

POST-GRADUATE DEGREE (M.D.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

**PATHOLOGY
PAPER – IV**

(Recent advances and applied aspects)

Q.P. Code: 1216

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

Question Number	Marks
ESSAY QUESTIONS:	10 X 10 = 100
1. Discuss recent tests for the diagnosis of Tuberculosis and the concept of Point of Care (POC) testing.	(8+2)
2. Discuss WHO classification, molecular markers and recent advances in Non-Hodgkin's Lymphoma.	(4+3+3)
3. Discuss recent diagnostic and prognostic indices in endometrial carcinoma.	(6+4)
4. Discuss molecular cytogenetics of haematological malignancies	
5. Discuss the role of autopsy in the diagnosis of sepsis and related fatal syndromes.	
6. Discuss updates on the pathology of chronic inflammatory bowel disease	
7. Discuss the pathology & criteria for diagnosis of autoimmune hepatitis.	(8+2)
8. Discuss pathogenesis of chemotherapy and cancer-induced anemia	
9. Discuss histogenesis of salivary gland tumors and revised WHO classification.	(4+6)
10. Discuss recent concepts of carcinogenesis and the role of oncogenes.	(4+6)

POST-GRADUATE DEGREE (M.D.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

MICROBIOLOGY

PAPER – IV

(Applied Microbiology and Recent Advances)

Q.P. Code: 1220

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

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

1. Discuss the molecular techniques used in Microbiology. Add a note on gene therapy and gene mapping. (5+5)
2. Explain the analysis of whole genomes for gene expression patterns using microarrays.
3. Explain the principle and methodology of DNA sequencing. (5+5)
4. A 42-year-old patient was admitted in ICU after a road traffic accident, he was unconscious and urinary catheter was inserted. He developed Catheter Associated Urinary Tract Infection (CAUTI) after 2 days of indwelling urinary catheter.
a) What are the criteria's for diagnosis of CAUTI?
b) Describe the Bundle care approach for prevention of CAUTI. (5+5)
5. Describe the steps to investigate and confirm an outbreak. Add a note on notifiable diseases. (8+2)
6. Discuss the role of Hospital Infection Control Committee in identification and control of an outbreak of infection in NICU.
7. Discuss the recommendation of HPV vaccination for adolescent girls. Describe the mechanism of vaccine mediated prophylaxis against HPV. (5+5)
8. A 52-year-old male has undergone an abdominal surgery for perforated appendix. Enumerate the biomedical waste generated and describe the procedure to manage the same. (3+7)
9. Discuss the utility of information technology in diagnostic microbiology.
10. You have been asked to standardise the inoculum size for assimilation test. You are provided with Mc Farlands turbidity standard of 0.5, 1, 2, 4. How to statistically analyse the results to conclude on appropriate turbidity standard?

POST-GRADUATE DEGREE (M.D.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

PHARMACOLOGY

PAPER – IV

(Recent advances, therapeutics and experimental pharmacology)

Q.P. Code: 1224

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

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

1. Discuss in detail about various clinical and experimental evaluations of anti-asthmatic drugs. (4+6)
2. Discuss in detail about Toxicity studies
3. Discuss screening methods used for evaluation of local anaesthetics.
4. Describe Mouse as an experimental animal in conduct of clinical trials
5. Discuss the pharmacotherapy of monoclonal antibodies.
6. Discuss in detail about Gene therapy and its clinical application (5+5)
7. Discuss pharmacotherapy of urinary tract infections.
8. Discuss Irrational Fixed Dose Combinations used in therapeutics. Add a note on rational drug use. (6+4)
9. Describe in short chronopharmacology and its clinical implications. (5+5)
10. Discuss Pharmacology of low molecular weight heparins. Add a note on their advantages over conventional heparin. (5+5)

POST-GRADUATE DEGREE (M.D.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

FORENSIC MEDICINE

PAPER – IV

Q.P. Code: 1228

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

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

1. A patient is brought to the casualty with consumption of clear fluid with choking odour and complained of coffee ground vomitus and brown coloured urine. Diagnose and discuss the clinical features, treatment and postmortem findings in a such poisoning case. (4+3+3)
2. A patient is brought to you who feels everyone is trying to kill him in spite of assuring him that it's not true. Define what type of mental illness is he suffering from. Discuss its types and medicolegal importance. (2+6+2)
3. Classify poisonous snakes. Discuss the clinical features and management of cobra bite. (3+3+4)
4. A 50-year-old male person comes to Skin OPD with history of skin disease on applying an ointment for a long period of time. This caused him stomatitis, slate grey stomach mucosa, strawberry tongue, tremors with neuropsychiatric changes. Describe clinical features and management of this clinical condition. Add a note on classification of inorganic poisons. (3+4+3)
5. Discuss the procedure and legal status of Brain fingerprinting in India. (8+2)
6. Mention the Truth Serum Drugs. Discuss the procedure of Narcoanalysis and its legal status in India. (2+6+2)
7. Enumerate the designer drugs. Discuss the general clinical features and withdrawal symptoms in drug addiction. (2+4+4)
8. Discuss Body Packer syndrome, Body Pusher syndrome and Body Stuffer syndrome. (6+2+2)
9. Discuss the clinical features, treatment and causes of death in a case of chronic carbolic acid poisoning. (4+3+3)
10. A patient is brought to the casualty with consumption of fruit with sharp spines. On examination patient presented with dilatation of pupil with tactile hallucination. Discuss the clinical features, treatment and medicolegal aspects in such poisoning. (4+3+3)

POST-GRADUATE DEGREE (M.D.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

COMMUNITY MEDICINE

PAPER – IV

(Health and hospital administration, health care delivery including national programmes, public health legislation, genetics and counseling, mental health, international health, Voluntary health organizations, NGOs.)

Q.P. Code: 1232

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

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

1. A cyclone hits a coastal district, affecting 500,000 people. Many are injured, and thousands are displaced. Relief teams are struggling to reach remote areas due to damaged infrastructure. As a community medicine specialist, Discuss the priority public health interventions in the first 48 hours of the response phase.
2. A 35-year-old male worker in a textile factory presents with symptoms of cough, wheezing and shortness of breath. He has been working in the factory for last 5 years and is exposed to cotton dust. (1+9)
 - a) What is the probable diagnosis?
 - b) Discuss the medical and engineering preventive measures for above condition.
3. Discuss the application of 'Geographical Information System (GIS)' in 'Vector borne diseases control' with suitable examples.
4. Discuss how principles of health management are applicable and useful to medical officer of a primary health centre
5. How does the extreme climate of desert regions impact the health of populations residing there? Discuss specific health challenges and their management strategies. (4+6)
6. A health education program is organized in a rural village to promote the use of condoms and prevent HIV/AIDS. However, the program is conducted in English, which most villagers do not understand. (3+7)
 - a) Discuss the various barriers usually faced by the health educators in rural area.
 - b) Plan an effective health education program to promote the use of condoms and prevent HIV/AIDS.
7. How does resource allocation impact public health outcomes? Discuss strategies for prioritizing resources to maximize health benefits, considering economic constraints. (4+6)
8. Discuss the role of AETCOM (Attitude, Ethics and communication) module in improving doctor patient relationship. Highlight its importance while providing health care at rural setting . (7+3)
9. Discuss the role of information technology in community health care.
10. Discuss the role of NGOs and private sectors in achievement of sustainable development goals.

POST-GRADUATE DEGREE (M.D.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

ANAESTHESIOLOGY
PAPER – IV
(Applied medicine in relation to Anaesthesia)

Q.P. Code: 1236

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

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

1. A patient with cancer of pancreas comes with chronic pain explain cause and various methods to relieve the pain in the patient. (5+5)
2. Describe in detail about Autologous blood transfusion.
3. Describe various steps in designing Pain clinic. Outline the role of anesthesiologist in a pain clinic. (4+6)
4. What is Mendelson syndrome? Discuss the drugs used to prevent Mendelson syndrome. (4+6)
5. Describe noninvasive ventilation and its advantage over conventional mechanical ventilation. (3+7)
6. Discuss the various components of Surviving Sepsis guidelines.
7. Discuss resuscitation in a patient of age 40 years old coming from a rural area with history of snake bite over left foot.
8. Explain the strategies to reduce harmful effects of controlled ventilation.
9. Explain BLS and ACLS drill in Drowning patient. (5+5)
10. What is opioid free anaesthesia? Discuss the techniques, merits and demerits of opioid free anaesthesia. (2+2+3+3)

POST-GRADUATE DEGREE (M.D.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

DERMATOLOGY, VENEREOLOGY AND LEPROSY

PAPER – IV

(Dermatology in relation to other systemic diseases, dermato-therapeutics,
dermato-surgery and recent advances in Dermatology, Venereology & Leprosy)

Q.P. Code: 1240

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

1. A middle aged male patient comes with a history of multiple hyperpigmented macules and patches over abdomen, lip and genitalia since 1 week. There is a history of diarrhea 1 week back and history of similar complaints over the same area in the past. Discuss the evaluation of this patient. Explain the etiopathogenesis and its management. (3+4+3)
2. Discuss systemic drug related intertriginous and flexural erythema with regard to pathogenesis, etiology, clinical features and management. List the paradoxical drug reactions. (6+4)
3. Discuss systemic retinoids in dermatology in terms of mechanism of action, indications, contraindications and side effects. Write a note on dermatologic indications for newer retinoids. (6+4)
4. A 35-year-old male patient comes with a clinical diagnosis of androgenetic alopecia with Norwood Hamilton scale of IV. Plan an approach towards its management. Write the difference between FUE and FUT. (6+4)
5. A 72-year-old male patient on dialysis for chronic kidney disease comes with history of intractable pruritus. Explain the management of this case. Enlist the dermatological manifestation of patients undergoing haemodialysis. (6+4)
6. Describe Factitious dermatosis. Write a note on Acne Excoriae. (8+2)
7. Classify and explain in detail about xanthomas in terms of types, pathogenesis, clinical features. Write the treatment options for xanthelasma palpebrum (8+2)
8. Construct a treatment plan for a case of melasma in a 36-year-old female. Write a note on pigment removal laser in melasma and its complications. (4+3+3)
9. Discuss Fillers in dermatology with regard to indications, types and complications of fillers. Write a note on techniques of injecting fillers. (6+4)
10. Describe cutaneous manifestations of internal malignancies. Write a note on Leukemia cutis. (6+4)

POST-GRADUATE DEGREE (M.D.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

GENERAL MEDICINE

PAPER – IV

*(Nephrology, endocrinology and metabolism, haematology, oncology,
dermatology and psychiatry, poisoning, environmental and occupational hazards)*

Q.P. Code: 1244

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

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

1. A 65-year-old man with a history of smoking and hypertension presents with dyslipidemia. His lipid panel shows elevated LDL cholesterol levels. Justify how lipid levels influence treatment decisions and strategies for primary and secondary prevention of cardiovascular events. (4+3+3)
2. A 35-year-old female presents with petechiae and easy bruising. She has no history of recent infections or medications. Laboratory tests reveal isolated thrombocytopenia with normal coagulation studies. Discuss the differential diagnosis and management approach to a suspected case of thrombocytopenia. (5+5)
3. A 28-year-old pregnant woman presents with fatigue and weight gain. Laboratory tests reveal elevated TSH levels and low free T4 levels. Describe the management of this case in pregnancy, including the implications for maternal and fetal health. (5+5)
4. A 25-year-old male presents with a 2-year history of decline in functioning, bizarre behavior, disorganized thinking, hallucinations and family history of schizophrenia. How will you manage this case? Add a note about first rank symptoms. (5+5)
5. Discuss JNC-8 guidelines for the management of hypertension
6. A 60-year-old patient came to OPD for regular follow-up. On examination B.P-210/110mmHg. Discuss the approach towards management of this patient.
7. Discuss newer guidelines in the management of Dyslipidemia.
8. Discuss in detail newer guidelines to diagnose Lupus nephritis. Add a note on its management. (5+5)
9. Discuss the complications that may occur during chemotherapy in a patient of acute lymphoblastic leukemia and how would you manage it? (5+5)
10. Discuss the etiopathogenesis, clinical features and management of vitiligo. (3+3+4)

POST-GRADUATE DEGREE (M.D.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

PAEDIATRICS

PAPER – IV

*(Ambulatory OPD Pediatrics, community and social pediatrics,
emergency and critical care pediatrics)*

Q.P. Code: 1248

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

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

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|-----|--|-----------|
| 1. | Explain assessment of a 10-year-old child who has fallen unconscious and requires basic life support. Discuss steps for basic life support to such a child. | (3+7) |
| 2. | Discuss in brief the various modes of noninvasive ventilation and its clinical implications | (5+5) |
| 3. | An eight-year-old girl presents with acute onset vomiting, diarrhea and respiratory distress. Explain in brief the Pathophysiology and management of Organophosphorous poisoning. | (5+5) |
| 4. | Discuss in brief the role of biomarkers in Acute Kidney Injury | |
| 5. | Define gastro – esophageal reflux disease (GERD). Describe its clinical diagnosis and treatment. | (4+6) |
| 6. | A 4-month child presents with excessive crying in the late evening. Explain in brief the differential diagnosis and management of this child. | (5+5) |
| 7. | Discuss the drugs used for procedural sedation in children | |
| 8. | Mention four different Venomous snakes in India. Enumerate clinical features, complications and management of Viper bite. | (2+2+3+3) |
| 9. | An 18-month old child was brought to pediatric intensive care after he fell upside down in a tub filled with water. Discuss the steps of initial resuscitation and subsequent hospital management. | (4+6) |
| 10. | Discuss the most commonly used statistical modalities in paediatric research for assessing efficacy of new treatments. | |

POST-GRADUATE DEGREE (M.D.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

PSYCHIATRY

PAPER – IV

*(Recent Advances in Psychiatry and applied Psychiatry related to
Neurology and Medicine)*

Q.P. Code: 1252

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

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

1. Discuss the differential diagnosis of a 60-year-old patient presenting with difficulty in walking and memory impairment.
2. Classify dementia. Briefly discuss the clinical features of common subtypes of dementia. (4+6)
3. Discuss the differential diagnoses of a 64-year-old female patient presenting with Sudden onset behavioral changes.
4. Discuss the approach to a 35-year-old lady with history of headache since 3 months.
5. List common causes for reversible dementia. Compare and contrast dementia and pseudodementia (2+8)
6. Define post-stroke depression. Discuss the clinical features, differential diagnosis and management of Post-stroke depression (1+2+2+4)
7. Discuss the potential use of Artificial Intelligence in psychiatry. Add a note on potential problems artificial intelligence might pose on mental health. (5+5)
8. Discuss the indications, pharmacokinetics & pharmacodynamics of Pimavanserin (2+4+4)
9. Discuss the psychiatric aspects of a 45 years old lady with breast cancer, who is terminally ill.
10. Describe role of Newer imaging techniques in psychiatry.

POST-GRADUATE DEGREE (M.D.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

RADIO-DIAGNOSIS

PAPER – IV

(CNS including head and neck, Interventional radiology and Recent advances)

Q.P. Code: 1256

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

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

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|-----|--|-----------|
| 1. | Discuss in detail role of MR imaging in placenta praevia. Comment on advantages and limitations. | (6+4) |
| 2. | Discuss advantages of 3-Tesla MRI over 1.5-Tesla MRI. Comment on limitations and clinical applications of 3-tesla MRI. | (4+3+3) |
| 3. | Discuss briefly indications, technique, complications and post procedure follow-up of trans-jugular intrahepatic porto systemic shunt (TIPS). | (4+2+2+2) |
| 4. | Demonstrate the role of diffusion-weighted imaging in acute ischemic stroke diagnosis. | |
| 5. | Analyze the MRI findings in a patient with multiple sclerosis, periventricular white matter lesions and Gadolinium enhancement | |
| 6. | A 10-year-old patient with orbital rhabdomyosarcoma, CT scan showing extraocular muscle involvement with bony destruction. Describe staging and management of this case. Add a note on recommended follow-up imaging | (5+5) |
| 7. | Explain the imaging findings in a patient with, spinal cord injury with acute spinal cord compression. Describe MRI findings in this case | |
| 8. | List various breast lesions. Discuss the role of guided interventions in diagnosing breast lesions. | (3+7) |
| 9. | Compare and contrast imaging features of orbital lymphoma and meningioma. | |
| 10. | Describe ultrasound color Doppler of lower limb veins in case of DVT and add a note on the role of interventional radiology in treatment and management. | (4+3+3) |

POST-GRADUATE DEGREE (M.D.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

RESPIRATORY MEDICINE

PAPER – IV

*(Recent Advance in Respiratory Medicine including
Critical Care aspects)*

Q.P. Code: 1260

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

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

1. Discuss evaluation of a case on exertional dyspnea in a 50 year old male patient.
2. Discuss screening for lung cancer. Discuss the differential diagnosis of pulmonary infiltrates in lung cancer. (5+5)
3. Discuss the antifibrotics drugs in Idiopathic pulmonary fibrosis (IPF). Discuss the role of pulmonary rehabilitation in IPF. (5+5)
4. What are the indications and complications of Cryobiopsy? Discuss the liquid biopsy test for lung cancer patients. (5+5)
5. Enumerate the indications of lung transplantation in Idiopathic pulmonary fibrosis and chronic obstructive pulmonary disease. Discuss the complications of lung transplantation. (5+5)
6. Discuss the infection control strategies for airborne diseases. Describe the various preventive strategies in pulmonary tuberculosis. (5+5)
7. Discuss the determinants of disease progression in systemic sclerosis associated Interstitial lung disease (ILD). Discuss treatment of ILD systemic sclerosis. (5+5)
8. A 48-year-old female obese patient with weight of 98 kg comes to outpatient department with dry cough and fatigue. How to investigate such a case?
9. A 45-year-old case of pneumonia treated outside for 7 days is now admitted in ICU with fever and non-resolving consolidation. How to investigate such a case and discuss the management options including antimicrobials?
10. What is FiO₂? What are the methods used to measure it? State normal and abnormal values of the same. Discuss its clinical implications. (2+3+2+3)

POST-GRADUATE DEGREE (M.S.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

**GENERAL SURGERY
PAPER – IV**

Q.P. Code: 1264

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

Question Number	Marks
LONG ESSAY QUESTIONS:	
10 X 10 = 100	
1. A 50-year-old businessman has undertaken an 12 hour journey on a nonstop flight. He complains of painful swelling of right lower limb. Describe the differential diagnosis, investigations and treatment of this patient.	(2+4+4)
2. What is Vacuum Assisted closure (VAC)? Describe the principles, indications and advantages of VAC	(1+3+3+3)
3. Describe the newer energy sources used in surgical practice. Add a note on safety measures to be employed when using energy sources	(6+4)
4. Classify staplers used in GI surgery. Write a note on their mechanism of action	(4+6)
5. Classify the materials used in dressing a wound. Add a note on newer dressing materials.	(3+7)
6. What is sarcopenia? Describe the ill effects of sarcopenia on patient undergoing major surgical operation.	(3+7)
7. What is Thyroid Imaging Reporting and Data system (TIRADS)? Write a note on its clinical application	(4+6)
8. What is loss of abdominal domain? Write brief note on Tanaka Index. Discuss strategies to deal with Loss of Abdominal Domain during incisional hernia surgery	(1+3+6)
9. Write a note on Clinical- Etiology-Anatomy- Pathophysiology (CEAP) classification of varicose veins. Discuss non-surgical methods of treatment for varicose veins	(3+7)
10. Write a note on modern trauma care. Describe the role of Permissive Hypotensive Resuscitation in trauma patients.	(4+6)

POST-GRADUATE DEGREE (M.S.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

OBSTETRICS AND GYNAECOLOGY

PAPER – IV
(Recent advances)

Q.P. Code: 1268

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

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

1. Define stress urinary incontinence (SUI). Enumerate risk factors for SUI. Discuss the surgical management of SUI. Add a note on newer procedures for the same. (2+2+4+2)
2. A 16 years old girl presents with infrequent menses since past two years. She weighs 70 kgs. She has increased facial hair and darkening of skin over the nape of the neck. Discuss the recent diagnostic criteria of PCOS. Add a note on role of insulin sensitizing agents in the management of PCOS. (6+4)
3. How do you differentiate benign from malignant ovarian tumors? Add a note on role of fertility preservation in a young woman presenting with malignant ovarian tumor. (6+4)
4. A 15-year-old girl presented with heavy menstrual bleeding. she attained menarche at 12 years. Initial cycles were irregular and heavy. Present cycles are regular but heavy with passage of clots. Classify AUB as per PALM-COEIN classification. Discuss the management of heavy menstrual bleeding in an adolescent girl. (6+4)
5. Define shock in obstetrics. What are the causes of shock in Obstetrics? Explain the pathophysiology of septic shock in obstetric patients. What are the components of Maternity Early Warning Criteria (MEOWS score)? (1+2+4+3)
6. Discuss the role of ultrasound in the first trimester. Explain the use of nuchal translucency measurement in the 1st trimester. Add a note on biomarkers in first trimester screening. (3+4+3)
7. Discuss the role of office hysteroscopy in evaluation of female infertility. Add a note on complications of the same and their prevention. (6+4)
8. Discuss various parenteral iron preparations available for management of iron deficiency anemia in pregnancy. Add a note on mechanism of action, dosage calculation and side effects of ferric carboxy-maltose. (4+6)
9. Discuss the indications of minimally-invasive surgical techniques in an infertile woman. Discuss the impact of ART on maternal and fetal outcomes. (5+5)
10. Explain the role of ultrasound in evaluation of female infertility. Add a note on role of genetic testing in infertile couples. (6+4)

POST-GRADUATE DEGREE (M.S.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

OPHTHALMOLOGY

PAPER – IV

(Surgical ophthalmology, community ophthalmology,
Ophthalmic research and recent advances)

Q.P. Code: 1272

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

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

1. A 25-year-old man complaining of itching & redness of both eyes since childhood presents with gradually increasing photophobia and refractive error. Outline the workup and management of this case. Add a note on recent advances in management of this case. (3+3+4)
2. Discuss the role of neuroprotection in glaucoma? Enumerate drugs used for the same? (5+5)
3. What is vision 2020? What are the diseases covered under this scheme? Briefly describe its functioning strategy. (2+3+5)
4. Discuss the management of corneoscleral perforation with iris prolapse in a 5-year-old child after injury with bow and arrow during Diwali.
5. How will you evaluate and manage an anophthalmic socket in a 3-year-old child? (5+5)
6. Broadly classify viscoelastic substances used in ophthalmic surgery. What is soft shell technique in cataract surgery and enlist important precautions while performing phacoemulsification in cases with low corneal endothelial counts. (2+4+4)
7. A 40-yr-old male complains of watering and discharge since 2 years. Discuss the various causes and its management. (4+6)
8. Discuss the principles of optical coherence tomography (OCT). Discuss the types and indications of OCT. (4+2+4)
9. Discuss BEAT - ROP study in detail.
10. A 31-year-old female presented to emergency department with an accidental chemical injury with detergent at home. Discuss clinical features and management of this case. (4+6)

POST-GRADUATE DEGREE (M.S.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

ORTHOPAEDICS
PAPER – IV
(Recent advances in orthopaedics)

Q.P. Code: 1276

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

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

1. 70 years old patient presents with painful hip 5 years after THA (total hip arthroplasty). Discuss clinical & radiological features and management of aseptic loosening after cement less THA. (3+3+4)
2. Discuss recent advances in detection of skeletal mycobacterium tuberculosis infection
3. Define disc replacement Surgery and describe the procedure. Add a note on advantages and complications of the same. (6+4)
4. Describe recent advances in articular cartilage tissue engineering.
5. 30 years old lady presents with clinical features suggestive of rheumatoid arthritis. Elaborate recent advances in diagnosis and management of rheumatoid arthritis. (5+5)
6. 15-year-old boy presents with recurrent fractures due to osteogenesis imperfecta. Describe the role of gene therapy in treating genetic orthopaedic disorders.
7. Describe the use of nuclear scan studies in diagnosing and managing orthopaedic conditions. (5+5)
8. 50 years old patient is diagnosed with complete supraspinatus tear. Discuss the types, indications and complications of suture anchors. (4+2+4)
9. Discuss the indications, techniques, and outcomes of unicondylar knee replacement. (2+4+4)
10. Discuss the levels of evidence in Orthopaedic research.

POST-GRADUATE DEGREE (M.S.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

BIOCHEMISTRY

PAPER – IV

(Pharyngology and Broncho-oesophagology including recent advances)

Q.P. Code:

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

1. A 3-day-old baby was found to have yellowish discoloration of skin and sclera. It was a full term, normal vaginal delivery with birth weight 2.5 kg. Mother noticed that baby was little lethargic, but there was no difficulty in feeding, no fever or any discharge from umbilicus noted. Urine and bowel output were also normal. There was no history of anemia or known heredity for hemolytic disorders in family members. Blood group of both the parents and baby was O +ve. Laboratory findings showed:
 - Serum total bilirubin: 9.2 mg/dL; Serum direct bilirubin: 1.0 mg/dL
 - Serum indirect bilirubin: 8.2 mg/Dl
 - Serum bilirubin level decreased after receiving phototherapy
 - a) What is the probable diagnosis?
 - b) Explain the biochemical basis of the disorder.
 - c) What are the characteristic clinical features of this disorder?
 - d) What are the complications of this disorder?

2. A 40-year-old woman living in hilly area presented with the chief complaints of swelling in neck, fatigue, deepening of her voice, dry skin, constipation, and cold intolerance. She also reported of weight gain in last few months. On examination, her body temperature was 96.4°F, pulse 58/min, regular, BP 110/60 mm Hg. She was moderately obese with puffy face, pale, cool, dry thick skin, delayed deep tendon reflex time. Her thyroid gland was slightly enlarged, firm, not nodular, mobile and nontender. On investigations, her thyroid profile was as follows:
 - Serum T3: 0.5 ng/mL (NRR:0.6-1.8 ng/mL)
 - Serum T4:3.0 pg/dL(NRR:3.2-12.6 ug/dL)
 - Serum TSH: 21 pIU/dL(NRR: 0.35-5.5pIU/dL)
 - a) What is the probable diagnosis?
 - b) Explain the biochemical basis of the disorder.
 - c) What are the characteristic clinical features of this disorder?
 - d) What are the complications of this disorder?

3. What is Glomerular Filtration Rate (GFR)? Describe Creatinine clearance test. Why creatinine clearance is better than urea clearance to assess glomerular function? (2+5+3)

4. Discuss metabolism of alcohol and biochemical changes in chronic alcoholic liver disease. (6+4)

5. Discuss the strategies to reduce pre analytical variation in a large hospital laboratory.
6. Compare and contrast the concepts of quality control, quality assurance and quality management with context to a clinical laboratory. Discuss proficiency testing in clinical laboratories. (5+5)
7. Early in the morning, 40 years old male patient came to emergency department with complaints of chest pain, perspiration and altered consciousness for 4 hours. He is a known case of diabetes mellitus since 10 years. He was taking medicine for the same irregularly. In history, it was found that he was chronic alcoholic and experienced chest pain a day before. (2+3+3+2)
 - a) What are chronic complications of DM?
 - b) Why uncontrolled diabetic mellitus increases the chances of atherosclerosis?
 - c) Which tests are preferred for the diagnosis of myocardial infarction?
 - d) How statins reduce cholesterol level?
8. A 3-year-old boy presented to the Pediatrics OPD with the chief complaints of fever for 1 week and acute onset of red colored urine early morning. No family history and no history of such episodes in the past were reported. No dysuria, bloody stool, hemoptysis or epistaxis, petechiae and extremity pain. On examination he had 105°F temperature, with a soft murmur on CVS examination. He had icterus and yellowish discoloration of skin. Laboratory investigations showed following results: Hemoglobin 8.8 gm%, low platelet count, raised WBC and neutrophil count. Coagulation parameters were normal. Serum indirect bilirubin and direct bilirubin were 6 and 1 mg/dL, respectively. Urine analysis revealed dark red brown urine with presence of protein and RBCs. (2+3+3+2)
 - a) What is the probable diagnosis?
 - b) Explain the biochemical basis of the disorder.
 - c) What are the characteristic clinical features of this disorder?
 - d) What are the complications of this disorder?
9. Explain the tests done in the Evaluation of female infertility.
10. Describe the endocrine functions of Adipose tissue.

POST-GRADUATE DEGREE (M.S.) EXAMINATION – JANUARY 2025

Time: 3 Hours

Max. Marks: 100

OTORHINOLARYNGOLOGY

PAPER – IV

(Pharyngology and Broncho-oesophagology including recent advances)

Q.P. Code: 1280

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

Question Number

Marks

LONG ESSAY QUESTIONS:

10 X 10 = 100

1. Explain middle ear implant and write a note on vibrant sound bridge.
2. Discuss the role of navigation system in endoscopic sinus surgery.
3. Discuss the role of oncogenes in pathogenesis of head and neck cancers.
4. Discuss various functional investigations in the management of Dysphagia
5. Write the Principle of osseointegration in management of head and neck surgery.
6. A 65-year-old uncontrolled Diabetic patient with Rhinocerebral Mucormycosis has presented to the ENT department. Mention the treatment options that can be used. Compare the advantage and disadvantages of liposomal amphotericin over conventional amphotericin. (4+6)
7. Discuss the Role of tumour biomarker in ENT
8. Discuss Facial Reanimation in the treatment of facial palsy.
9. A 52-year-old male with complaints of tinnitus in the right ear since 3 months, he noted no relief from pharmacotherapy. Enumerate the steps in further rehabilitation of this patient with a note on tinnitus retraining therapy. (5+5)
10. Discuss different approaches in Robotic Thyroidectomy
