MAHATMA GANDHI UNIVERSITY
of
MEDICAL SCIENCES & TECHNOLOGY
JAIPUR

Super Specialty Courses

SYLLABUS

DM – MEDICAL GASTROENTEROLOGY

Batch 2016-17

Notice

1. Amendment made by the Medical Council of India in Rules/Regulations of Post Graduate Medical Courses shall automatically apply to the Rules/Regulations of the Mahatma Gandhi University of Medical Sciences & Technology (MGUMST), Jaipur.

2. The University reserves the right to make changes in the syllabus/books/guidelines, fees-structure or any other information at any time without prior notice. The decision of the University shall be binding on all.

3. The Jurisdiction of all court cases shall be Jaipur Bench of Hon'ble Rajasthan High Court only.

Syllabus of DM / M.Ch. Courses
DM – MEDICAL GASTROENTEROLOGY (9300)

Selection of candidates:
There shall be a uniform entrance examination to all medical educational institutions at the Postgraduate level namely 'National Eligibility-cum-Entrance Test' for admission to postgraduate courses in each academic year and shall be conducted under the overall supervision of the Ministry of Health & Family Welfare, Government of India.

In order to be eligible for admission to Postgraduate Course for an academic year, it shall be necessary for a candidate to obtain minimum of marks at 50th percentile in the 'National Eligibility-Cum-Entrance Test for Postgraduate courses' held for the said academic year. However, in respect of candidates belonging to Scheduled Castes, Scheduled Tribes, and Other Backward Classes, the minimum marks shall be at 40th percentile. In respect of candidates with benchmark disabilities specified under the Rights of Persons with Disabilities Act, 2016, the minimum marks shall be at 45th percentile for General Category and 40th percentile for SC/ST/OBC.

The percentile shall be determined on the basis of highest marks secured in the All India Common merit list in National Eligibility-cum-Entrance Test for Postgraduate courses.

Provided when sufficient number of candidates in the respective categories fail to secure minimum marks as prescribed in National Eligibility-cum-Entrance Test held for any academic year for admission to Postgraduate Courses, the Central Government in consultation with Medical council of India may at its discretion lower the minimum marks required for admission to Post Graduate Course for candidates belonging to respective categories and marks so lowered by the Central Government shall be applicable for the academic year only.

The reservation of seats in Medical Colleges/institutions for respective categories shall be as per applicable laws prevailing in States/Union Territories. An all India merit list as well as State-wise merit list of the eligible candidates shall be prepared on the basis of the marks obtained in National Eligibility-cum-Entrance Test and candidates shall be admitted to Postgraduate Courses from the said merit lists only.

There shall be no admission of students in respect of any academic session beyond 31st August under any circumstances. The Universities shall not register any student admitted beyond the said date.

Eligibility:

S. No.	Area of Specialisation	Prior Requirement
1	DM Cardiology	MD (Medicine / Paediatrics)
2	DM Medical Gastroenterology	
3	DM Nephrology	
4	DM Neurology	
5	M.Ch. Cardio vascular & Thoracic Surgery	MS (Surgery)
6	M.Ch. Urology	
7	M.Ch. Neuro-Surgery	
8	M.Ch. Plastic Reconstructive Surgery	

Common Counseling:
There shall be a common counseling for admission to all Postgraduate Super specialty Courses (DM/ M.Ch.) in all Medical Educational Institutions on the basis of merit list of the National Eligibility-cum-Entrance Test.

Period of Training:
The period of training for obtaining DM/M.Ch Degrees shall be three completed years including the examination period.

Migration:
Under no circumstance, Migration/transfer of student undergoing any Super Specialty course shall be permitted by any University/ Authority.

Staff - Faculty:
Only those teachers who possess 6 years teaching experience out of which at least 2 years teaching experience as Assistant Professor gained after obtaining the higher specialty degree shall be recognized post graduate teacher.

No teacher shall be considered as a postgraduate teacher in any other institution during the period till the postgraduate course at the institute which has been granted permission considering him as a postgraduate teacher is recognized u/s 11(2) of the Indian Medical Council Act, 1956.

Minimum staff required (Super-speciality):
1- Professor
1- Associate Professor
1- Assistant Professor
1- Senior Resident
2- Junior Resident

Training Programme:
All the candidates joining the Post Graduate training programme shall work as 'Full Time Residents' during the period of training and shall attend not less than 80% (Eighty percent) of the imparted training during each academic year (Academic Term of 6 months) including assignments, assessed full time responsibilities and participation in all facets of the educational process.

No candidate shall be permitted to run a clinic/work in clinic/laboratory/nursing home while studying postgraduate super specialty course. No candidate shall join any other course or appear for any other examination conducted by this university or any other university in India or abroad during the period of registration.

Every institution undertaking Post Graduate training programme shall set up an Academic cell or a curriculum committee, under the chairmanship of a senior faculty member, which shall work out the details of the training programme in each speciality in consultation with other department faculty staff and also coordinate and monitor the implementation of these training Programmes.

The training programmes shall be updated as and when required. The structured training programme shall be written up and strictly followed, to enable the examiners to determine the

training undergone by the candidates and the Medical Council of India inspectors to assess the same at the time of inspection.

Post Graduate students shall maintain a record (log) book of the work carried out by them and the training programme undergone during the period of training including details of surgical operations assisted or done independently by M.Ch. candidates.

The Record (Log) Books shall be checked and assessed periodically by the faculty members imparting the training.

During the training for award of Degree / Superspecialty in clinical disciplines, there shall be proper training in Basic medical sciences related to the disciplines concerned; so also in the applied aspects of the subject; and allied subjects related to the disciplines concerned. In the Post Graduate training programmes including both Clinical and Basic medical sciences, emphasis has to be laid on Preventive and Social aspects. Emergency care, facilities for Autopsies, Biopsies, Cytopsies, Endoscopy and Imaging etc. shall also be made available for training purposes.

The Post Graduate students shall be required to participate in the teaching and training programme of undergraduate students and interns.

Training in Medical Audit, Management, Health Economics, Health Information System, basics of statistics, exposure to human behaviour studies, knowledge of pharmaco – economics and introduction to nonlinear mathematics shall be imparted to the Post Graduate students.

The teaching and training of the students shall include graded responsibility in the management and treatment of patients entrusted to their care; participation in Seminars, Journal Clubs, Group Discussions, Clinical Meetings, Grand Rounds, and Clinico-Pathological Conferences; practical training in Diagnosis and Medical and Surgical treatment; training in the Basic Medical Sciences, as well as in allied clinical specialitites.

The training programme shall be on the same pattern as for M.D. / M.S. in clinical disciplines; with practical training including advanced Diagnostic, Therapeutic and Laboratory techniques, relevant to the subject of specialization. Postgraduate Superspecialty Residents in Surgical Specialties shall participate in Surgical operations as well.

A postgraduate student of a postgraduate degree course in super specialities would be required to present one poster presentation, to read one paper at a national/state conference and to present one research paper which should be published/accepted for publication/sent for publication during the period of his postgraduate studies so as to make him eligible to appear at the postgraduate degree examination.

Enrolment and Registration:

Every candidate who is admitted to DM/MCh. course in Mahatma Gandhi Medical College & Hospital shall be required to get himself/herself enrolled and registered with the Mahatma Gandhi University of Medical Sciences & Technology upto November 30 of the year of admission without late fees upto December 31 of the year of admission with late fees after paying the prescribed eligibility and enrolment fees.

The candidate shall have to submit an application for the enrolment/eligibility along with the following original documents with the prescribed fees –

(a) MD/MS pass Marks sheet/Degree certificate issued by the University.

(b) Migration certificate issued by the concerned University (in case the University is other than the MGUMST).
(c) Date of Birth Certificate
(d) Certificate regarding registration with Rajasthan Medical Council / Medical Council of India / Other State Medical Council.

Examinations:
The examination shall be held at the end of three academic years (six academic terms). The academic term shall mean six months training period. The examination shall consist of: Theory and Clinical/Practical and Oral.

The examinations shall be organised on the basis of 'Marking system' to evaluate and to certify candidate's level of knowledge, skill and competence.

For passing DM/M.Ch. examination as a whole, a candidate shall secure not less than 50% marks in each head of passing which shall include (1) Theory (2) Clinical / Practical and Oral examination.

(1) **Theory:**
There shall be four theory papers of 3 hours duration and 100 marks each. Out of the four theory papers, one Paper-I shall be on 'Basic Sciences', and another Paper-IV on 'Recent Advances'. The theory examination shall be held in advance before the Clinical and Practical examination, so that the answer books can be assessed and evaluated before the commencement of the clinical/Practical and Oral examination.

Paper I and II will be set by one external examiner from outside of the state and paper III and IV by another external examiner from outside of the state. The external examiner, who is paper setter for paper I & II shall evaluate the answer books of paper II. The external examiner, who is paper setter for paper III & IV shall evaluate the answer books of paper III. The answer books of paper I & IV shall be evaluated by internal examiners. The answer books of paper IV shall be evaluated by the Head of the Department and the answer books of paper I shall be evaluated by the second Internal Examiner.

Candidates will be required to attempt all the questions in every question paper. In Paper I, Paper II and Paper III there will be 10 questions. Each question shall carry 10 marks. In Paper IV there will be 5 questions of 20 marks each.

Obtaining a minimum of 40% marks in each theory paper and not less than 50% cumulatively in all the four papers shall be compulsory to pass the examination.

Nomenclature of Papers:

Paper-I :	Basic Sciences as Related to Gastroenterology
Paper-II :	Practice of Gastroenterology Part-I (Clinical Gastroenterology including Paediatric Gastroenterology)
Paper-III :	Practice of Gastroenterology Part-II (Diagnostic and Therapeutic Gastroenterology including Intervention)
Paper-IV :	Recent Advances in Gastroenterology

(2) **Clinical / Practical and Oral:**
Clinical/Practical examination shall be conducted to test / aimed at assessing the knowledge and competence of the candidate for undertaking independent work as a specialist / teacher. Practical examination shall consist of carrying out special

investigative techniques for Diagnosis and Therapy. M.Ch candidates shall also be examined in surgical procedures. Oral examination may be comprehensive enough to test the candidate's overall knowledge and competence about the subject, investigative procedures, therapeutic technique and other aspects of the specialty, which shall form a part of the examination.

There shall be one long case of 150 marks, two short cases of 75 marks each and oral examination of 100 marks. Obtaining of 50% marks in Clinical / Practical and Oral examination shall be mandatory for passing the Clinical / Practical and Oral examination.

Result:
For passing DM/M.Ch. Examination, a candidate will be required to obtain at least 40% marks in each theory paper, 50% marks in the aggregate of all the four theory papers and 50% marks in the aggregate of Clinical / Practical and Oral examination separately. A candidate failing in any theory paper or in the aggregate of all four theory papers or Clinical / Practical and Oral examination shall have to repeat the whole DM/M.Ch. examination.

Grace Marks:
No grace marks will be provided in DM/M.Ch. examinations.

Revaluation / Scrutiny:
No Revaluation shall be permitted in the DM/M.Ch. examinations. However, the student can apply for scrutiny of the answer books as per University Rules

Examiners:
As per the Amendment Notification of the MCI dated June 5, 2017, no person shall be appointed as an internal examiner in any subject unless he/she has three years experience as recognized PG teacher in the concerned subject. For external examiners, he/she should have minimum six years of experience as recognized PG teacher in the concerned subject.

For all Post Graduate Super specialties examinations, the minimum number of Examiners shall be four, out of which at least two (50%) shall be External Examiners, who shall be invited from other recognised universities from outside the State.

Number of Candidates:
The maximum number of candidates to be examined in Clinical / practical and Oral on any day shall not exceed three for D.M./M.Ch examinations.

Number of Examinations:
The university shall conduct not more than two examinations in a year, for any subject, with an interval of not less than 4 and not more than 6 months between the two examinations.

DM – MEDICAL GASTROENTEROLOGY (9300)

Duration : 3 Years
Admission eligibility : MD (Medicine)

GOALS

The goal of DM course is to produce a competent Gastroenterologist who:

- Recognizes the health needs of adults and carries out professional obligations in keeping with principles of National Health Policy and professional ethics;
- Has acquired the competencies pertaining to gastroenterology that are required to be practiced in the community and at all levels of health care system;
- Has acquired skills in effectively communicating with the patients, family and the community;
- Is aware of the contemporary advances and developments in medical sciences.
- Acquires a spirit of scientific enquiry and is oriented to principles of research methodology; and
- Has acquired skills in educating medical and paramedical professionals.

OBJECTIVES

At the end of the DM course in Gastroenterology, the student should be able to:

- Recognize the key importance of medical problems in the context of the health priority of the country;
- Practice the specialty of gastroenterology in keeping with the principles of professional ethics;
- Identify social, economic, environmental, biological and emotional determinants of adult gastroenterology diseases and know the therapeutic, rehabilitative, preventive and promotion measures to provide holistic care to all patients;
- Take detailed history, perform full physical examination and make a clinical diagnosis;
- Perform and interpret relevant investigations (Imaging and Laboratory);
- Perform and interpret important diagnostic procedures;
- Diagnose gastroenterological illnesses in adults based on the analysis of history, physical examination and investigative work up;
- Plan and deliver comprehensive treatment for illness in adults using principles of rational drug therapy;
- Plan and advise measures for the prevention of gastroenterological diseases;
- Plan rehabilitation of adults suffering from chronic illness, and those with special needs;
- Manage gastroenterological emergencies efficiently;
- Demonstrate skills in documentation of case details, and of morbidity and mortality data relevant to the assigned situation;
- Demonstrate empathy and humane approach towards patients and their families and respect their sensibilities;
- Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities.
- Develop skills as a self-directed learner, recognize continuing educational needs; use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based medicine;
- Demonstrate competence in basic concepts of research methodology and epidemiology;
- Facilitate learning of medical/nursing students, practicing physicians, para-medical health workers and other providers as a teacher-trainer;

- Organize and supervise the desired managerial and leadership skills;
- Function as a productive member of a team engaged in health care, research and education.

SYLLABUS

At this level of training, insistence of a syllabus may not be appropriate. Trainees should acquire an overall knowledge in Gastroenterology by reading standard textbooks, monographs and peer reviewed journals dealing with Gastroenterology, Hepatology, Pancreatology and related Basic Sciences and Epidemiology. A core syllabus is however, recommended as in **appendix I,** but it does not purport to be either comprehensive or restrictive. Furthermore, it is likely to change from time to time.

TEACHING

The training program should include close supervision of clinical work and assessment in the initial period followed gradually by greater delegation of responsibility. Trainees must maintain a logbook and staged evaluation must be documented by the department.

a) **Clinical Teaching**

In service training should be imparted through supervised outpatients and in-patients care by trainees. Trainees must be exposed to clinical features, clinical data analysis, investigative work-up, clinical decision making, emergency care and ethical aspects of all common diseases in the field of gastroenterology and hepatology.

Clinical case presentations by trainees and ward rounds with faculty must serve as important media for training in the art of eliciting history and physical signs, synthesis of information, decision making and treatment of the patients.

b) **Procedures on patients**

Several diagnostic and therapeutic procedures are done on patients in the specialty of gastroenterology, most prominent of them being endoscopic procedures. They have to be taught to the trainees in a graded and staged manner under close supervision. Desirable minimum numbers of the endoscopic procedures to be done by the trainees are shown in the table below, but they may vary from center to center depending on the facilities and patient load available.

Table : Proposed list of minimum number of procedures

Procedures	**No.**
Upper GI Endoscopy	200
Side Viewing duodenoscopy	25
Endoscopic variceal ligation	10
Endoscopic sclerotherlapy	50
Proctosigmoidoscopy (rigid)	100
Pile banding	10
Flexible sigmodoscpy	25
Full length colonoscopy	10
Polypectomy	5
Endoscopic retrograde cholangio-pancreatography	25*
ERCP with papillotomy	5*

*May only assist

c) **Imaging and laboratory**
Diagnostic techniques like radiological and other imaging and laboratory techniques relevant to patients with gastroenterological diseases must receive attention. Trainees must be exposed to the theory behind these techniques and must be demonstrated all the tests. This may be organized either by arranging periodic workshops or through rotation in different areas performing these techniques. Trainees need to be familiarized by the trainees and improvement of their critical faculties.

d) **Didactic and theoretical teaching**
Attempts must be made to cover all particularly common gastroenterological diseases and those that gain importance through recent research and information in pathogenesis., diagnosis and therapy. These topics should be organized in such a way that every trainee gets exposed to most of these areas during his training. However it is unnecessary to aim at a comprehensive text-book type coverage of all topics at this level of training.

e) **Basic sciences**
DM trainees ought to be familiar with basic science aspects of techniques and diseases that they encounter such as molecular biology, biochemistry, physics, etc.

APPENDIX I

RECOMMENDED CORE SYLLABUS

Basic Sciences

- Immune system of the gastrointestinal tract (GIT) and its importance in various GI disorders.
- Molecular biology in relation to GIT
- Genetic diseases of the GIT and the liver
- Gene therapy
- GI tumors and tumor biology
- Gastrointestinal hormones in health and diseases
- Embryology of the gut, liver, pancreas and congenital anomalies

Miscellaneous

- Upper and lower gastro-intestinal bleeding
- Gastrointestinal tuberculosis
- HIV and the GIT, hepatobiliary and pancreatic systems
- GIT and liver in systemic diseases
- Cutaneous manifestations of GI diseases
- Vascular diseases of the GIT
- Gastrointestinal side effects of drugs especially NSAIDs
- Gastro-intestinal symptoms physiology and interpretation
    a. Nausea, vomiting
    b. Pain abdomen
    c. Diarrhoea
    d. Constipation
    e. Dysphagia
    f. Jaundice

Esophagus

- Basic anatomy, histology and physiology
- Congenital anomalies
- Motility of the esophagus and motor disorders
- Mechanism of deglutition and dysphasia
- Approach to a patient with dysphasia
- Gastro-esophageal reflux disease
- Tumors of the esophagus
- Esophageal webs, membranes and diverticulum
- Management of benign and malignant esophageal strictures
- Esophagus and systemic diseases
- Infectious diseases of the esophagus
- Foreign bodies in the esophagus and stomach
- Esophageal perforation
- Drug induced esophagitis

Stomach

- Anatomy, histology, functions
- Physiology of acid and bicarbonate secretion in health and diseases
- Defence mechanisms against acid and peposin

- Gastroduodenal motor function in health and diseases.
- Gastritis (nonspecific and specific)
- Helicobacter pylori infection
- Peptic ulcer
- Dyspepsia
- Stress and stomach
- Gastric hypersecretory states including Zollinger Ellison syndrome
- Ulcer complications and their management
- Surgery for peptic ulcer
- Post gastrectomy complication
- Bezoars
- Tumors of the stomach
- Diverticuli and hernia of the stomach

Small Intestine

- Anatomy, blood supply, histology
- Motility of the small intestine
- Congenital anomalies
- Normal absorption of the nutrients
- Intestinal electrolyte absorption and secretion
- Malabsorption syndromes
- Pathophysiology, manifestations and approach
- Celiac sprue
- Infection related diseases
    a. Intestinal microflora in health and diseases
    b. Tropical sprue
    c. Whipple's disease
    d. Infectious diarrhoea and food posoning
    e. Parasitic diseases
- Small intestinal ulcers
- Short bowel syndrome and intestinal transplantation.
- Eosinophilic gastroenteritis
- Food allergies
- Intestinal obstruction and pseudo-obstruction
- Short bowel syndrome
- Acute appendicitis
- Malrotation of the gut
- Bezoars
- Management of diarrhoea
- GI lymphomas
- Small intestinal tumors
- Small intestinal transplantation

Colon

- Basic anatomy blood supply, histology and functions
- Motility of the colon and disorders of motility
- Congenital anomalies
- Megacolon
- Constipation
- Colonic pseudo-obstruction

- Fecal incontinence
- Antibiotic associated diarrhoea
- Inflammatory bowel disease
    a. Ulcerative colitis
    b. Crohn's disease
    c. Indeterminate colitis
    d. Ileostomies and its management
- Diverticular disease of the colon
- Radiation entero-colitis
- Colonic polyps and polyposis syndromes
- Malignant diseases of the colon
- Other inflammatory diseases of colon including
    a. Solitary rectal ulcer syndrome
    b. Diversion colitis
    c. Collagenous and microscopic colitis
    d. Non specific ulcerations of the colon
    e. Malakoplakia
    f. Pneumatoses cystoids intestinalis
- Hemorrhoids
- Diseases of the anorectum

Pancreas

- Anatomy, physiology, blood supply, developmental anomalies
- Physiology of the pancreatic secretion
- Pancreatic function tests
- Acute pancreatitis
- Recurrent acute pancreatitis
- Chronic pancreatitis
- Malignancies of the pancreas (Exocrine and endocrine)
- Cystic fibrosis and other childhood disorders of the pancreas
- Hereditary pancreatitis
- Pancreatic transplantation

Biliary Tree

- Anatomy, Physiology
- Physiology of bile formation and excretion
- Enterohepatic circulation
- Bilirubin metabolism.
- Approach to a patients with jaundice
- Gallstones, its complications, and management
- Acute acalculous cholecystitis
- Miscellaneous disorders of the gallbladder
- Acute cholangitis
- Benign biliary structure
- Benign and malignant neoplasms of the biliary system.
- Endoscopic management of biliary obstruction.
- Motility and dysmotility of the biliary system and sphincter of Oddi dysfunction
- Congenital diseases of the biliary systems

Liver

- Anatomy, physiology, blood supply
- Functions of the liver
- Microcirculation of liver
- Liver function tests
- Portal hypertension
  a. Extrahepatic portosplenic vein obstruction
  b. Non cirrhotic portal fibrosis
  c. Cirrhosis
- Acute viral hepatitis
- Chronic hepatitis
- Fulminant hepatic failure
- Subacute hepatic failure
- Cirrhosis of liver
- Ascites
- Hepatorenal syndrome
- Autoimmune liver disease
- Metabolic liver disease
- Sclerosing cholangitis - primary and secondary
- Primary biliary cirrhosis
- Hepatic venous outflow tract obstruction
- Fibrocystic diseases of the liver
- Wilson's disease
- Hemochromatosis
- Liver in porphyria
- Hepatic tumors
- Infections of the liver
- Liver in oregnancy
- Liver in congestive heart failure
- Liver biopsy
- Liver transplantation and artificial liver support

Peritorium and Retroperitoneum

- Ascites
- Chronic peritonitis
- Budd-Chiari syndrome
- Malignant ascites
- Diseases of the retroperitoneum

Nutrition

- Normal nutritional requirements
- Assessment of nutritional status
- Protein energy malnutrition
- Manifestations and management of nutritional deficiency and excess
- Nutritional support in various GI disorders (malabsorption, acute and chronic pancreatitis, inflammatory bowel disease)

Vascular Diseases of the GI Tract

GI Radiology

Reading and interpreting the common x-ray films including

- X-ray films of the abdomen
- Barium studies, ultrasound examination
- CT scans, MR scans and angiography and ERCP films

GI Pathology
Reading and interpreting histological slides of common gastrointestinal and liver diseases.

Endoscopic Training
Endosocpic training is an integral part of training in superspecialty of gastroenterology. A trainee is supposed to have knowledge of instruments and its application.
- Endoscopes
- Accessories
- Sterlization of endoscopes and accessories
- Electrosurgical instrument
- Keeping of endoscopes and accessories

SUGGESTED BOOKS AND JOURNALS

Textbooks
- Gastrointestinal and Liver Disease- Sleisenger & Fordtran
- Diseases of the Liver - Eugene R. Schiff
- Diseases of the Liver & Biliary System- Sheila Sherlock
- Yamada textbook of Gastroenterology-YAMADA
- Sivag's textbook of GI Endoscopy- SIVAG
- Gastro-intestinal Endoscopy- P. Cotton

Journals
- Gastroenterology
- Hepatology
- GUT
- Journal of Hepatology
- American Journal of Gastroenterology
- Gastrointestinal Endoscopy
- Seminars in Liver disease.
- Indian Journal of Gastroenterology
- New England Journal of Medicine
- Lancet
- Tropical Gastroenterology

MODEL PAPER

DM-9301 **Gastro.-I**

DM Examination Month, Year
MEDICAL GASTROENTEROLOGY

Paper-I
Basic Sciences as Related to Gastroenterology

Time : Three Hours
Maximum Marks : 100

Attempt all questions
All questions carry equal marks (**10 marks each**)
Draw diagrams wherever necessary

Write a short note on:

Q.1 Pathophysiology of swallowing.

Q.2 Mechanism and control of Gastric Secretions.

Q.3 Pathophysiology of functional dysphasia.

Q.4 Ultrastructure of enterocyte

Q.5 Vitamin B 12 Absorption.

Q.6 Blood supply of colon.

Q.7 Giardia

Q.8 Pancreatic Stone Protein.

Q.9 T Cell differentiation pathway.

Q.10 Microcirculation of liver.

MODEL PAPER

DM-9302 **Gastro.-II**

DM Examination Month, Year
MEDICAL GASTROENTEROLOGY

Paper-II
Practice of Gastroenterology Part-I
(Clinical Gastroenterology including Paediatric Gastroenterology)

Time : Three Hours
Maximum Marks : 100

Attempt all questions
All questions carry equal marks (**10 marks each**)
Draw diagrams wherever necessary

Write a short note on :

Q.1 Zenkers Diverticulum.

Q.2 Helicobacter Pylori & GERD.

Q.3 Genetic of CRC

Q.4 Osteoporosis in IBD.

Q.5 Pathogeneis of Diarrhea in diabetics.

Q.6 Genetics of celiac disease & its clinical implications.

Q.7 Prognostic factors in acute pancreatitis.

Q.8 How to do nutritional assessment.

Q.9 Scoring system for predicting survival in CLD patient.

Q.10 Determinants of outcome after Chronic Hepatitis C treatment.

MODEL PAPER

DM-9303 **Gastro.-III**

DM Examination Month, Year
MEDICAL GASTROENTEROLOGY

Paper-III
Practice of Gastroenterology Part-II
(Diagnostic and Therapeutic Gastroenterology including Intervention)

Time : Three Hours
Maximum Marks : 100

Attempt all questions
All questions carry equal marks (**10 marks each**)
Draw diagrams wherever necessary

Write a short note on :

Q.1 Diagnosis & management of cardiac achlasia.

Q.2 Gastric Outlet Obstruction - Diagnosis & management.

Q.3 GIST - Diagnosis & Management.

Q.4 Evaluation of a patient with Fulminant colitis.

Q.5 Evaluation of a patient with chronic GI blood loss.

Q.6 Refractory Celiac Disease - Diagnosis & management.

Q.7 Evaluation of a case with recurrent Pancreatitis.

Q.8 Evaluation and Management of Chronic Hepatitis B.

Q.9 Evaluation of non-responders to standard therapy for CHC.

Q.10 Evaluation and Management of Renal failure in cirrhosis.

MODEL PAPER

DM-9304 **Gastro.-IV**

DM Examination Month, Year
MEDICAL GASTROENTEROLOGY

Paper-IV
Recent advances in Gastroenterology

Time : Three Hours
Maximum Marks : 100

Attempt all questions
All questions carry equal marks (**20 marks each**)
Draw diagrams wherever necessary

Write on :

Q.1 Directly acting agents against HCV

Q.2 New therapies for advanced HCC

Q.3 Interventional EUS

Q.4 NOTES

Q.5 Proteomics