lung transplant.
14. What are miniaturized CPB circuits? What is the need?
15. What is the role of modified ultrafiltration?

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B.S.C. IN NEUROSCIENCE TECHNOLOGY -IV SEMESTER

JULY 2025

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. Describe the anatomy of sacral plexus along with a neat labelled diagram.
2. Describe the somatosensory pathway.
3. Describe the physiology of muscle contraction.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Briefly discuss the anatomy of radial nerve.
5. Briefly discuss the visual pathway.
6. Explain Spinothalamic sensory pathway.
7. Draw a neat labelled diagram of cross sectional anatomy of spinal cord.
8. Briefly describe the muscles of arm.
9. Describe Motor Unit.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Phrenic nerve.
11. Muscles innervated by median nerve.
12. Muscles innervated by deep peroneal nerve.
13. Enumerate the muscle innervated by femoral nerve.
14. Saphenous nerve.
15. Sural nerve.

B.SC. IN NEUROSCIENCE TECHNOLOGY –VI SEMESTER

JULY 2025

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. Discuss the features, diagnosis and treatment of Guillain Barre syndrome.
2. Discuss muscular dystrophies.
3. Discuss the different entrapment neuropathies.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Ulnar neuropathy at elbow.
5. Briefly discuss inflammatory myopathies.
6. Multiple sclerosis.
7. Causes of dystonia.
8. Amyotrophic lateral sclerosis.
9. Discuss Carpal tunnel syndrome.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Causes of compressive myelopathies.
11. Chorea
12. Tremors.
13. Myotonia.
14. Entrapment of common peroneal nerve.
15. Optic neuritis.

SECOND SEMESTER – BACHELOR OF PUBLIC HEALTH
BACHELOR OF PUBLIC HEALTH (HONS)
DEGREE EXAMINATION – JULY 2025

Time: 3 Hours

Max. Marks: 80

BASIC SCIENCE II-MICROBIOLOGY

Q.P. Code:1855

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 bacteria. Write the classification of bacteria and enlist human diseases caused by them.
2. Draw a neat labelled diagram of fungus and explain its morphology. Enlist human diseases caused by fungus.
3. What is a parasite? Write the morphology of parasite. Enlist any **five** diseases caused by parasites

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Describe the preventive measures for community acquired microbial infection
5. Differentiate between innate immunity and acquired immunity.
6. Write classification of parasites with suitable examples.
7. Define Antigen. Discuss properties of antigen
8. Write in brief about scope of microbiology in Public Health.
9. Describe Morphology of Virus. List any **five** diseases caused by virus.
10. Explain in detail about indirect/passive agglutination test
11. Define antibody. Discuss the various types of antibodies.
12. Describe different techniques of precipitation reaction
13. Describe different techniques of agglutination reaction.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3= 15

14. Define mycology and fungi
15. Define neutralization test and mention its types.
16. List the different staining methods for bacteria.
17. Write components of first line of defense mechanisms.
18. Write uses of complement fixation test.
19. What is Opsonization?

**FOURTH SEMESTER – BACHELOR OF PUBLIC HEALTH
BACHELOR OF PUBLIC HEALTH (HONS)
DEGREE EXAMINATION – JULY 2025**

Time: 3 Hours

Max. Marks: 80

HEALTH OF CHILD ADOLESCENT AND AGEING OF POPULATION

Q.P. Code:1862

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. How physical growth of children is assessed? Enumerate the causes of disorder of growth. Add a note on utility of growth chart.
2. Discuss the role of Social Pediatrics in the total well-being of the child.
3. Discuss sexual behavior of adolescents, early marriage and teenage pregnancy.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Explain cataract in elderly population.
5. Write about neurological problems among elderly population.
6. Explain in brief about Child Labour Act.
7. Explain the indicators of child health.
8. Write in brief about IMNCI.
9. Describe in brief about exclusive breast feeding.
10. Write in brief about gender issues & gender discrimination.
11. Write about substance abuse and its prevention.
12. Write a note on Baby Friendly Hospital Initiative (BFHI)
13. Briefly discuss ICDS program.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. Mention any **three** major mental health problems in elderly population.
15. What is weaning? Write its importance.
16. Define stunting, wasting and obesity.
17. Define growth chart, low birth weight and sex ratio.
18. What are the vaccines given at 14 weeks of age?
19. What is juvenile delinquency? Enumerate any **three** causes.

**SIXTH SEMESTER – BACHELOR OF PUBLIC HEALTH
BACHELOR OF PUBLIC HEALTH (HONS)
DEGREE EXAMINATION – JULY 2025**

Time: 3 Hours

Max. Marks: 80

PREVENTIVE OBSTETRICS AND FAMILY PLANNING

Q.P. Code:1868

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 about the causes of maternal mortality.
2. Define Maternal death review. Write types and discuss about the facility based maternal death review.
3. Define infertility. Explain causes of infertility.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Define Partograph. Write uses of partograph in public health.
5. Explain syndromic case management of STI/RTI.
6. Expand DMPA. Write about dose & mode of administration. Write advantages and adverse effects of DMPA.
7. Discuss in brief about recommendations of pre-conceptional interventions for all women.
8. Discuss in brief about permanent sterilization in female.
9. Define perinatal death. Write the steps of perinatal death review.
10. Enumerate types of marriage. Write in detail about the functions of marriage.
11. Discuss antenatal examination.
12. Write 5X5 matrix for RMNCHA program.
13. Discuss subjective and objective signs and symptoms of second trimester.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. Define safe motherhood and write any **two** components of safe motherhood program.
15. Define eligible couple.
16. Briefly explain GATHER.
17. Write a short note on mini pills.
18. Define maternal mortality rate and maternal mortality ratio.
19. Expand IUCD, CSSM and JSY.

B.SC. RENAL DIALYSIS TECHNOLOGY-IV SEMESTER

JULY 2025

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 (Answer any TWO):

2 X 10 = 20

1. Explain the urinary system with the help of a neat labelled diagram.
2. Discuss the steps of urine formation.
3. Describe the anatomy of peritoneum.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Outline the blood supply to the kidney.
5. Discuss the glomerular filtration rate.
6. Write a note on factors affecting renal autoregulation.
7. Describe the anatomy of upper limb vessels.
8. Outline the hormones produced by the kidney.
9. Discuss the abnormalities associated with abnormal blood pH.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Define Hyponatremia.
11. Write the types of coagulation cascade.
12. Define malnutrition.
13. Describe the anatomical structure of the proximal convoluted tubule.
14. List the stages of kidney development.
15. Functional sites of narrowing in ureter.

B.SC. RENAL DIALYSIS TECHNOLOGY-VI SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

PAPER-I

Q.P. Code:1123/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. Describe hemodialysis for allograft dysfunction with causes and nursing considerations.
2. Elaborate on the use and functioning of a defibrillator in advanced life support.
3. Write an essay on infection control strategies in dialysis for transplant recipients.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. List common drugs used in ALS.
5. Write the indications for plasmapheresis.
6. Mention routes of nutritional support.
7. Mention types of renal rejection.
8. Describe the nursing care for unconscious ICU patient.
9. Write short note on EPO in transplant patients.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Full form of ALS.
11. Name one sedative drug.
12. One sign of sepsis in dialysis patient.
13. What is the function of NG tube?
14. What is skin integrity?
15. What is a defibrillator?

B.S.C. IN OPTOMETRY-IV SEMESTER – JULY 2025

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. Describe the visual pathway with diagram. Add a note on effect of lesion of visual pathway at optic chiasma, left optic nerve and right optic tract.
2. Explain the theories of colour vision. Add a note on colour blindness.
3. Explain in detail factors affecting corneal transparency.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Discuss dark adaptation.
5. Describe mechanism of formation & drainage of aqueous humour. Add a note on its biochemical composition.
6. Discuss physiology of vision.
7. Describe the changes that occur in lens due to aging.
8. Write a note on Vitamin A deficiency with respect to eyes.
9. Discuss composition of blood.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Discuss saccades.
11. Discuss blood retina barrier.
12. Discuss field of vision.
13. Discuss biochemical composition of vitreous.
14. Discuss vergences.
15. Mention the functions of tear film.

B.SC. IN OPTOMETRY-VI SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

LOW VISION AIDS, GERIATRIC OPTOMETRY, PEDIATRIC OPTOMETRY & COMMUNITY OPTOMETRY

Q.P. Code:0136

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 amblyopia. Discuss its types and management methods. What's the role of vision therapy in management of amblyopia?
2. Define blindness. List the common causes of blindness. Discuss NPCB and how vision 2020 is implemented.
3. Explain myopia in detail. Discuss the compensatory and remedial treatment for myopia.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Write a short note on congenital cataract.
5. Explain the refractive changes in elderly.
6. Write in detail about paediatric refraction.
7. Tabulate and compare the advantages and disadvantages of a stand and hand held magnifier.
8. What is rehabilitation and mobility training? What is eccentric viewing and fixing?
9. Write a short note on role of optometrist in public health.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Name any **three** paediatric visual acuity testing charts.
11. Discuss industrial vision screening.
12. Mention WHO definition of low vision.
13. Discuss computer vision syndrome.
14. Discuss allergic conjunctivitis in childhood.
15. Discuss rehabilitation of blind.

**SECOND SEMESTER - B.Sc. NUTRITION AND DIETETICS
DEGREE EXAMINATION – JULY 2025**

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.

Question Number

Marks

LONG ESSAY QUESTIONS (Answer any TWO):

2 X 10 = 20

1. What is Landsteiner's Law of blood groups? Describe the mechanism of blood coagulation.
2. With a neat labeled diagram of heart explain cardiac cycle.
3. What are the stages involved in spermatogenesis? Discuss the functions of testosterone.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Describe the physiology of urine formation.
5. Draw a neat labeled diagram of skin. Write the functions of skin.
6. Discuss the phases of menstrual cycle.
7. Explain the functions of basal ganglia in brief.
8. Discuss the functions of hormones secreted by thyroid gland.
9. Discuss the stages of erythropoiesis in brief.
10. Explain the process of digestion and absorption of fats.
11. With a neat labeled diagram discuss the tracheobronchial tree.
12. Enumerate the differences between isometric and isotonic muscle contraction.
13. Describe the process of oogenesis in brief.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. Define blood pressure. Write the normal ranges.
15. What are the hormones necessary for lactation?
16. What are the exocrine functions of pancreas?
17. Write any **two** functions of cerebellum.
18. Classify muscles based on functions.
19. Name **three** lipolytic enzymes.

FOURTH SEMESTER - B.Sc. NUTRITION AND DIETETICS

DEGREE EXAMINATION – JULY 2025

Time: 3 Hours

Max. Marks: 80

ADVANCED DIETETICS

Q.P. Code: 1125

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 pathophysiology and medical nutrition therapy in hepatitis.
2. Describe the dietary management in type 2 diabetes mellitus. Mention the diagnostic criteria of diabetes.
3. Enumerate the risk factors of cardiovascular diseases. Explain the pathophysiology of atherosclerosis.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Explain the nutritional management in nephrolithiasis.
5. Write a short note on nutritional management in binge-eating disorder.
6. Explain DASH diet.
7. Write a short note on ketonuria in diabetes mellitus.
8. Discuss any **two** nutritional problems and their management related to chemotherapy.
9. Write a short note on initial nutritional management in myocardial infarction.
10. Write a short note on purine restricted diet.
11. Discuss the medical nutrition therapy in acute pancreatitis.
12. What is the role of elimination diet in management of migraine?
13. What is Alzheimer's disease? Provide a sample menu (any two meals) for patients on ketogenic diet.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. What is cholestasis? Mention possible causes.
15. What is nephrotic syndrome?
16. Write any **three** nutritional recommendations for multiple sclerosis.
17. Explain any **three** functions of kidneys.
18. What are the stages of carcinogenesis?
19. What are the risk factors of uric acid stones?

KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

(Declared as Deemed-to-be-University u/s 3 & 12B of the UGC Act, 1956)

Accredited A+ Grade by NAAC (3rd Cycle)

Placed in 'A' Category by MoE (Gov)

SIXTH SEMESTER - B.Sc. NUTRITION AND DIETETICS

DEGREE EXAMINATION – JULY 2025

Time: 3 Hours

Max. Marks: 80

FOOD SERVICE AND MANAGEMENT

Q.P. Code: 1143

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 the planning process and the steps involved in planning a food service unit.
2. Explain the term purchasing and the methods of purchasing.
3. What are the principles of menu planning? Discuss the factors influencing menu planning with types of menus.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Brief explain self-service as a method of food service.
5. Explain about importance of training for the staff of a food service unit.
6. What is a layout design? Discuss factors affecting layout design.
7. Discuss the functions of the menu served in food service establishment.
8. Discuss the criteria for the selection of staff in a food service establishment.
9. Classify food service establishments based on profit-making.
10. Discuss the importance of hygiene and sanitation in industrial kitchens.
11. Comment on waiter service as a method of food service.
12. Who is the food buyer? Discuss the essential qualities needed for a food buyer.
13. Comment on the characteristics of food.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. Name the different work areas in a food service unit.
15. Why is proper lighting important in food service units?
16. Define centralized and decentralized food service systems.
17. List **two** ways to ensure hygienic handling of food.
18. What is the significance of employee health in food service?
19. What is food vending?

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Accredited A+ Grade by NAAC (3rd Cycle)

Placed in 'A' Category by MoE (Gol)

B.SC. IN CRITICAL CARE TECHNOLOGY-IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

BASICS OF INTENSIVE CARE TECHNOLOGY PART-I

Q.P. Code:1128

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 in detail about various method of confirming endotracheal tube placement.
2. Draw neat labelled diagram of high flow nasal cannula. Discuss its indications, contraindications & complications. Discuss humidification techniques on high flow cannula.
3. Discuss how to troubleshoot high peak airway pressure alarm.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Discuss in brief oropharyngeal airway.
5. Discuss basic steps in reading chest X-ray.
6. Discuss monitoring of patient on oxygen delivery system.
7. Discuss low capacity oxygen delivery devices.
8. Discuss steps of confirming NASO gastric tube.
9. Discuss hazards of oxygen therapy.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Mention **three** causes for increased plateau pressure.
11. Mention parameters to be monitored post extubation.
12. Draw a neat labelled diagram of venture mask.
13. Draw a neat labelled diagram of nasal airway.
14. Name **three** active humidification techniques.
15. Name **three** passive humidification techniques.

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Accredited A* Grade by NAAC (3rd Cycle)

Placed in 'A' Category by MoE (Gol)

B.SC. EMERGENCY MEDICINE -IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

EMERGENCY MEDICINE TECHNOLOGY - I

Q.P. Code: 1146

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 different secretion removal techniques.
2. Discuss in detail about various methods of confirming endotracheal tube placement.
3. Discuss principle of pulse oximetry and mention its uses and its shortcomings.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Discuss in brief nasal airway.
5. Mention in brief various airway humidification techniques.
6. Discuss in brief variable performance oxygen delivery systems.
7. Low capacity oxygen delivery devices.
8. Draw a neat labelled diagram of tracheostomy tube and write a short note on tracheostomy tube care.
9. Monitoring of patient on oxygen therapy devices.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Neat labelled diagram of oropharyngeal airway.
11. Write a short note on endotracheal tube cuff pressure.
12. Mention optimal airway suction pressure.
13. HME filter.
14. Mention **three** causes of high plateau pressures.
15. Mention **three** high capacity oxygen delivery devices.

B.SC. IN CRITICAL CARE TECHNOLOGY-VI SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

INTENSIVE CARE TECHNOLOGY-ADVANCED

Q.P. Code:1149

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 in brief skin integrity assessment. Write an essay on pressure sore care.	(3+7)
2. Discuss various pain assessment tools.	
3. Discuss in brief various hazards of electrocution. What all parameters have to be monitored in patients with electrical burns?	(5+5)
SHORT ESSAY QUESTIONS (Answer any FIVE):	5 X 5 = 25
4. Mention classification, mechanism of action, therapeutic dose and adverse effect of injection Amioderone	(1+2+1+1)
5. What are the Implications of fats in nutrition?	
6. Explain in brief maintenance of defibrillator.	
7. Mention various crystalloids used in ICU with its composition.	
8. Health hazards of thermal burns in closed environment.	
9. Write a short essay on Injection adrenaline.	
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 3 = 15
10. Mention various colloids used in ICU.	
11. Mention Macro nutrient requirement in critically ill patient.	
12. Grading of bed sores.	
13. Mention various routes of nutritional support.	
14. Classify defibrillators.	
15. Mention basic steps of wound care.	

B.SC. IN ENDOSCOPY TECHNOLOGY-IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

CONCEPTS IN GASTROENTEROLOGY DISEASES

Q.P. Code:1131

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 causes, clinical features and endoscopic treatment options for upper GI bleeding.
2. Explain the pathophysiology, complications and endoscopic findings in acute and chronic pancreatitis.
3. Discuss colorectal cancer in detail, including risk factors, symptoms, screening and the role of colonoscopy in diagnosis.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Write a short note on diverticulosis and diverticulitis.
5. Describe the classification and symptoms of dyspepsia.
6. Explain the diagnostic role of endoscopy in gastric outlet obstruction.
7. Differentiate between Crohn's disease and ulcerative colitis.
8. What is hepatitis B? How is it related to gastrointestinal health?
9. Write a note on non-alcoholic fatty liver disease (NAFLD) and its progression.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Define hematemesis.
11. Mention **two** causes of jaundice.
12. What is a gastric polyp?
13. Name any **two** complications of liver cirrhosis.
14. Define malabsorption syndrome.
15. List **two** causes of esophageal strictures.

**SECOND SEMESTER – BACHELOR IN HOSPITAL ADMINISTRATION
DEGREE EXAMINATION – JULY 2025**

Time: 3 Hours

Max. Marks: 80

EPIDEMIOLOGY & PUBLIC HEALTH ADMINISTRATION

Q.P. Code:7025

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 are Five Year Plans? Give account of any **two** Five Year Plans.
2. Write a short note on International Health Organizations with examples.
3. Give a detailed account of National Rural Health Mission.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Discuss functions of World Health Organization (WHO).
5. What are voluntary health agencies? Explain any **four** important functions they perform in the field of public health.
6. Write a short note on Primary Health Centre (PHC).
7. Common nutritional problems faced by rural population of India.
8. Write a note on National Health Programmes related to non-communicable diseases.
9. Enumerate various National Health Programmes related to communicable diseases in India.
10. Explain the current population scenario in India. Mention **four** effects of overpopulation on the country's development.
11. Classify diseases and explain any **four** types with example.
12. Explain health management on central, state and local level in India.
13. What is the National Health Policy of India? Describe any **four** key goals or strategies outlined in the policy.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. What is World Health Organization (WHO)?
15. What is India's current total fertility rate & child mortality rate?
16. What is the integrated child development scheme (ICDS)? Mention **two** key services it provides.
17. What is Bhole committee? Mention **two** key recommendations it made for improving healthcare in India.
18. What is the United Nation Development Programme (UNDP)? Explain its purpose.
19. What are non-communicable diseases?

B.SC. IN RADIATION THERAPY-IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

RADIATION THERAPY EQUIPMENT'S

Q.P. Code:1155

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 about the accelerating waveguide system, bending magnet system and Linac head component.
2. Explain about the remote after loader brachytherapy and its applicators.
3. Explain in detail about the Tele gamma Co-60 machine with various source movement mechanism and its source housing.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Write a short note on Vande-graff generator with neat diagram.
5. Briefly explain the ON/OFF head leakage radiation of CO-60 Tele gamma machine and its tolerance doses as per AERB.
6. Write a short on Klystron with neat diagram and its uses.
7. Explain the factors affecting the CT images.
8. Write briefly about third generation of CT scanners.
9. Write a short note on Beam collimation system and multi leaf collimators.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Write any **three** historical developments of radiotherapy units.
11. What is collimator leakage radiation and its tolerance?
12. Name any **three** heavy charged particles.
13. What technique is used in the third generation CT machine?
14. What is CT number or Hounsfield unit?
15. Write short note on transport container.

B.SC. EMERGENCY MEDICINE - VI SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

EMERGENCY MEDICINE TECHNOLOGY – ADVANCED

Q.P. Code: 1161

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 basic science and physiology of cardiac defibrillation/ cardioversion.
2. Discuss in brief problems faced by prolonged bed bound patients and strategies to prevent them.
3. Discuss various routes available to provide nutrition in critically ill patients.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Expand BLS and discuss in short chain of survival in BLS.
5. Discuss in brief Injection Amiodarone with respect to its indications and its role in ACLS in detail.
6. Discuss any **one** scale available to assess skin integrity in a bed bound patient.
7. Discuss in brief the process of chest physiotherapy.
8. Classify wounds.
9. Discuss the nutritional requirements of critically ill patients.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Mechanism of action of Injection adrenaline.
11. Mechanism of action of Injection Amiodarone.
12. Why is gel used on defibrillator pads during cardio version/defibrillation?
13. Describe in short Avulsion injury.
14. Differentiate between cut lacerated wound and lacerated wound.
15. Describe in short lacerated wound.

B.S.C. IN RESPIRATORY CARE TECHNOLOGY-IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

PHARMACOLOGY 2

Q.P. Code:1158

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 anticoagulants. Write mechanism of action, uses and adverse effects of heparin.	(3+3+2+2)
2. Classify drugs for peptic ulcer with suitable examples. Explain the adverse effects and uses of proton pump inhibitors (PPIs).	(4+3+3)
3. Classify the drugs used in the treatment of bronchial asthma with suitable examples. Write the role of beta 2 agonists in the treatment of bronchial asthma. Add a note on the treatment of acute severe asthma (status asthmaticus).	(4+3+3)
SHORT ESSAY QUESTIONS (Answer any FIVE):	5 X 5 = 25
4. Enumerate antithyroid drugs with examples. Describe the mechanism of action and adverse effects of propylthiouracil.	(2+3)
5. Enumerate different types of shock. Discuss the management of hypovolemic shock.	
6. Enumerate second generation antihistaminics. Discuss advantages of second generation antihistaminics over first generation antihistaminics.	(2+3)
7. Define preanesthetic medication. Discuss its aims and various classes of drugs used with rationale.	
8. Classify antianxiety drugs with suitable examples. Explain therapeutic uses and adverse effects of benzodiazepines.	
9. Define antiseptics and disinfectants. Give two differences between them. Mention the uses of chlorhexidine.	(3+2)
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 3 = 15
10. Enumerate any three mucolytic drugs.	
11. Enumerate any three non-benzodiazepine hypnotics.	
12. What is eutectic mixture and what is its advantage?	
13. Mention any three adverse effects of corticosteroids.	
14. Rationale for use of disulfiram in alcohol deaddiction therapy.	
15. Name any three vaccines along with their indications.	

**B.SC. MLTC, RADIOGRAPHY, RADIO DIAGNOSIS, RESPIRATORY, ANAESTHESIA,
PERFUSION, CARDIAC CARE, NEUROSCIENCE, RENAL DIALYSIS, HEALTH
INFORMATION MANAGEMENT, RESPIRATORY TECHNICIAN AND OPTOMETRY-II
SEMESTER JULY 2025**

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
1. Define cardiac cycle and write the duration of it. Describe the different phases occurring in one cardiac cycle.	(3+7)
2. Discuss the composition and functions of saliva.	(5+5)
SHORT ESSAY QUESTIONS (Answer any TWO):	2 X 5 = 10
3. Describe micturition reflex.	
4. Describe Oxygen-Hemoglobin Dissociation Curve (ODC) with labeled diagram. Name the various factors shifting the curve to the right.	(1+4)
5. What is contraception? Classify various contraceptive methods in male and female.	(1+4)
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 2 = 10
6. Name the forms of carbon-dioxide transport.	
7. Define and classify jaundice.	
8. Write a note on characteristics of heart sounds 1 and 2.	
9. Functions of Sertoli cells.	
10. List the hormones maintaining calcium levels in the blood.	
11. Define Glomerular Filtration Rate (GFR) and write its normal value.	

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 how glucose is metabolized to pyruvate in the body. Discuss the energetics for the same.	(8+2)
2. Explain the process of Blood Specimen Collection. Add a note on the different types of vacutainers.	(7+3)
SHORT ESSAY QUESTIONS (Answer any TWO):	2 X 5 = 10
3. Describe in detail digestion and absorption of proteins	
4. Explain the Wald's visual cycle.	
5. Define Isoenzymes. Enumerate the clinical significance of any two isoenzymes.	(1+4)
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 2 = 10
6. Mention the coenzyme forms of riboflavin and the reactions catalysed by them.	(1+2)
7. Name the Ketone bodies. Give two conditions characterized by excessive production of Ketone bodies.	
8. Give the Normal serum levels of : a) Fasting Blood Sugar (FBS) b) Albumin	
9. Enumerate any four factors affecting Basal Metabolic Rate	
10. Mention the applications of Colorimeter and pH meter	
11. List the Fat Soluble vitamins	

B.Sc. IN MEDICAL LABORATORY TECHNOLOGY

IV SEMESTER – JULY 2025

Time: 3 Hours

Max. Marks: 60

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. Classify fixatives. Discuss various aldehyde groups of fixatives. Add a note on various formalin fixatives. (2+4+4)
2. Discuss tissue processing.
3. Discuss museum technology and specimen preservation.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Discuss working of polarising microscope and its application.
5. Discuss working of automated slide stainer.
6. Discuss the procedure of tissue section cutting on rotary microtome.
7. Discuss various tissue embedding media.
8. Discuss principle and procedure of GMS stain.
9. Discuss tissue embedding station.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Discuss advantages and disadvantages of xylene.
11. Discuss principle of MTS stain and its uses.
12. Name **three** applications of frozen section.
13. Discuss Blueing.
14. Name **three** types of knives for tissue section cutting.
15. Describe the procedure of honing.

**B.Sc. IN MEDICAL LABORATORY TECHNOLOGY
VI SEMESTER – JULY 2025**

Time: 3 Hours

Max. Marks: 60

CLINICAL 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 principle of ELISA. Discuss in detail its applications in diagnostic microbiology laboratory. (4+6)
2. Discuss the types of biomedical waste. Discuss in detail its segregation and disposal as per the latest regulations. (4+6)
3. Describe universal safety precautions. Explain their importance in health care settings. (6+4)

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Write the classification of bacterial culture media. Add a note on transport media and their uses.
5. Define nosocomial infection. Discuss the common etiological agents causing such infections.
6. Discuss stool examination and its utility for diagnosis of parasitic infections.
7. Explain standard precaution for collection of clinical specimen for microbiological examination. Write **two** instances for rejection of samples.
8. Describe automation and its implications in diagnostic microbiology laboratory.
9. Describe the principle and applications of autoclave in a health care setting.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. What is cold sterilization? Name **two** items that can undergo cold sterilization.
11. Classify biosafety cabinets and write **one** use of each type.
12. Name **three** commonly used disinfectants in hospital and write their applications.
13. Write **three** diagnostic applications of blood culture.
14. Explain slide culture for fungal growth.
15. What are enriched media? Give **three** examples.

B.SC. IN RADIOGRAPHY-IV SEMESTER

JULY 2025

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 (Answer any TWO):

2 X 10 = 20

1. Explain in detail indications, contraindications and technique for small bowel enema.
2. Explain in detail the indications, contraindications, preparation, procedure, filming for percutaneous transhepatic biliary drainage.
3. Explain in detail indications, contraindications, preparation, procedure and filming for hysterosalpingography.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Write a note on indication, procedure, filming and complications for loopogram.
5. Write a note on types of contrast media reactions.
6. Write a note on indications, contraindications & technique for sialography.
7. Write a note on indications, procedure, filming and complications for myelography.
8. Write a note on indications and procedure for endoscopic retrograde cholangiopancreatography.
9. Write a note on catheters and guide wire.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Write a short note on indications and contraindications for MR urography.
11. Write a short note on list of emergency drugs in the radiology department.
12. Write a short note on technique of barium swallow for tracheo-oesophageal fistula.
13. Write a short note on technique for percutaneous lung biopsy.
14. Write a short note on difference between small and large bowel.
15. Write a short note on procedure of dacrocystography.

B.SC. IN RADIOGRAPHY-VI SEMESTER

JULY 2025

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 (Answer any TWO):

2 X 10 = 20

1. Explain the design and significance of randomized control trials. Add a note on advantages and disadvantages.
2. Explain in detail medicolegal aspects of the radiographers work.
3. Explain in detail about the measures of central tendency with examples.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Write a note on basic scales of measurement used in biostatistics.
5. Write a note on uses of epidemiology.
6. Write a note on cardiopulmonary resuscitation.
7. Write a note on electrocardiograph.
8. Write a note on research problem.
9. Write a note on patient care while handling trauma patients.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Write a short note on patient transfer.
11. Write a short note on importance of biostatics in medical research.
12. Write a short note on misconduct and malpractice.
13. Write a short note on quantitative and conceptual research.
14. Write a short note on odds ratio.
15. Write a short note on communication skills with patient.

B.S.C. IN ANESTHESIA TECHNOLOGY-IV SEMESTER

JULY 2025

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 anatomy of epidural space and various techniques. Write a note on needle.
2. Discuss applied anatomy of caudal space. Write indication, contraindication and complication.
3. Describe in brief preparation of anaesthesia workstation for a care under spinal anaesthesia.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Classification of local anaesthesia, write mechanism action.
5. List post-operative monitoring after regional anaesthesia.
6. CSF circulation.
7. Write a note on combined spinal epidural anaesthesia.
8. List systemic effect of spinal anaesthesia and how to treat the same.
9. Write a note on oropharyngeal and nasopharyngeal airway with the help of diagram.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. List content of DNS and its use.
11. List various spinal needles and its use.
12. Write a note on endotracheal tube with its indications.
13. Write a note on oxygen face mask and nasal prong.
14. Name the additive used in spinal anaesthesia and its effect.
15. List **three** advantages of combined spinal epidural over individual blocks.

B.S.C. IN ANESTHESIA TECHNOLOGY -VI SEMESTER

JULY 2025

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. Explain endotracheal tube in detail. List various types of endotracheal tube.
2. Discuss assessment of airway. How to prepare OT for fibre optic intubation.
3. Discuss standards recommendation for prevention of electrocution in the operating room.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Preparation of OT for wrist block. What is Allen's test?
5. List various complications in PACU (Post Anaesthesia care unit). Explain **one** in detail.
6. Write in detail algorithm of Basic Life Support.
7. Write a note on electrical safety in operative room.
8. List of drugs with their dosage used in general anaesthesia.
9. Write a note on post-operative nausea & vomiting.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. List common complication in recovery room.
11. With the help of colour coding write various cannula with their flow rate.
12. List emergency drugs.
13. Write a note on Micro and Macro shock.
14. List treatment for post-operative shivering.
15. List drugs used for post-operative pain management.

B.SC. IN CARDIAC CARE TECHNOLOGY -IV SEMESTER

JULY 2025

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 (Answer any TWO):

2 X 10 = 20

1. Describe general principles of hemiblocks and ECG features of left anterior hemiblock.
2. Mention indications & contraindications of TMT. Describe Bruce & modified Bruce exercise. List complications of TMT.
3. Describe in detail ECG features in a cyanotic congenital heart diseases.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. ECG features in aortic stenosis.
5. ECG features in dextrocardia.
6. QT interval.
7. Describe the ECG findings in mitral stenosis.
8. ECG features of hypertrophic cardiomyopathy.
9. ECG features in pericarditis.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. T wave in ECG
11. ECG in TOF
12. Naughton exercise protocol.
13. PR interval and causes for its prolongation
14. ECG in pericardial effusion.
15. ECG in RBBB.

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**B.SC. IN CARDIAC CARE TECHNOLOGY -VI SEMESTER
JULY 2025**

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 (Answer any TWO):

2 X 10 = 20

1. Describe the procedure and materials used in balloon mitral valvotomy.
2. Describe the procedure of PDA device closure and its complications.
3. Describe the procedure of permanent pacemaker's implantations & its complications.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Materials used in EP (Electro physiological) study.
5. Right heart catheterization.
6. Cath study in patients of tetralogy of fallot.
7. Shunt calculations in case of left to right lesions.
8. Local complications of angiogram.
9. Write in brief about coronary angiography views.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Radiographic contrast agents.
11. Mention normal pressures of all cardiac chambers.
12. Radial artery puncture.
13. Interrogation of pacemaker device.
14. Types of VSD devices.
15. Complications of transcatheter aortic valve replacement.

B.S.C. IN PERFUSION TECHNOLOGY-IV SEMESTER

JULY 2025

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 (Answer any TWO):

2 X 10 = 20

1. Hypothermia and its uses in cardiac surgery.
2. What is normal arterial blood gas report? How to react with abnormalities inside it?
3. Describe the conduct and monitoring of CPB. What is venting and mention different methods of venting?

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Compare bubble and membrane oxygenator.
5. How to initiate bypass safely?
6. Write an essay on accidents during CPB.
7. What is fitter? Where and why to incorporate it in bypass circuit?
8. Draw extracorporeal circuit and label it.
9. What is colloid osmotic pressure? How it is calculated on CPB? What are the effects of low COP on CPB?

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Enumerate **three** antiplatelet drugs.
11. How to assess your priming volume?
12. Draw the normal ECG trace.
13. What is ischemic period?
14. Name **three** neuroprotective drugs during deep hypothermic circulatory arrest.
15. Management of mechanical and electrical failure during CPB.

B.S.C. IN PERFUSION TECHNOLOGY -VI SEMESTER

JULY 2025

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 (Answer any TWO):

2 X 10 = 20

1. Define ischemic heart disease. Discuss surgical management.
2. Define anaemia and management during CPB. What are lactate levels and their clinical interpretation? (5+5)
3. Discuss the methods to preserve kidney function during CPB. What is ARF and its management?

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Define the management of pregnant patients on CPB. What should be the fetal heart rate during CPB?
5. Quote special techniques used in neonatal CPB management.
6. What are the considerations in patients with preoperative lung diseases?
7. Discuss the myocardial protection in pediatric patients.
8. Explain the CNS complications due to CPB, mention some reasons.
9. What is pulmonary edema and its management on CPB.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Management of high blood glucose on CPB.
11. Illustrate the selection of oxygenators in obese patients. What is DO₂?
12. Define cardiomyopathy.
13. Classify congenital heart diseases in brief.
14. Classify aortic aneurysms with diagrams.
15. Interpretation of PFT and its applications.

B.S.C. IN NEUROSCIENCE TECHNOLOGY -IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

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 the principles of sensory nerve conduction study.
2. Describe the methodology for repetitive nerve stimulation.
3. How to elicit the F waves?

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. How to perform Median nerve motor conduction?
5. How to perform Ulnar nerve sensory conduction study?
6. Briefly describe method to elicit blink reflex.
7. What are the differences between H reflex and F response?
8. Sensory nerve conduction study of medial plantar nerve.
9. How to perform femoral nerve motor conduction study?

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Compound muscle action potential.
11. Sensory nerve action potential.
12. Anodal block.
13. How does the age affect nerve conduction study results?
14. Antidromic sensory conduction study.
15. Phrenic nerve conduction study.

B.S.C. IN NEUROSCIENCE TECHNOLOGY -VI SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

**APPLIED TECHNOLOGY-VII ELECTROMYOGRAPHY (EMG)
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. Discuss the electromyographic changes in neurogenic diseases.
2. Discuss role of auditory evoked potentials in central nervous system diseases.
3. Discuss the intraoperative monitoring using visual evoked potentials.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Discuss the utility of vestibular evoked myogenic potentials.
5. Intraoperative monitoring using nerve conduction.
6. Briefly discuss the surface recording of electromyography in movement disorders.
7. Briefly discuss the utility of quantitative electromyography.
8. Briefly discuss the evaluation of EMG interference pattern.
9. Jitter analysis.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. EMG findings in myopathy.
11. EMG findings in motor neuron disease.
12. Fiber density in single fiber EMG.
13. Visual evoked potentials in MOG related disease.
14. Tremor recording.
15. Motor unit recruitment.

**SECOND SEMESTER – BACHELOR OF PUBLIC HEALTH
BACHELOR OF PUBLIC HEALTH (HONS)
DEGREE EXAMINATION – JULY 2025**

Time: 3 Hours

Max. Marks: 80

FUNDAMENTALS OF ENVIRONMENTAL STUDIES

Q.P. Code: 1856

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 regarding different spheres in nature
2. Explain in detail water cycle with a diagram
3. Define biodiversity. Write in detail about **two** types of biodiversity conservation.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Write a note on scope of environmental studies.
5. Write a note on deforestation.
6. Write the differences between renewable and non-renewable resources.
7. Explain about 3 R's in environment.
8. Write in brief about the human rights related to environment.
9. Write a note on ozone layer depletion.
10. Write short note on acid rain.
11. Write a note on vermi composting.
12. What is hydroelectric power? Write in brief about its advantages and disadvantages.
13. Write a note on producers consumers and decomposers with examples.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. List the indicators of quality of ecosystem.
15. What are keystone species?
16. Give any **three** endangered animals or birds in India.
17. Enumerate the stages in primary treatment of sewage.
18. List the effects of soil pollution.
19. Enumerate specific causes for marine pollution.

**FOURTH SEMESTER – BACHELOR OF PUBLIC HEALTH
BACHELOR OF PUBLIC HEALTH (HONS)
DEGREE EXAMINATION – JULY 2025**

Time: 3 Hours

Max. Marks: 80

BASICS OF HEALTH INFORMATION SYSTEM AND HEALTH ECONOMICS

Q.P. Code:1863

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 Health economics. Write the concepts and scope of health economics
2. Explain in detail DIKW with a neat diagram.
3. What is law of supply? Explain supply curve with a diagram. What are the exceptions and limitations of law of supply?

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. What is cost utility analysis?
5. What is law of demand? Write a note on limitations of law of demand.
6. What is macroeconomics? Write a note on gross national income.
7. Write in brief about GDP.
8. Explain in brief about record linkage.
9. Discuss the reasons for market failure in healthcare.
10. Write the steps for health economic evaluation.
11. Explain uses of HIS in public health.
12. What is the role of internet in public health informatics?
13. How confidentiality of patient records is maintained?

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. Define data. Write types of data.
15. Define Public Health Surveillance.
16. Mention differences between privacy and confidentiality.
17. Write any **three** advantages of census.
18. What is APL and BPL?
19. What is an urgent cost and postponable cost?

**SIXTH SEMESTER – BACHELOR OF PUBLIC HEALTH
BACHELOR OF PUBLIC HEALTH (HONS)
DEGREE EXAMINATION – JULY 2025**

Time: 3 Hours

Max. Marks: 80

**PUBLIC LEADERSHIP AND MANAGING HEALTH ORGANIZATION
QUALITY AND SAFETY IN HEALTHCARE**

Q.P. Code:1869

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 the power orientation leadership style.
2. Explain in detail universal precautions.
3. Write in detail about Indian Public Health Standards for subcentres.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Write a short essay on Systems thinking.
5. Explain steps in planning.
6. Write a note on McCLELLAND's needs theories.
7. Why hand hygiene is important? Explains methods of hand hygiene.
8. What are the benefits of NABL?
9. Write the job responsibilities of health worker female working at primary health centre.
10. Write the staffing pattern of type A and Type B PHC as mentioned by IPHS.
11. Write a note on managerial grid.
12. What is scientific management? What is its contribution to the evolution of management?
13. Write a short essay on Process cognitive theory.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. Enumerate any **three** principles of leadership.
15. Write any **three** benefits of good healthcare management.
16. Define: a) Management b) Administration c) Organization
17. Write any **three** functions of ASHA worker working in rural areas.
18. What is FRU? List any **two** key services provided here.
19. What is NABH? Write any **two** benefits.

B.SC. RENAL DIALYSIS TECHNOLOGY-IV SEMESTER

JULY 2025

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 (Answer any TWO):

2 X 10 = 20

1. Describe diuretics used in kidney disease patients.
2. Explain the composition of dialysate used in hemodialysis.
3. Discuss different types of erythropoietin medication given to CKD patients.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Write the role of chemicals used for dialyser reprocessing.
5. Describe vitamin D analogues given to CKD patients.
6. List the contraindications for antihypertensive medications.
7. Discuss low molecular weight heparin used in hemodialysis.
8. Explain osmotic agents used in PD fluids.
9. Write a note on renal drug dose modification in Covid 19.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Define half-life.
11. List the indications for administration of hypertonic solution during dialysis.
12. List **three** dialysable drugs.
13. Write the complications associated with the heparin administration.
14. What are the disadvantages of using formalin for dialyser reprocessing?
15. Name **three** loop diuretics.

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B.SC. RENAL DIALYSIS TECHNOLOGY-VI SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

PAPER-II

Q.P. Code:1124/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. Discuss infection prevention protocols related to CSSD equipment and processes.
2. Explain the functioning, maintenance and troubleshooting of infusion and syringe pumps.
3. Discuss the sterilization methods: moist heat, dry heat, ETO gas and plasma sterilization in detail.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. List types of disinfectants used in CSSD.
5. List materials used for packing and wrapping.
6. Explain troubleshooting of defibrillator.
7. Explain the process of date stamping.
8. Define CSSD and its role in hospitals.
9. Write steps in preparing a sterilization pack.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Name **two** types of sterilization.
11. Define disinfection.
12. Define infusion pump.
13. Write **one** reason for wrapping instruments.
14. Name **two** types of monitors.
15. What is high-risk instrument?

B.SC. IN OPTOMETRY-IV SEMESTER – JULY 2025

Time: 3 Hours

Max. Marks: 60

OCULAR PHARMACOLOGY, 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. Define glaucoma. Explain in detail the anti-glaucoma medications, their mechanism of action, dosage, indications and contraindications.
2. How to take history in a patient with defective vision? How to work up a case of cataract?
3. What are fat soluble vitamins? Write a note on the structure & function of any **three** of them.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Explain in detail about ocular antimicrobials.
5. Explain in detail about antiviral agents used in eye.
6. Discuss Anti VEGF's role in ocular disease.
7. Discuss the role of steroids in ophthalmology
8. Describe the procedure of lacrimal sac syringing and interpretation of the test.
9. Discuss Vitamin A deficiency manifestations in eye.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Mention indication for fluorescein staining.
11. Name any **three** mydriatics used in eye.
12. Discuss VEP.
13. Name any **three** immunosuppressants used in eye.
14. Discuss anti-oxidants in eye.
15. Discuss role of rhodopsin in vision.

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**B.SC. IN OPTOMETRY-VI SEMESTER
JULY 2025**

Time: 3 Hours

Max. Marks: 60

OCCUPATIONAL OPTOMETRY, RESEARCH METHODOLOGY AND STATISTICS

Q.P. Code:0137

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 classification and management of ocular injuries.
2. Explain code of ethics, laws governing optometric practice in India.
3. Differentiate nominal and ordinal scales of measurements with example. Explain stratified random sampling with example. State its advantages over simple random sampling.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Discuss various protective equipments in ophthalmology field.
5. Define occupational health and explain occupational safety.
6. Write short note on visual requirements, standards for different jobs.
7. Write short note on cross sectional studies.
8. Differentiate reliability and validity with examples.
9. Enumerate the uses of descriptive epidemiology.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Discuss target diseases under vision 2020 program.
11. What is school eye screening program?
12. Define sample size.
13. What is standard deviation and mention its importance?
14. What is confidence interval?
15. What is paired and unpaired t test?

**SECOND SEMESTER - B.Sc. NUTRITION AND DIETETICS
DEGREE EXAMINATION – JULY 2025**

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.

Question Number

Marks

LONG ESSAY QUESTIONS (Answer any TWO):

2 X 10 = 20

1. Describe the structure of DNA in detail with a labelled diagram. Explain the Watson and Crick model.
2. Explain the digestion, absorption and metabolism of proteins.
3. Discuss the distribution of body fluids and regulation of electrolytes.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Define nucleic acids. Differentiate between DNA and RNA.
5. What is the urea cycle? Explain with a neat diagram.
6. Write a short note on transamination and deamination.
7. Describe the function of mRNA, tRNA and rRNA.
8. List the fat-soluble vitamins and mention **one** function for each.
9. Describe the deficiency symptoms of Vitamin A and D.
10. Define minerals. Write the functions of calcium and iron.
11. What is transcription? Describe the basic steps involved.
12. Write a note on overhydration and dehydration.
13. Explain the function of kidneys in maintaining acid-base balance.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. Write a short note on genetic code.
15. What is uremia?
16. Mention **three** deficiency diseases of Vitamin C.
17. Enlist the components/distribution of body water.
18. Write the significance of liver function tests (LFTs).
19. Enlist the deficiency disorders of water soluble vitamins.

FOURTH SEMESTER - B.Sc. NUTRITION AND DIETETICS
DEGREE EXAMINATION – JULY 2025

Time: 3 Hours

Max. Marks: 80

DIET AND NUTRITION COUNSELING

Q.P. Code: 1126

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 diet counselling. Explain significance, process and types of diet counselling.
2. What is attention? Explain types of attention.
3. Define psychology. Explain its nature and scope.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. What are the different channels of nutrition communication?
5. Explain rapport building.
6. Explain different types of memory.
7. Explain in brief about attending and listening skills.
8. Explain in brief the nature of personality.
9. Explain in brief emotional expression.
10. What are the sick day guidelines for a diabetic?
11. What are the advantages and limitations of mass media?
12. Explain factors influencing personality.
13. Explain in brief principle of perceptual origin.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. Which of the traditional media methods commonly used for nutrition education?
15. What are the steps in effective counseling using GALIDRAA technique?
16. What are the goals of diet counseling for diabetics?
17. What are the symptoms of diabetes? 3Ps
18. Define brainstorming.
19. Define self-disclosure.

SIXTH SEMESTER - B.Sc. NUTRITION AND DIETETICS

DEGREE EXAMINATION – JULY 2025

Time: 3 Hours

Max. Marks: 80

BAKERY AND CONFECTIONARY

Q.P. Code: 1144

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 structure and composition of the wheat kernel.
2. Enumerate different chemical leavening agents and explain its role in baking.
3. Explain the role and nutritional contribution of milk and milk products in baking.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. What is the role of baking soda and baking powder in baking?
5. Write a note on steps and by products of wheat milling.
6. What is the difference between yeast and starter? How is it obtained?
7. How to preserve and store eggs?
8. What is the composition of different flours used in bakery?
9. Write a note on flavorings used in bakery.
10. Explain the procedures for bread making.
11. Write different types of cakes and preparation of any **one** type of cakes.
12. Explain the preparation of vegetable sandwiches and write its nutritive values.
13. Write a note on hard boiled candies.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. What is invert sugar?
15. How best to store shortening?
16. What is the role of bread improvers?
17. Write a recipe for gluten free and vegan cake.
18. How to prepare nutritious bars?
19. How to differentiate between brownie and a cake?

B.SC. IN CRITICAL CARE TECHNOLOGY-IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

BASICS OF INTENSIVE CARE TECHNOLOGY PART-II

Q.P. Code:1129

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 pathophysiology, etiology, clinical presentation and ventilator management of COPD.
2. Discuss pathophysiology, etiology, clinical presentation and ventilator management of bronchial asthma.
3. Discuss causes, clinical presentation and management of pneumothorax.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Define shock and mention various type of shock.
5. Classify various type of respiratory failure with examples.
6. Mention various rescue measures for treatment of hypoxia in ARDS.
7. Discuss various modes of treatment for pulmonary embolism.
8. Discuss in brief opportunistic infections.
9. Discuss various causes of pulmonary edema.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Organisms causing community acquired pneumonia.
11. Causes of secondary pulmonary hypertension.
12. Write any **four** symptoms of tuberculosis.
13. Atelectasis.
14. Mention **four** causes of cardiogenic shock.
15. Classify bronchodilators.

B.SC. IN CRITICAL CARE TECHNOLOGY-VI SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

CSSD PROCEDURES AND MEDICAL ETHICS

Q.P. Code:1150

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 brief steps involved in cleaning and sterilization of procedure tray.
2. Define autoclaving and mention various equipment/instruments sterilized by autoclaving.
3. Discuss euthanasia and its legal aspects.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Discuss four pillars of medical ethics.
5. Discuss in brief Ethylene oxide sterilization.
6. Define brain stem death and write an essay on apnoea test.
7. Explain the procedure for disposal of sharp bio medical waste.
8. Mention instruments present in central venous and catheterization tray with their uses.
9. Discuss fiduciary responsibility.

SHORT ANSWER QUESTIONS: (Answer any FIVE)

5 X 3 = 15

10. Bio medical waste to be disposed in yellow colour bin.
11. What are the concepts of basic surgical pack?
12. Instruments include in oral hygiene care tray.
13. Mention various types of medical records.
14. Significance of caloric test.
15. What is a medicolegal case (MLC)?

B.SC. IN ENDOSCOPY TECHNOLOGY-IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

PHARMACOLOGY RELATED TO ENDOSCOPIC TECHNOLOGY

Q.P. Code:1132

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 principles and pharmacology of sedation in pediatric endoscopy.
2. Explain the drugs used for bowel preparation before colonoscopy, including their doses and side effects.
3. Discuss the drugs used to control nausea and vomiting in patients undergoing endoscopy.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Explain the role of antifoaming agents in endoscopy.
5. Write a short note on opioid analgesics used in endoscopy.
6. Describe the pharmacology of metoclopramide and its uses.
7. Explain the pharmacological management of bleeding varices during endoscopy.
8. Write a note on the use of adrenaline injection in endoscopic hemostasis.
9. Discuss the use of glucagon in endoscopy.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Name **two** laxatives used for bowel preparation.
11. What is the antidote for opioid overdose?
12. What is the mechanism of action of lactulose?
13. Name **two** drugs used for conscious sedation in adult endoscopy.
14. What is the antidote for benzodiazepine overdose?
15. List **two** common side effects of midazolam.

**SECOND SEMESTER – BACHELOR IN HOSPITAL ADMINISTRATION
DEGREE EXAMINATION – JULY 2025**

Time: 3 Hours

Max. Marks: 80

MEDICAL RECORDS MANAGEMENT

Q.P. Code:7026

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 hospital records and explain in detail the types of hospital records.
2. Explain hospital utilization related hospital statistics in detail.
3. Write a note on medical records.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Give an account of workflow of MRD department.
5. Write a note on problems faced while maintaining hospital registers.
6. What is medical records audit?
7. Enumerate role of hospital record manager.
8. Write a note on Electronic Health Records (EHR).
9. Role of medical records in healthcare.
10. Difference between traditional health records and electronic health records.
11. Importance of maintaining health records in hospital.
12. Discuss software's used in hospital electronic record system.
13. What are legal, ethical issues related to medical records?

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. Write a note on indexing and filling of records.
15. What are the recent trends in record maintenance?
16. Importance of confidentiality in medical records with examples.
17. Mention any **three** types of indexing methods used in medical records.
18. Difference between primary data and secondary data in medical records.
19. Define medical forms, medical registers and medical reports.

B.SC. IN RADIATION THERAPY-IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

RADIATION THERAPY PHYSICS

Q.P. Code:1156

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 about the dose calculation parameters used in the calculation of MU.
2. What is PDD and TMR? Explain in detail relationship between TMR and PDD.
3. Explain in detail about the wedge filters, wedge systems, wedge angle and wedge transmission factors with neat diagram.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Briefly explain the Clarkson's method for irregular field calculation.
5. Explain shielding block and custom blocks.
6. A 4MV linear accelerator is calibrated to give 1cGy per MU in water phantom at a reference depth of maximum dose at 1cm. 100cm SSD and 10X10 sq.cm field size. Determine MU to deliver 200 cGy to patient at 100 cm SSD, 10 cm depth of 15X15 sq.cm field size. Given $S_c(15X15) = 1.020$, $S_p(15X15) = 1.010$, $PDD(10,15X15,100) = 65.1\%$
7. Explain TMR and its influencing factors.
8. Explain electron depth dose curves and depth dose distribution for different electron energies.
9. Explain arc technique of linear accelerator.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. What is mean energy in electron?
11. What is inelastic collision?
12. Write any **three** phantom materials.
13. Define tissue phantom ratio.
14. Define penumbra.
15. Define SSD and SAD.

B.SC. EMERGENCY MEDICINE -IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

BASICS OF EMERGENCY MEDICINE & EMERGENCY MEDICAL SERVICES –II

Q.P. Code: 1147

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 chain of survival in basic life support.
2. Discuss in brief special consideration during resuscitation of a patient with drowning, hanging and pregnancy.
3. Discuss in brief splint immobilization of a fracture site.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Enumerate few natural disaster and probable injuries sustained.
5. Short essay on Inj adrenaline.
6. Discuss physiology of cardiogenic shock and mention causes of cardiogenic shock.
7. Discuss bio-medical waste disposed in red and yellow colour coding.
8. Discuss in brief triage in emergency care area.
9. Discuss in brief primary survey in a trauma patient.

SHORT ANSWER QUESTIONS (Answer any FIVE):

3 X 5 = 15

10. Difference between hemorrhagic and septic shock.
11. Define massive blood transfusion.
12. Mention **three** aspects to be taken care during rehabilitation after a disaster.
13. Mention crystalloids used in resuscitation of a trauma patient.
14. Difference between cardiogenic and septic shock.
15. What is cervical spine immobilisation?

B.SC. EMERGENCY MEDICINE - VI SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

CSSD PROCEDURES

Q.P. Code: 1162

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 precautions to be taken while using ultrasound machine to protect the ultrasound machine and discuss key points involved in its routine maintenance.
2. Discuss precautions to be taken while using defibrillator and discuss key points involved in its routine maintenance.
3. Discuss in detail autoclaving.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Write a short essay on autonomy.
5. Write a short essay on confidentiality.
6. Write a short essay on Euthanasia.
7. Discuss steps to be followed after needle stick injury.
8. Discuss the process of sterilizing glass and plastic items.
9. Discuss the complete process of segregation and disposal of sharp biomedical waste.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Write a short note on caloric reflex test.
11. Mention various types of medical records
12. Mention **four** pillars of medical ethics
13. Write a short note on pupillary reflex.
14. Mention instruments present in oral hygiene care tray.
15. Define brain death.

B.SC. IN RESPIRATORY CARE TECHNOLOGY-IV SEMESTER
JULY 2025

Time: 3 Hours

Max. Marks: 60

**PHYSICAL EXAMINATION AND HEALTH ASSESSMENT IN
CARDIAC DISEASES**

Q.P. Code:1159

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 heart failure. Describe pathophysiology, causes, clinical features, investigation and management of Heart Failure
2. Discuss pathophysiology, causes, clinical features, investigation and management of Pulmonary edema
3. Discuss pathophysiology, causes, clinical features, investigation and management of pulmonary artery hypertension.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Describe the causes, ECG findings and treatment of atrial fibrillation.
5. Discuss investigation and management of Deep Vein Thrombosis.
6. Describe NYHA classification.
7. List causes and treatment of hypertension.
8. Discuss causes, diagnosis and management of pericardial effusion.
9. Discuss difference between stable vs unstable angina.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. List **three** signs of heart failure.
11. Significance of pleural effusion in clinical practice.
12. Name types of congenital heart diseases.
13. Name **three** beta blockers.
14. Name **three** thrombolytic agents.
15. List **three** emergency drugs used in myocardial infarction.

B.SC. MLTC, RADIOGRAPHY, ANAESTHESIA, PERFUSION, CARDIAC CARE, NEUROSCIENCE, RENAL DIALYSIS AND OPTOMETRY– II SEMESTER – JULY 2025

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
1. Enumerate the tests for physical and chemical examination of urine. Discuss the tests for detection of proteins in urine.	(4+6)
2. Enumerate the hemolytic anaemias. Add a note on indications, method and interpretation of Coomb's test.	(5+5)
SHORT ESSAY QUESTIONS (Answer any TWO):	2 X 5 = 10
3. Describe the preparation and staining procedure of BMA smears.	
4. Discuss the microscopic examination of urine with relevant diagrams.	
5. Describe the procedure and principle of Bazedine test.	
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 2 = 10
6. List four sites of bone marrow aspiration.	
7. Mention uses of buffy coat smears.	
8. Mention reagent used in sickling test. Write the principle of the test.	
9. List four preservatives of urine.	
10. Write the gross examination of semen sample.	
11. What is the principle of Rothera's test?	

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

Question Number	Marks
LONG ESSAY QUESTIONS (Answer any ONE):	1 X 10 = 10
1. What is culture media? Classify the types of culture media with examples.	(2+8)
2. List six types of antigen and antibody reaction. What is the principle of ELISA? Describe direct ELISA.	(3+3+4)
SHORT ESSAY QUESTIONS (Answer any TWO):	2 X 5 = 10
3. Explain salient feature of IgA with diagram.	
4. Write a note on classical pathway of complement activation.	
5. Describe the role of barriers in innate immunity.	
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 2 = 10
6. List four factors which influence immunogenicity	
7. Name four methods of cultivation of bacteria	
8. Classify Immunoglobulins	
9. List any two applications of agglutination reaction	
10. Write any two differences between innate and acquired immunity	
11. Name colour coding bins used for biomedical waste disposal. How biomedical waste is segregated?	

B.Sc. IN MEDICAL LABORATORY TECHNOLOGY

IV SEMESTER – JULY 2025

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
1. Discuss on classification of viruses with examples	
2. Classify <i>Arboviruses</i> . Describe laboratory diagnosis of arboviruses	(5+5)
3. Describe the morphology, pathogenesis and clinical features of Herpes simplex virus.	(3+4+3)
SHORT ESSAY QUESTIONS (Answer any FIVE):	5 X 5 = 25
4. Explain viral replication	
5. Explain cultivation of viruses by animal inoculation	
6. Explain the plating of cells in tissue culture media	
7. Explain the mode of transmission and laboratory diagnosis of infection caused by Hepatitis A virus	
8. Describe the morphology of Human Immunodeficiency Virus	
9. Explain the principle of carbon dioxide incubator.	
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 3 = 15
10. Brief note on immunoprophylaxis of viral diseases	
11. Enlist the diseases caused by <i>Poxvirus</i>	
12. Mention routes of transmission of HIV	
13. Brief note on primary cell cultures with examples	
14. Explain preservation of immortalised cell lines in liquid nitrogen	
15. Draw a neat labelled diagram of Bacteriophage.	

B.Sc. IN MEDICAL LABORATORY TECHNOLOGY

VI SEMESTER – JULY 2025

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. Enumerate and discuss the transfusion reactions. Mention the procedure followed for post transfusion reaction.	(3+5+2)
2. Discuss the Basic concepts of Immunohistochemistry with examples	
3. Discuss the principle, procedure and preparation of reagents for PAP technique	
SHORT ESSAY QUESTIONS (Answer any FIVE):	5 X 5 = 25
4. Discuss the Anticoagulants used in the blood bank	
5. Discuss the methods of sex chromatin identification	
6. Discuss the types of fluorescence with applications of Immunofluorescence	
7. Discuss in detail the waste management of non-infectious and infectious materials of blood bank.	
8. Discuss types of autologous transfusion with criteria for predeposit autologous donation	
9. Discuss the banding techniques for characterization of human chromosomes.	
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 3 = 15
10. Mention the weaker variants of Rh system	
11. Mention the types of Blood bags used in blood bank	
12. What are monoclonal antibodies? Give one example.	
13. Give three examples of chromosomal aberrations in cancer	
14. Enumerate the steps taken to retain the blood donors	
15. Enumerate diseases transmitted by blood.	

B.SC. IN RADIOGRAPHY-IV SEMESTER

JULY 2025

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 (Answer any TWO):	2 X 10 = 20
1. Explain in detail radiation quantities and units of radiation	
2. Explain in detail stochastic and deterministic effects	
3. Explain in detail construction and working principle of GM counters	
SHORT ESSAY QUESTIONS (Answer any FIVE):	5 X 5 = 25
4. Write a note on occupational exposure limits	
5. Write a note on radiation technical factors consideration during pediatric radiography	
6. Write a note on film badge	
7. Write a note on work load, use factor and occupancy factor	
8. Write a note on Atomic energy regulatory board	
9. Write a note on QA test for contact between film and intensifying screen	
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 3 = 15
10. Write a short note on radiation signage's	
11. Write a short note on factors affecting calculation of primary and secondary shielding	
12. Write a short note on lethal dose 50	
13. Write a short note on linearity of tube current mA and timer	
14. Write a short note on cell radiosensitivity.	
15. Write a short note on ALARA.	

B.S.C. IN ANESTHESIA TECHNOLOGY -IV SEMESTER

JULY 2025

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. Discuss preparation of OT for 36 year old male posted for both bone forearm fracture. Enumerate complication of the Block.
2. Write in detail about blood transfusion. List complication of blood transfusion.
3. Enumerate content of sterile tray for ankle block. Write a note on bupricaine hydrochloride.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Enumerate adjuvants used in regional anaesthesia. Write in detail about **two** drugs.
5. Write in detail about Wrist block
6. Discuss Fluid management under regional Anaesthesia
7. Discuss minimum mandatory monitoring during Anaesthesia
8. Write note on peripheral nerve stimulator
9. Basic life support

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Note oxygen face mask.
11. Discuss local anaesthesia toxicity.
12. Write **three** indications for ankle block.
13. Write a note on sterilization of anaesthesia equipment.
14. List various lower limit blocks.
15. List fluid therapy in anaesthesia.

B.SC. IN ANESTHESIA TECHNOLOGY -VI SEMESTER JULY 2025

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. Describe the physiological and anatomical difference between adult and paediatric.
2. Discuss various positioning during anaesthesia. List its complication.
3. Discuss arrangement of OT for 3 year old child for laparotomy under general and caudal anaesthesia.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Describe venturi mask. Write its indication.
5. Explain USG in anaesthesia.
6. Discuss various monitoring in ICU.
7. Discuss occupational hazard in the operating room.
8. Discuss preparation for blood transfusion and its complication.
9. Components of difficult airway trolley.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Discuss collection and storage for ABG (Arterial blood gas).
11. Explain how to maintain airway patency in unconscious patient?
12. List drugs used for sedation in ICU (Intensive Care Unit).
13. Write a note on preparation of Epidural set.
14. List cardiac drugs, preparation and its use.
15. List complication during anaesthesia.

B.SC. IN CARDIAC CARE TECHNOLOGY -IV SEMESTER
JULY 2025

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 (Answer any TWO):

2 X 10 = 20

1. Right Heart catheterization – indications, contraindications, materials used, procedure and complications
2. List indications for Balloon mitral valvuloplasty. Describe the procedure, materials used and complications.
3. Device closure of VSD – procedure, indications and materials used for VSD device closure.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Preparation of patient for cath procedures and post procedure care
5. Radiation hazards
6. Radiographic contrast agents
7. Materials used in peripheral angioplasty
8. Damped & ventriculized pressure tacing.
9. Permanent pacemaker implantation – procedure and its complications.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Pulmonary vascular resistance
11. CD recording – procedure & storage
12. Mention indications for permanent pacemaker implantation
13. Complications of coronary angioplasty
14. Precautions to protect a pregnant woman undergoing a procedure in cathlab
15. Role of Nuclear cardiology.

B.SC. IN PERFUSION TECHNOLOGY -IV SEMESTER

JULY 2025

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 (Answer any TWO):

2 X 10 = 20

1. How to prepare the patient before separation from CPB?
2. What are the non cardioplegic myocardial protection strategies?
3. Define the indications of VA and VV ECMO. How management of VA and VVECMO is different?

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Advantages of pulsatile perfusion
5. Write an essay on pressure and flow monitoring during antegrade and retrograde cardioplegia delivery.
6. Write the short note on venting and retrograde cardioplegia delivery during minimally invasive cardiac surgery
7. Merits and demerits of endoluminal aortic cross clamping
8. Write an essay on management of ECMO.
9. Explain adequacy of perfusion. How is lactate levels interpreted during CPB?

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Principles of venous drainage
11. Compare metal tip arterial cannula and dispersion cannula
12. Complications of IABP
13. Heparin alternatives
14. Helium
15. Write **two** methods of occlusion setting in Heart lung machine.

B.SC. IN NEUROSCIENCE TECHNOLOGY -IV SEMESTER

JULY 2025

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 the methodology for recording auditory evoked potentials	
2. Describe how to record median nerve somatosensory evoked potentials	
3. Briefly describe the spontaneous activities in needle electromyography	
SHORT ESSAY QUESTIONS (Answer any FIVE):	5 X 5 = 25
4. Electrodes for needle electromyography.	
5. Fasciculation potentials in electromyography.	
6. Briefly describe the myotonic discharges.	
7. Briefly describe the sympathetic skin response.	
8. What are dermatomal somatosensory evoked potentials?	
9. Endplate potentials	
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 3 = 15
10. Myokymic discharges.	
11. Complex repetitive discharges.	
12. Motor unit potential.	
13. Concentric EMG needle electrode.	
14. Myokymic discharges.	
15. P 100	

**SECOND SEMESTER – BACHELOR OF PUBLIC HEALTH
BACHELOR OF PUBLIC HEALTH (HONS)
DEGREE EXAMINATION – JULY 2025**

Time: 3 Hours

Max. Marks: 80

INTRODUCTION TO COMMUNICABLE AND NON-COMMUNICABLE DISEASES

Q.P. Code:1857

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 epidemiology, clinical features, treatment and prevention of diarrheal diseases.
2. Describe blindness and visual impairment as per WHO. Discuss briefly vision 2020 - the right to sight at various level in India.
3. List vector borne diseases. Write the signs and symptoms of Malaria. Add a note on antilarval measures.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Discuss briefly life style modifications measures in coronary heart diseases
5. Discuss infection control measures for Covid 19.
6. Discuss briefly prevention and control of dengue fever in India
7. Describe briefly prevention of road traffic accidents in India
8. Discuss briefly how overweight and obesity are measured?
9. Write in detail about clinical features of pertussis
10. Discuss briefly about strategies for polio eradication in India
11. Write a note on DOTS therapy
12. Outline the preventive and control measures for cholera epidemic
13. What are the risk factors and clinical features of diabetes mellitus?

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. Mention **two** advantages and **two** adverse effects of BCG vaccine.
15. Define latent period with a suitable example
16. Write the rules of halves for hypertension
17. Enumerate any **six** communicable diseases
18. Write causative organism for the following:
a. Typhoid b. Amoebic dysentery c. Filariasis
19. Define Zoonotic diseases. Write any **two** examples

**FOURTH SEMESTER – BACHELOR OF PUBLIC HEALTH
BACHELOR OF PUBLIC HEALTH (HONS)
DEGREE EXAMINATION – JULY 2025**

Time: 3 Hours

Max. Marks: 80

DISASTER AND EMERGENCY MANAGEMENT

Q.P. Code: 1864

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 hazard assessment and write in detail regarding different approaches of hazard assessment.
2. Explain the components of mitigation and write about the guiding principles of mitigation
3. Define disasters. Write in detail about the problems common to all disasters

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Write the principles of triage
5. List the different communicable diseases present during disaster. Write a note on control measures of communicable diseases during a disaster.
6. Define emergency. Write a note on emergency planning.
7. What is risk and hazard? Write any **five** differences between hazards and disaster.
8. Why is food and nutrition an important public health aspect during disaster? What steps should be taken to overcome the menace caused due to food during disasters.
9. Write in brief about principles of disaster management
10. Write a note on accommodation during disaster
11. Write a note on obstacles in disaster preparedness
12. Write in brief about risk perception
13. What is recovery? Explain with definition. Write in brief regarding the **four** elements of recovery

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. Name any **three** international organizations working for disasters
15. List any **three** disasters in history
16. Give any **three** reasons, why India is Vulnerable to disasters
17. Enlist any **three** personal protective measures during a cyclone
18. Write any **three** examples for natural disasters and man-made disaster
19. What is hazard mapping? Write any **two** objectives of hazard mapping.

B.SC. RENAL DIALYSIS TECHNOLOGY-IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

APPLIED DIALYSIS TECHNOLOGY I

Q.P. Code:0121

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 haemodialysis adequacy
2. Explain peritoneal dialysis catheter insertion techniques
3. Outline the types of dialysers and membranes.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Discuss the mechanical complications of peritoneal dialysis.
5. Outline the principles of haemodialysis
6. Explain the complications associated with AV graft
7. Write a note on the haemodialysis machine self-test.
8. List the investigations done to diagnose anaemia.
9. Explain the standard PET test.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Write **three** indications for haemodialysis
11. Outline the criteria for withdrawal from chronic dialysis
12. Why AV fistula is the recommended vascular access for haemodialysis patients?
13. What is tight heparinisation in haemodialysis?
14. List the causes of infection in peritoneal dialysis
15. Outline AVF cannulation techniques.

B.SC. RENAL DIALYSIS TECHNOLOGY-VI SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

PAPER-III

Q.P. Code:1125/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. Describe complications of dialysis and emergency interventions.
2. Explain the principles and technique of aseptic interventions.
3. Describe the procedure for IJV HD catheter insertion and nursing responsibilities.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Write the procedure of femoral catheter care.
5. Describe the types of HD catheters.
6. Mention the components of ACLS.
7. Explain infection control in dialysis units.
8. Write about fluid management in dialysis.
9. Describe blood leakage management in dialysis.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Name **two** components of peritoneal dialysis.
11. What is INR monitoring?
12. Name **two** emergency drugs.
13. Full form of CVVHD.
14. **Two** symptoms of catheter malfunction.
15. Write **one** precaution in catheter insertion.

B.SC. IN OPTOMETRY-IV SEMESTER – JULY 2025

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. Define keratometry. Explain instrumentation theory & clinical uses of the same.
2. Explain paediatric visual acuity testing
3. Define indirect ophthalmoscope. Explain instrumentation theory of binocular indirect ophthalmoscope.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Explain colour vision testing in adults & paediatric population
5. Explain static & dynamic retinoscopy
6. Discuss the procedure and clinical indications of VEP (Visual Evoked Potential)
7. Explain stages of FFA
8. Write short note on OCT
9. Explain streak retinoscopy and pin hole test

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Describe critical angle.
11. Describe concave and convex mirrors.
12. Describe auto refractometer.
13. Discuss various tinted lenses.
14. Discuss grinding machines & materials in optometry.
15. Discuss clinical uses of Jackson's Cross cylinder.

**SECOND SEMESTER - B.Sc. NUTRITION AND DIETETICS
DEGREE EXAMINATION – JULY 2025**

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.

Question Number	Marks
LONG ESSAY QUESTIONS (Answer any TWO):	2 X 10 = 20
1. Plan a day diet for pregnant woman in 3 rd trimester. Write justification for the planned diet	
2. Explain in detail the nutritional requirements during infancy	
3. What are the advantages of breastfeeding an infant and health benefit of breast feeding to a mother?	
SHORT ESSAY QUESTIONS (Answer any NINE):	9 X 5 = 45
4. Explain physiological changes during pregnancy.	
5. Write the reasons of increase energy and protein requirement during pregnancy	
6. Explain lactation and write the RDA of all the nutrients during lactation.	
7. Explain the role of vitamins and minerals in pregnancy	
8. Write a note on complimentary feeding	
9. Explain the nutritional benefits of human milk compared to cow's milk	
10. Explain Mid-day meal programme for school children	
11. Explain physiological changes during lactation	
12. Write difference between kwashiorkor and marasmus	
13. Explain how to manage picky eating problem in children	
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 3 = 15
14. Write any two effects of nutritional status on pregnancy outcome.	
15. Why folic acid requirement is increased during pregnancy?	
16. Enumerate the causes of iron deficiency anaemia in pregnancy	
17. What is colostrum? Write two benefits.	
18. What is RDA of iron and folic acid during pregnancy and lactation?	
19. What is PICA?	

**FOURTH SEMESTER - B.Sc. NUTRITION AND DIETETICS
DEGREE EXAMINATION – JULY 2025**

Time: 3 Hours

Max. Marks: 80

FUNDAMENTALS OF FOOD MICROBIOLOGY

Q.P. Code: 1127

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 food microbiology. Add a detailed note on general morphology of bacteria.
2. Discuss infection source, clinical features, pathogenesis, diagnosis and prevention of salmonellosis.
3. Discuss in detail spoilage and preservation techniques of egg and poultry.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Define fermentation. Add a short note on role of microorganism in fermentation.
5. Classify microorganism on the basis of temperature and oxygen requirements.
6. Define batch culture. Add a short note on it.
7. Discuss the qualitative tests for bacteriological determination of water.
8. Explain the spoilage & preservation of cereal & its products.
9. Write a short note on intrinsic factors responsible for food spoilage.
10. Briefly explain the clinical features, source & prevention of listeriosis.
11. What is food borne toxic infections? Add a short note on cholera.
12. Write a note on shellfish poisoning.
13. Explain the preparation method & health benefits of fermented vegetable kimchi.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. What is light microscope?
15. Write **two** clinical features of scombroid food poisoning.
16. What are economically important fermented foods? Give examples.
17. Enlist the various mycotoxins.
18. What are the differences between food borne infections and food borne intoxications?
19. What is trichinosis?

**SIXTH SEMESTER - B.Sc. NUTRITION AND DIETETICS
DEGREE EXAMINATION – JULY 2025**

Time: 3 Hours

Max. Marks: 80

INSTITUTIONAL FOOD MANAGEMENT

Q.P. Code: 1145

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 principles of management in any food service establishment	
2. Explain the importance of personnel management in the food service industry and describe the steps involved in the selection of personnel	
3. Discuss cost concepts, behavior of costs and cost control in financial management	
SHORT ESSAY QUESTIONS (Answer any NINE):	9 X 5 = 45
4. Explain briefly personal hygiene.	
5. Explain safety training.	
6. Who is menu planner? What qualities are required in a menu planner?	
7. Discuss factors affecting the selection of equipment.	
8. Discuss the classification of catering equipment based on its size and weight.	
9. Explain the methods of controlling food costs in financial management.	
10. Discuss the role of leadership in institutional food management. How can different leadership styles impact the performance and morale of food service staff?	
11. Explain sensory quality and nutritional quality of food.	
12. Describe the characteristics of foods.	
13. Explain briefly the food production system and process.	
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 3 = 15
14. Mention qualities of an effective food service manager	
15. Explain briefly the functions of menu planning	
16. Comment on the care and maintenance of equipment	
17. Explain briefly techniques in writing a menu card	
18. Comment on methods of pricing.	
19. What is a performance appraisal?	

B.S.C. IN CRITICAL CARE TECHNOLOGY-IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

BASICS OF INTENSIVE CARE TECHNOLOGY PART-III

Q.P. Code:1130

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 GB Syndrome? Discuss the pathophysiology, clinical presentation and various modes of treatment of the GB syndrome.
2. Define Brain Death. Discuss procedure of brain death declaration.
3. What is stroke? Mention various types and discuss in brief management of hemorrhagic stroke

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Various cause of upper GI Bleed
5. Mention various causes of COMA
6. Discuss drugs used in treatment of Ischemic stroke
7. KDIGO classification in AKI
8. Mention various head injuries that can be caused by trauma
9. Discuss few conditions which can cause coagulopathy in ICU

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Various causes of Hypoglycemia in ICU.
11. Various causes of Pancreatitis.
12. Gastric lavage indications.
13. Mention drugs used in treatment of upper GI Bleed.
14. Indications of Enema.
15. Non - Absorbable antibiotics.

B.SC. IN CRITICAL CARE TECHNOLOGY-VI SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

PROCEDURES IN INTENSIVE CARE UNIT

Q.P. Code:1151

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 procedure of arterial catheterization and its maintenance.	
2. Explain basics of ultrasonography and explain four chamber view in 2D Echocardiography with diagram.	(4+6)
3. Discuss various types of continuous renal replacement therapy.	
SHORT ESSAY QUESTIONS (Answer any FIVE):	5 X 5 = 25
4. Write a short note on A lines and B lines in lung ultrasonography	
5. Write an essay on ICP monitoring	
6. Maintenance and care of Foley's catheter	
7. Discuss in brief routine maintenance of electrical defibrillator	
8. Discuss in brief various aspects to be monitored and taken care in a postoperative patient	
9. Explain various strategies to prevent bed sores	
SHORT ANSWER QUESTIONS: (Answer any FIVE)	5 X 3 = 15
10. What is gastric lavage?	
11. Mention endotracheal tube care in an intubated and mechanically ventilated patient	
12. Mention any three non-pharmacological strategies to reduce ICP	
13. Mention any three types of patient controlled analgesia	
14. Describe chambers seen in PLAX view	
15. Classify types of renal replacement therapy.	

B.S.C. IN ENDOSCOPY TECHNOLOGY -IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

BASICS IN ENDOSCOPY TECHNOLOGY

Q.P. Code:1133

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 classification of endoscopes. Compare rigid and flexible endoscopes with examples
2. Describe the steps in pre-procedure preparation of the endoscopy unit and instruments
3. Discuss the principles of infection control in endoscopy units

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Write a short note on air insufflation and irrigation systems in an endoscope
5. Explain the importance of patient consent and preparation before an endoscopic procedure
6. Explain the role and care of an electrosurgical unit used with an endoscope
7. Describe the uses of snares in endoscopic procedures
8. Explain the troubleshooting of common problems in an endoscopic system
9. Explain the steps to check the functionality of an endoscope before a procedure

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Name **two** diagnostic uses of endoscopy
11. What is the function of the biopsy channel?
12. Define high-level disinfection
13. Mention **two** common disinfectants used in endoscopy reprocessing
14. Name **two** accessories used for polyp removal
15. Name **two** accessories used for ERCP.

**SECOND SEMESTER – BACHELOR IN HOSPITAL ADMINISTRATION
DEGREE EXAMINATION – JULY 2025**

Time: 3 Hours

Max. Marks: 80

FUNDAMENTALS OF ACCOUNTING

Q.P. Code:7027

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 accounting. What is process involved in accounting system?
2. Write a detailed note on Generally Accepted Accounting & Principles (GAAP).
3. Explain the rules for accounting with suitable examples.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. What is importance of accounting?
5. What is profit & loss account and balance sheet?
6. What are various types of leverages?
7. What is structure of profit and loss account?
8. What is journal entry?
9. What are challenges in accounting practices?
10. What is double entry system of book keeping?
11. What is bank reconciliation statement?
12. Write a short note on cash book.
13. Prepare a trial balance from the following balances as on 31st March 2025.

Particulars	Amount (Rs.)	Particulars	Amount (Rs.)	Particulars	Amount (Rs.)
Capital	50,000	Cash in hand	5,000	Furniture	10,000
Sales	40,000	Purchases	20,000	Rent paid	2,000
Salaries paid	3,000	Debtors	15,000	Creditors	10,000
Bank loan	5,000				

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. What are types of accounting errors?
15. How petty cash book is maintained?
16. What is trial balance?
17. Name and define any **three** types of cash books.
18. List all accounting errors.
19. Explain the importance of posting entries into the ledger.

B.SC. IN HEALTH INFORMATION MANAGEMENT-II SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 40

PATHOLOGY

Q.P. Code: 1908

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

Question Number

Marks

LONG ESSAY QUESTIONS (Answer any ONE):

1 X 10 = 10

1. What is necrosis? Discuss the various types of necrosis with examples.
2. Define anaemia. Classify and enumerate basic laboratory investigations for iron deficiency anaemia. (2+4+4)

SHORT ESSAY QUESTIONS (Answer any THREE):

3 X 5 = 15

3. Discuss routes of tumour spread.
4. Classify leprosy. Add a note on investigations done for leprosy.
5. What is thrombocytopenia? Enumerate the causes for the same.
6. What is infraction? Classify infraction with examples.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

7. What is neoplasia? Give **two** examples of each for benign and malignant tumour.
8. Enumerate the steps in phagocytosis.
9. Define dysplasia. Give **two** examples.
10. What is atrophy? Give **two** examples.
11. Name the laboratory tests done for HIV /AIDS.
12. Enumerate **six** tests done for diagnosis of tumours.

KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

(Declared as Deemed-to-be-University u/s 3 & 12B of the UGC Act, 1956)

Accredited A+ Grade by NAAC (3rd Cycle)

Placed in 'A' Category by MoE (GoI)

B.SC. IN RADIATION THERAPY-IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

ONCOLOGY SCIENCE

Q.P. Code:1157

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 various imaging techniques used in Radiotherapy. Explain in detail the uses of CT imaging in radiotherapy (4+6)
2. Define cancer. Enumerate the common causes of cancer. Explain in detail the TNM staging of cancer (2+4+4)
3. Enumerate different methods used in diagnosing cancer. Explain biopsy method of diagnosis in detail giving suitable clinical examples. (3+7)

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. With an example and using a flow chart, explain neo-adjuvant radiotherapy
5. With a neat diagram explain GTV, CTV, ITV and PTV
6. List the differences between normal cell and cancer cell with a neat labelled diagram
7. Mention **two** common cancers in males. Write a short note on any **one** of them
8. Explain the management of head and neck tumours using a suitable example with respect to RT techniques, dose prescription and OAR constraints
9. With a neat diagram explain the various ways of tumour spread

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Mention any **three** symptoms of cancer
11. Mention any **three** uses of PET CT in radiotherapy
12. Name any **three** OARs in abdomen region
13. With respect to pain medications used for pain management, complete the sentence by the _____ by the _____ by the _____.
14. Name any **three** cancers treated with electrons
15. Name any **three** cancers caused by viruses

B.SC. EMERGENCY MEDICINE -IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

EMERGENCY MEDICINE AND EMERGENCY MEDICAL SERVICES – III

Q.P. Code: 1148

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 in brief etiopathology, signs, symptoms and management of acute pancreatitis.
2. Discuss in brief etiopathology, signs, symptoms and management of acute exacerbation of COPD with special emphasis on ventilator management.
3. Discuss in brief various types of crystalloids used in intensive care unit.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Discuss in brief diabetic ketoacidosis.
5. Discuss in brief upper GI bleed.
6. Discuss in brief medications used in treatment of myocardial infarction.
7. Discuss in brief paracetamol poisoning.
8. Explain in brief management of snake bite.
9. Discuss in brief drugs used in ischemic stroke.

SHORT ANSWER QUESTIONS (Answer any FIVE):

3 X 5 = 15

10. Mention **three** causes of raised ICP.
11. Mention **three** anti oedema measures.
12. Mention drugs in treatment of bronchial asthma exacerbation.
13. Mention various colloids used in ICU.
14. Indications for Ryle's tube insertion.
15. What is gastric lavage?

B.SC. EMERGENCY MEDICINE -VI SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

PROCEDURAL SKILLS IN EMERGENCY CARE

Q.P. Code: 1163

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 various types of renal replacement therapies.
2. Describe with neat labelled diagram 4 chamber view and parasternal PLAX view in 2D Echocardiography
3. What is patient controlled analgesia? Discuss types of patient controlled analgesia

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Discuss grading of bed sores
5. What is post-operative hypothermia? Explain strategies to prevent post-operative hypothermia.
6. Discuss regional anaesthesia techniques for post-operative pain management.
7. Discuss in brief maintenance of electrical defibrillator
8. Discuss non pharmacological measures to reduce ICP.
9. Discuss initial steps in emergency trauma management.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. Mention contraindications for gastric lavage.
11. Mention various USG probes used in critical care units with its frequency
12. Mention methods used to confirm endotracheal tube placement.
13. Mention methods used to confirm ryle's tube placement.
14. Write a short note on endotracheal tube care.
15. What are the precautions to be followed for securing urine drainage bag?

B.SC. IN RESPIRATORY CARE TECHNOLOGY-IV SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 60

CARDIAC DIAGNOSTICS

Q.P. Code:1160

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 systemic approach to read ECG. Add a note on changes in mobitz 1 & 2 heart block
2. Describe principles, indications, waveform analysis and troubleshooting of CVP monitoring
3. Describe arterial line calibration. What is flush test of arterial line? Describe damping and mention factors affecting it.

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

4. Describe management of supraventricular tachycardia
5. Describe use of echo and different views in brief
6. Describe Holter monitoring and its indications
7. Describe Coronary angiogram
8. What are the ECG changes seen in hypokalemia and how to treat?
9. Describe type 3 heart block and its management

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

10. List causes of bradycardia
11. List types of arterial catheters
12. List indications for invasive arterial BP monitoring
13. What is modified Allen's test?
14. Name **three** contraindications for centre line insertion
15. List **three** uses of centre line.

**SECOND SEMESTER – BACHELOR OF PUBLIC HEALTH
BACHELOR OF PUBLIC HEALTH (HONS)
DEGREE EXAMINATION – JULY 2025**

Time: 3 Hours

Max. Marks: 80

INTRODUCTION TO PUBLIC HEALTH NUTRITION

Q.P. Code:1858

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 PEM (protein energy malnutrition). Briefly describe its classification, causes, clinical features and preventive measures.
2. Describe balanced diet for adults. Discuss various methods of diet survey to assess nutrition deficiency/excess.
3. What are the nutritional requirements of school children? Elaborate a plan to meet these requirements.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Discuss briefly diet during pregnancy and lactation
5. Discuss briefly causes, manifestations and prevention of vitamin A deficiency.
6. Discuss the importance of fresh fruits and vegetables in diet.
7. Discuss the spectrum of Iodine deficiency disorders and their detection methods
8. Discuss the food adulteration and its prevention.
9. Describe the Recommended Dietary Allowances (RDA) for Indian Reference man and Reference Woman
10. Discuss the importance of dietary fibers in the food.
11. Describe milk hygiene, prevention and control of milk borne diseases.
12. Write a short note on food pyramid.
13. Discuss briefly the causes, clinical features and prevention of vitamin C deficiency

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. Mention functions of iron in human body
15. Mention the functions of Proteins in human body
16. Mention any **three** saturated fatty acids and unsaturated fatty acids.
17. Define exclusive breast feeding. How long it should be done?
18. What is the importance of labeling on packed food?
19. Mention any **three** functions of calcium in human body

**SECOND SEMESTER – BACHELOR IN HOSPITAL ADMINISTRATION
DEGREE EXAMINATION – JULY 2025**

Time: 3 Hours

Max. Marks: 80

FINANCIAL MANAGEMENT

Q.P. Code:7028

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 financial management. Discuss scope and objectives of financial management.	(2+4+4)
2. Explain the term asset. Enumerate the determinants of fixed capital and working capital.	(2+4+4)
3. Explain the concept of time value of money (TVM). Why it is important in financial decision making? Discuss its key components and practical application.	(2+3+5)
SHORT ESSAY QUESTIONS (Answer any NINE):	9 X 5 = 45
4. What are the various types of leverage?	
5. What is net income theory in capital structure?	
6. What are the components of working capital?	
7. List reasons of issuing stock dividend.	
8. What is dividend policy? What are the determinants of dividend policy?	
9. What is net working capital?	
10. What is profit maximization?	
11. What are finance functions?	
12. What is financial planning?	
13. What are accounting errors? Explain the methods to rectify it.	
SHORT ANSWER QUESTIONS (Answer any FIVE):	5 X 3 = 15
14. What are the sources available for dividend?	
15. What is financial leverage?	
16. What is importance of capital?	
17. What is Net Present Value (NPV)?	
18. List the short term sources of finance.	
19. What does cost of debt mean?	

B.S.C. IN HEALTH INFORMATION MANAGEMENT-II SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 80

PRINCIPLES OF MANAGEMENT

Q.P. Code: 7004

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 Henry Fayol's 14 principles in detail.
2. Define motivation. Explain motivation theories in detail. (2+8)
3. Define management and explain its scope. How do the principles of management help in achieving organizational goals? (4+6)

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. Differentiate between traditional management and modern management.
5. Identify common sources of conflict in management.
6. Explain the key components of management.
7. Enumerate the various roles of a manager.
8. Discuss the steps involved in staffing new employees.
9. Write a short note on management by objectives (MBO).
10. Explain the challenges faced by managers in organizations.
11. Write a short note on the concept of organization.
12. Suggest some methods for achieving effective management.
13. What challenges are faced during the staffing process?

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. Write a short note on contingency approach of management.
15. Differentiate between the role of monitor and disseminator in informational roles.
16. What are benefits of good management on healthcare?
17. What are functions of management?
18. What is difference between centralization and decentralization?
19. Discuss the role of a manager as disturbance handler in Mintzberg model.

B.S.C. IN HEALTH INFORMATION MANAGEMENT-II SEMESTER

JULY 2025

Time: 3 Hours

Max. Marks: 50

BASIC MEDICAL TERMINOLOGY

Q.P. Code: 7005

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

Question Number

Marks

LONG ESSAY QUESTIONS (Answer any ONE):

1 X 10 = 10

1. List the medical terms and their meanings for any **five** disease conditions related to blood.
2. Provide expansions of the given medical abbreviations:
i) AMI ii) ASD iii) a.b.d iv) BE v) BPH vi) COPD
vii) IUD viii) IV ix) LMP x) PET

SHORT ESSAY QUESTIONS (Answer any FIVE):

5 X 5 = 25

3. Write the meanings of the following medical terms:
i) Adenocarcinoma ii) Amenorrhea iii) Neuropathy
iv) Hepatomegaly v) Myeloma
4. Write appropriate medical terms for any **five** inflammations of gastro-intestinal tract and their meanings.
5. Provide a suitable diagnostic procedure for each disease condition given below:
i) Breast cancer ii) Myocardial Ischemia iii) Pneumonia
iv) Respiratory obstruction v) Suspected gastric cancer vi) Ovarian cyst
6. Provide the medical terms of the following conditions: i) An irregularity appearing along with birth ii) Shortage of blood supply to any part of the body
iii) Difficulty in breathing iv) Abnormal condition of blood in the urine
v) Accumulation of fluid in the pleural cavity
7. Differentiate the following: i) Myelogram and Mammogram ii) Haemodialysis and Peritoneal dialysis iii) Ischemia and Anaemia iv) Prognosis and Diagnosis
v) Arthroscopy and arthroscopy
8. Provide the standard medical words for the following and write their meanings:
i) Head ache ii) Stroke iii) Heart attack iv) Kidney stone v) Blood cancer

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

9. Write the body parts associated with the given disease conditions:
i) Colitis ii) Ascites iii) Leukaemia iv) Osteoarthritis v) Thrombosis vi) Myalgia
10. Write the meanings of the surgical procedures given below:
i) Laryngectomy ii) Gastrojejunostomy iii) Thoracentesis
11. Write the meanings of the medical words given below:
i) Encephalopathy ii) Myocardial ischemia iii) Sleep apnea
12. Write appropriate associated therapeutic procedures for the given disease conditions:
i) Kidney failure ii) Gallbladder stone iii) Breast cancer
13. Separate the prefix part from the given medical terms and write their meanings.
i) Intervertebral ii) Hyperglycaemia iii) Hemiplegia iv) Antibiotic v) Polyuria
vi) Subscapular
14. Provide the medical terms for the following body parts: i) Tailbone ii) Throat
iii) Windpipe iv) Backbone v) Large intestine vi) Food pipe

**B.SC. IN HEALTH INFORMATION MANAGEMENT-II SEMESTER
JULY 2025**

Time: 3 Hours

Max. Marks: 80

PRINCIPLES OF HEALTH INFORMATION AND DATA MANAGEMENT

Q.P. Code: 7006

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. Give a brief account of Data quality management model and different attributes of data quality management
2. What are the components of an MPI? Discuss the benefits of using master patient index.
3. Define health record and users of health record. Discuss the different purposes of using health information.

SHORT ESSAY QUESTIONS (Answer any NINE):

9 X 5 = 45

4. What are institutional users of health information? Give an account on the use of health information by various institutional users
5. Define EHR and EMR. How do EHRs functions transform healthcare businesses?
6. Give a brief description on the breach of confidentiality and related issues in healthcare.
7. What is the major role of master patient index in health care and what are the data integrity associated problems of master patient index?
8. Elucidate the structure and contents of different types of diagnostic and therapeutic reports in a health record.
9. Explain the confidentiality, privacy, security, connectivity, efficiency and flexibility aspects of health data.
10. Explain the process of correcting errors in health records.
11. State any **five** health information management principles and mention the related attributes to each of them.
12. Describe the data quality characteristics of health data.
13. Explain physical examination, medical history and discharge summary documentation.

SHORT ANSWER QUESTIONS (Answer any FIVE):

5 X 3 = 15

14. How does health information play a major role in tracking bioterrorism and epidemics?
15. Write any **two** differences between EMR and PHR
16. Data relevancy is ensured in EHRs comparing to paper health records. Why?
17. What are the processes of collecting different types of administrative data in the health records?
18. Write a short note on consent.
19. Who are authorized to sign the health record forms given below?
i) Discharge order ii) Therapeutic order iii) Diagnostic order iv) Medication order
v) Physical examination vi) Operation report