MAHATMA GANDHI UNIVERSITY
of
MEDICAL SCIENCES & TECHNOLOGY
JAIPUR

Super Specialty Courses

SYLLABUS
DM Neonatology (DM11)

Edition 2021-22

Notice

1. Amendment made by the National Medical Commission (NMC) 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 NEONATOLOGY (DM11)

Selection of Candidates:

There shall be a uniform entrance examination to all medical educational institutions at the post Postgraduate level namely 'National Eligibility-cum-Entrance Test' for admission to super specialty 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 super specialty 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 super specialty 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 super specialty Courses, the Central Government in consultation with Medical council of India may at its discretion lower the minimum marks required for admission to super specialty 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 super specialty 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:

Candidates must meet the eligibility criteria required to get admission to DM courses through NEET-SS.

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-specialty):
1- Professor
1- Associate Professor
1- Assistant Professor
1- Senior Resident
2- Junior Resident

Training Programme:
All the candidates joining the super specialty 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 t super specialty raining 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 specialty 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.

Super specialty students shall maintain a record (log) book of the work carried out by them and the training programme undergone during the period of training.

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

During the training for award of Degree / Super specialty 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 super specialty 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 super specialty students shall be required to participate in the teaching and training programme of post graduate, 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 specialties.

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.

A postgraduate student of a postgraduate degree course in super specialties 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 studies so as to make him eligible to appear at the super specialty 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 organized 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.

The paper wise distribution of the Theory Examination shall be as follows:

Paper-I Basic sciences as applied to neonatology and perionatology; research methods

Paper-II Principles and Practice of neonatology

Paper-III Community neonatology; perinatology; national MCH programmes; allied disciplines such as; neonatal surgery; neurodevelopment follow up, rehabilitation etc

Paper-IV Recent advances in Neonatology.

(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. 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 recognized 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 NEONATOLOGY (DM11)

Duration: 3 Years

Admission Eligibility:
Candidates who have passed M.D. Pediatrics approved by Medical Council ofIndia (MCI)

- Candidates who have passed Diplomate of National Board (DNB) in Pediatrics.
- Candidates who have appeared for MD/DNB Pediatrics exam and expecting results may also submit their application subject to the condition that they pass their qualifying examination before admission.

Goals
The goal of DM Neonatology course is to provide advanced training in Neonatology to produce competent super-specialists who are able to provide clinical care of the highest order to the newborn infants, and serve as future teachers, trainers, researchers and leaders in the field of Neonatology.

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

1. Analyze neonatal health problems scientifically, taking into account the biological basis as well as the socio-behavioral epidemiology of perinatal- neonatal disease, and advice and implement strategies aimed at prevention of neonatal morbidity and mortality.
2. Provide primary, secondary and tertiary care to all newborn infants including intensive care of the highest standard to the critically sick and the very low birth weight neonates using advanced therapeutic and supportive modalities and skills.
3. Implement a comprehensive follow up and early intervention programme for the 'at risk' newborn infants, and plan, counsel and advise rehabilitation of the neuro developmentally challenged infants.
4. Take rational decisions in the face of ethical dilemmas in neonatal-perinatal practice.
5. Exhibit communication skills of a high order and demonstrate compassionate attributes befitting a caring neonatologist.
6. Plan and carry out research in neonatal health in clinical, community and laboratory settings.
7. Teach newborn care to the medical and the nursing students as well as grassroots health functionaries, and develop learning resource materials for them.
8. Plan, establish and manage level II and level III neonatal units independently.
9. Use and maintain the essential neonatal equipment and keep abreast with advances in newborn care technology.
10. Organize newborn care in the community and at the secondary level of health system, and play the assigned role in the national programmes aimed at the health of mothers and their infants.
11. Work as a productive member of the interdisciplinary team consisting of obstetricians, pediatricians, pediatric surgeons, other doctors, nurses, and grassroots functionaries

providing care to the pregnant mother, the fetus and the newborn in any setting of health care system.

12. Seek and analyze new literature and information on neonatology, update the concepts, and practise evidence-based neonatology.

Postings

Overview

The total period of DM course is 36 months. Of this, at least three fourths (27 months) will be spent in the newborn service, 6 months will be meant for essential rotations in related specialties and the rest 3 months will be apportioned for either optional rotations or for the newborn service.

Newborn services

The candidates will have at least 27 months of posting in the newborn services. The candidates must get adequate exposure to neonatal follow up, neonatal emergencies, delivery room care of neonates and acquisition of practical skills (specified in Annexure I).

Essential Rotations

- Perinatology – obstetrics (Deptt. of Obstetrics-Gyenecology) : 2 months
- Neonatal surgery (Deptt of Pediatric Surgery) : 1 months
- Elective* : 3 months

*The candidates can undertake upto 3 months' elective rotation at the parent or other institutions in the country or abroad at centres approved by the Department.

Optional rotations

The departments will have the flexibility of additional rotations for upto 3months in the above-mentioned disciplines or in other relevant areas such as neonatal cardiology/cardiac surgery, rehabilitation service, genetics perinatal pathology, imaging, anaesthesiology, neonatal ophthalmology, epidemiology / bostatistics, informatics and education technology etc. depending upon the strength of the disciplines and functional requirements at the concerned institutions. [Under no circumstances however, would the training in neonatal services be of less than 27 months i.e three fourths of thetotal course.]

Learning Opportunities

Learning in DM neonatology will essentially be self-directed and will take place while working in various areas and through interactions in the rounds.

Following minimum formal sessions are recommended in order to facilitate and supplement the efforts of the faculty and students:

- Journal club (once in 2 weeks)
- Perinatal round (once in 2 weeks)
- Seminar (once in 2 weeks)
- Clinical case discussion (once a week)

In addition, depending on the strength of the institution's sessions or imaging,pathology, microbiology, as well as interdepartmental seminars may be undertaken.

The candidate must attend continuing education symposia, workshops and conferences including meetings of the National Neonatology Forum, workshopsneonatal resuscitation and ventilation etc.

One paper for publication in indexed journal(s) before appearing for the final DMexamination is desirable.

Log Book

The candidate is expected to maintain a Log Book of all his/her activities with respect to (1) Bio-data (2) Complete List of Postings with periods and dates (3) Interesting cases seen and worked up during the period of posting (4) List of Short Reviews presented (5) List of Long Reviews presented (6) List of Journals reviewed (7) List of Cases presented and discussed in Bed-side clinics (8) List and abstracts of presentations in Scientific Society, Conferences, PG Seminars, CPCs etc. (12) Abstracts and lists of papers published or sent for publication. (13) Any other research projects undertaken. (14) Any other interesting detail.

This Log Book would be scrutinized and certified by the Head of Department and other Consultants and presented to the external examiners at the time of the final examination.

DM (Neonatology) Programme

LIST OF SKILLS

CLINICAL

- Neonatal examination, anthropometry and developmental assessment
- Neonatal resuscitation
- Neonatal ventilation: CPAP, IMV; newer modes of ventilation
- Blood sampling: Capillary, venous, arterial
- Insertion of peripheral venous, umbilical venous and umbilical arterialcatheters
- Monitoring: invasive, non-invasive
- Enteral feeding (katori-spoon, gavage, breast)
- Lactation management
- Parenteral nutrition
- Lumbar puncture and ventricular tap
- Placing of 'chest tube'
- Exchange transfusion
- Bed side tests: shake test, sepsis screen, hematocrit, urine examination, CSF examination, Kleihauer technique, Apt test etc.
- Neonatal drug therapy
- Nursery housekeeping routines and asepsis procedures
- Universal precautions
- Handling, effective utilization and troubleshooting of neonatal equipment.

Communication

- Communication with parents, families and communities

Education/Training

- Teaching skills: lectures, tutorials
- Participatory and small group learning skill
- Principles of educational objectives, assessment and media
- Preparing learning resource material

Self-Directed Learning

- Learning needs assessment, literature search, evaluating evidence

Research Method

- Framing of research question, designing and conducting study, analyzing and interpreting data and writing a paper.

Syllabus for DM Neonatology Course

A) Basic Sciences

- Basic genetics
- Fetal and neonatal immunology
- Mechanism of disease
- Applied anatomy and embryology
- Feto-placental physiology
- Neonatal adaptation
- Development and maturation of lungs, respiratory control, lung functions,ventilation, gas exchange, ventilation perfusion.
- Physiology and development of cardiovascular system, developmental defects, physiology and hemodynamics of congenital heart disease.
- Fetal and intrauterine growth.
- Development and maturation of nervous system, cerebral blood flow, bloodbrain barrier.
- Fetal and neonatal endocrine physiology
- Developmental pharmacology
- Developmental hematology, bilirubin metabolism
- Renal physiology
- Physiology of gastrointestinal tract, digestion, absorption.
- Electrolyte balance
- Metabolic pathways pertaining to glucose, calcium and magnesium
- Biochemical basis of inborn errors of metabolism

General Topics

- Research methodology
- Biostatistics
- Ethics in perinatology/neonatology
- Principles of education (objectives, curriculum, assessment and use of media)
- Computer, information technology, internet

Perinatology

- Perinatal and neonatal mortality, morbidity, epidemiology.
- High risk pregnancy: detection, monitoring and management.
- Fetal monitoring, clinical, electronic; invasive, and non-invasive
- Intrapartum monitoring and procedures
- Assessment of fetal risk, and decision for termination of pregnancy
- Diagnosis and management of fetal diseases
- Medical diseases affecting pregnancy and fetus, psychological and ethical considerations
- Fetal interventions.

- Fetal origin of adult disease

Neonatal Resuscitation

B) NEONATAL VENTILATION

Blood Gas and Acid Base Disorders

C) Neonatal Assessment And Follow Up

- Assessment of gestation, neonatal behaviour, neonatal reflexes
- Developmental assessment, detection of neuromotor delay, stimulationtechniques
- Immunization

Body Systems

i) Respiratory System

- Neonatal airways: physiology, pathology; management
- Pulmonary diseases: Hyaline membrane disease, transient tachypnea, aspiration pneumonia, pulmonary air leak syndromes, pulmonary hemorrhage, developmental defects
- Oxygen therapy and its monitoring
- Pulmonary infections
- Miscellaneous pulmonary disorders

Cardiovascular system

- Fetal circulation, transition from fetal to neonatal physiology
- Examination and interpretation of cardiovascular signs and symptoms
- Special tests and procedures (Echocardiography, angiography)
- Diagnosis and management of congenital heart diseases
- Rhythm disturbances
- Hypertension in neonates
- Shock: pathophysiology, monitoring, management.

Gastrointestinal system

- Disorders of liver and biliary system.
- Bilirubin metabolism
- Neonatal jaundice: diagnosis, monitoring, management, phototherapy,exchange transfusion.
- Prolonged hyperbilirubinemia
- Kernicterus
- Congenital malformations
- Necrotizing enterocolitis

Nutrition

- Fetal nutrition

- Physiology of lactation
- Breast feeding
- Lactation management, breast milk banking, maternal medications and nursing
- Parenteral nutrition
- Vitamins and micronutrients in newborn health

Renal system

- Developmental disorders
- Renal functions
- Fluid and electrolyte management
- Acute renal failure (diagnosis, monitoring, management).

Endocrine and metabolism

- Glucose metabolism, hypoglycemia, hyperglycemia
- Calcium disorders
- Magnesium disorders
- Thyroid disorders
- Adernal disorders
- Ambiguous genitalia
- Inborn errors of metabolism

Hematology

- Physiology
- Anemia
- Polycythemia
- Bleeding and coagulation disorders
- Rh hemolytic disease

Neurology

- Clinical neurological assessment
- EEG, ultrasonography, CT scan
- Neonatal seizures
- Intracranial hemorrhage
- Brain imaging
- Hypoxic ischemic encephalopathy
- Neuro-muscular disorders
- Degenerative diseases
- CNS malformation

Surgery and orthopedics

- Diagnosis of neonatal surgical conditions
- Pre and post operative care

- Neonatal anesthesia
- Metabolic changes during anesthesia and surgery
- Orthopedic problems

Neonatal infections

- Intrauterine infections
- Superficial infections
- Diarrhea
- Septicemia
- Meningitis
- Osteomyelitis and arthritis
- Pneumonias
- Perinatal HIV
- Miscellaneous infective disorders including HBV and candidemia

Neonatal Imaging

- X-rays, ultrasound, MRI, CT scan etc.

Neonatal ophthalmology

- Developmental aspects
- Retinopathy of prematurity
- Sequelae of perinatal infections

Neonatal Dermatology

I) Transport of neonates

Neonatal procedures

J) Developmental assessment and follow up

Organization of neonatal care

xviii) Community neonatology

- Vital statistics, health system;
- Causes of neonatal, perinatal death Neonatal care priorities
- Care at secondary level of care
- Care at primary health centre
- Role of different health functionaries
- National programmes

Reference Book & Journals

Books – References

1. Taeusch HW, Ballard RA. Diseases of the newborn.
2. Avery GB, Fletcher MA. Neonatology Pathophysiology and Management of the Newborn.
3. Rennie M, Robertson NRC. Textbook of Neonatology
4. Singh M. Care of the newborn
5. Clotherty's Manual of Neonatal Care
6. Klaus MH, Fanaroff AA. Care of the high-risk neonate
7. Remington JS, Klein JO. Infectious diseases of the fetus and newborn infant
8. Goldsmith JP, Karotkin EH. Assisted ventilation of the neonate
9. Jones KL. Smith's recognizable patterns of human malformation

Journals

- Clinics in Perinatology
- Archives of diseases of childhood
- Journal of pediatrics
- Pediatrics
- Pediatric Clinics of North America
- Indian Pediatrics
- Indian Journal of Pediatrics
- Journal of Neonatology (National Neonatology Forum of India)
- Seminars in neonatology
- Tropical pediatrics

Note: Books and Journals mentioned above are suggestive. Students can refer to any other booksand Journals. Refer to the most recent edition of the books and Journals

Annexure I

Postgraduate Student Appraisal Form

Name of the Department/Unit :
Name of the PG Student :
Period of Training : FROM……TO……

Sr. No.	Particulars	Not Satisfactory	Satisfactory	More Than Satisfactory	Remarks
		1 2 3	4 5 6	7 8 9	
1.	Journal based / recent advances learning				
2.	Patient based /Laboratory or Skill based learning				
3.	Self-directed learning and teaching				
4.	Departmental and interdepartmental learning activity				
5.	External and Outreach Activities / CMEs				
6.	Thesis / Research work				
7.	Log Book Maintenance				

Publications **Yes/ No**

Remarks* _____

_____

_____

*REMARKS: Any significant positive or negative attributes of a postgraduate student to be mentioned. For score less than 4 in any category, remediation must be suggested.
Individual feedback to postgraduate student is strongly recommended.

SIGNATURE OF ASSESSEE SIGNATURE OF CONSULTANT SIGNATURE OF HOD

MODEL PAPER

DM11301 **Basic.Sc.-I**

DM Examination Month, Year

NEONATOLOGY

Paper-I

Basic Sciences as applied to Neonatology; Research Methodology

Time: Three Hours
Maximum Marks: 100

Attempt all questions
Each question carries 10 marks
Draw diagrams wherever necessary

1. Evidence based data on the usefulness of Kangaroo Mother Care and steps topromote KMC in the community.

2. Pulmonary graphics – physiology and interpretation

3. Analgesia and sedation in ventilated neonates.

4. Metabolic consequences of intra uterine growth restriction

5. Indices of Neonatal health care

6. Gene therapy – clinical applications

7. Define with examples

- P value
- Standard Deviation
- Correlation Coefficient

8. New born screening

9. Case control studies

10. Direct hyperbilirubinemia in newborn

MODEL PAPER

DM11302 **Pri.Pra.-II**

DM Examination Month, Year

NEONATOLOGY

Paper II

Principle and Practice of Neonatology

Time: Three Hours
Maximum Marks: 100

Attempt all questions
Each question carries 10 marks
Draw diagrams wherever necessary

1. Discuss post resuscitation strategies to avoid ongoing injury following intra partum hypoxic ischemic insult
2. Newer diagnostic test for the early onset sepsis
3. Briefly discuss pathophysiology of hypotension in preterm and outline themanagement
4. How will you investigate refractory hypoglycemia and outline the management?
5. Approach to a neonate with acute renal failure.
6. Pathogenesis of periventricular leucomalacia
7. Delivery room strategies with specific reference to respiratory support
8. The late preterm neonate
9. Pathogenesis of Meconium aspiration
10. Problems of Infants of diabetic mothers.

MODEL PAPER

DM11303 **Peri.-III**

DM Examination Month, Year

NEONATOLOGY

Paper III

Perinatology, Neonatal sub specialties and Community Neonatology

Time: Three Hours
Maximum Marks: 100

Attempt all questions
Each question carries 10 marks
Draw diagrams wherever necessary

1. Prevention and treatment of neural tube defects
2. Ophthalmic complications of perinatal outcome and its impact in long termfollow up
3. Cost of a low-birth-weight baby – long term economics
4. Perinatal aspects of iron metabolism
5. Antenatal Doppler evaluation and implication to the fetus and neonate
6. Medication errors – Recognition, definition and prevention
7. Home based newborn care vs facility based new born care
8. Newborn skin – Role in preventing infection and Role of skin cleansingstrategies to prevent infection.
9. Maternal medications and fetal adverse outcome
10. Congenital Toxoplasmosis – Diagnosis and treatment

MODEL PAPER

DM11304 **Rec.Adv.-IV**

DM Examination Month, Year

NEONATOLOGY

Paper IV

Recent Advances in Neonatology

Time: Three Hours
Maximum Marks: 100

Attempt all questions
Each question carries 20 marks
Draw diagrams wherever necessary

1. Oxidative stress in perinatal asphyxia
2. Liquid ventilation
3. Therapeutic Hypothermia
4. Intrauterine fetal therapy
5. Nitric oxide therapy