

**National Board of Examinations**  
**REVISED CURRICULUM FOR COMPETENCY BASED TRAINING OF DNB**  
**CANDIDATES**

**ANAESTHESIA**  
**2006**



National Board of Examinations  
(Ministry of Health & Family Welfare, Govt. of India)  
Mahatma Gandhi Marg, Ansari Nagar, New Delhi-110029  
Ph: 011 26589090 • Fax : 011 26589781  
Website : [www.natboard.nic.in](http://www.natboard.nic.in)

## *Preface*

*The National Board of Examination was established in 1975 with the primary objective of improving the quality of the Medical Education by elevating the level and establishing standards of post graduate examinations in modern medicine on all India basis. There are more than 450 N.B.E accredited institutions/ Hospitals , imparting DNB training programmes in 28 Broad specialties and 16 super specialties. Besides, there are Post-doctoral fellowship programmes in 14 specialties and Post-graduate dental programmes in 9 specialties. In order to have standardized and quality training in all the accredited hospitals, National Board of Examinations has a well structured curriculum. The curriculum is being revised periodically to incorporate newer topics and introduce more innovative training methods. The present curriculum has been revised by National Board of Examinations' experts and has details of the training objectives, schedule, methods, technical contents. There are lists of skills in various procedures/ surgical techniques which a DNB candidate must acquire during the training, reference and text books as well as the journals in the speciality. The curriculum also gives sample theory questions and common cases for practical skill assessment during training every six months in the form of concurrent assessment. The guidelines for thesis and maintenance of log book to record day to day activities carried out by the candidates are also given.*

*It is expected that the revised curriculum will be useful to the DNB consultants in organizing the DNB training programmes in their respective hospitals. The DNB candidates will also benefit from this document.*

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## Goal

To enable the candidate to function as a specialist anaesthesiologist, well trained in practice of Anaesthesia, Critical Care, Pain Management, Resuscitation of all acute or acute on chronic conditions and as a trainer imparting such knowledge to the doctors in training and subordinate ancillary medical staff. To this end he should possess diagnostic skills as well as skills with laboratory procedures, and current technologic tools, their judicious use and sensible interpretation in various clinical settings based on in depth knowledge of all basic sciences and all disciplines of clinical medicine.

He should have dedication to the specialty, to patients under his care, to the institution and be able to work as a team with surgeons, nursing staff, hospital administration and with other clinicians, understanding, adjusting and instructing where necessary with a balanced mind and leadership qualities.

He should have a thorough grasp of the Pharmacokinetics, and Pharmacodynamics and interaction of all anaesthetics and allied drugs which he will be using or which the patient has already been taking.

He should have knowledge of cardiovascular, respiratory, renal, hepatobiliary and hormonal and neurologic systems of the body

He should possess adequate knowledge of the physical principles on which are based the anaesthetic , monitoring and resuscitation gadgets he is likely to use, understanding the functioning of each and feasibility of their use in different clinical presentations of a patient.

## Objectives to be achieved by an individual at the end of 3 years of DNB training

### Cognitive Domain

- He should have precise concepts of doing basic clinical research and application of statistical analysis, in clinical medicine, medical audit, and medical record maintenance.
- He should be able to put into use judiciously all types of regional anaesthetic techniques both in OT as well as for all pain management.
- He has to understand the problems and anaesthetics implications of the following conditions and situation:
  - ❑ Endocrine disorders
  - ❑ Chronic respiratory disease
  - ❑ Respiratory crises situations
  - ❑ Hypertension and coronary artery disease
  - ❑ Congenital heart disease
  - ❑ Surgical operable conditions of newborn
  - ❑ Management of trauma including burns of various stages of its course
  - ❑ Geriatric anaesthetic problems
  - ❑ Acid-base homeostasis

- ❑ Anaesthesia in difficult situations- Radiology including MRI, Dental chair, Endoscopic and airway-sharing procedures, Camp anaesthesia, Day care surgery, Shock of various etiology, Field situations including high altitude, Laser surgery.

### **Affective Domain**

- He should have exposure to specialities of Anaesthesia such as transplants, laparoscopic, cardiac surgical, neurosurgical, neonatal, obstetric, orthopaedic, plastic and ophthalmologic procedures.
- He should be familiar with blood products transfusions, their indications, limitations and hazards.
- He should have knowledge of basic and advanced life support measures.
- He should have performed competently in the procedures mentioned in the annexure-II.

### **Psychomotor Domain**

The candidate should be able to:

- Perform preanaesthetic check of patients taking detailed history, thorough physical examination, examining the reports of relevant laboratory tests, and order appropriate premedication.
- Categorise patients according to ASA (American Society of Anesthesiologists) risk grading.
- Recognise anaesthetic problems in high-risk patients and select further investigations and referral for expert opinion for dealing with specific problems.
- Obtain patient/guardian consent for anaesthesia after proper explaining the anaesthetic procedure, its advantages and any complications.
- Conduct complete check for oxygen supply, other gases supply.
- Administer anaesthesia to patients for emergency surgery, recognize peri-operative complication and institute therapy.
- Assist in anaesthetic management of the-Organ Transplant surgery, Limb replantation, Complicated reconstructive surgeries.
- Perform the following procedures related to general anaesthetic independently- Endotracheal intubation, nasal and oral under difficult situations eg. Awake intubation, under local anaesthesia without the use of muscle relaxants, To obtund response to laryngoscopy.
- Assist/Perform-Blind nasal intubation, Intubation with double lumen tube, Laryngoscopy and bronchoscopy using malleable fibre optic Laryngoscopy/Bronchoscope.
- Maintain airway by using different types of laryngeal mask airway.
- Maintain airway by using mask ventilation.
- Induce and maintain anaesthesia by open drop ether in paediatric patient for surgery on the periphery in remote areas.
- Undertake the following regional anaesthesia techniques- Lumbar epidural including segmental block and paravertebral block, Spinal/Intrathecal anaesthesia, Combined spinal and epidural block, Caudal block, Peripheral

- Nerve block, Brachial plexus block by interscalene, supraclavicular and axillary approach, Intravenous regional anaesthesia.
- Recognize chronic pain syndromes and manage them by-Pharmacotherapy, Nerve blocks, Physical methods TENS, and acupuncture.
  - Assist/Perform Neurolytic Blocks.
  - Manage Patients for cancer pain by WHO regime.
  - Maintain nutrition of critically ill patients by parenteral and enteral nutrition.
  - Assist/Perform central venous cannulation by all routes-Perform Percutaneous/Mini-Tracheostomy, Institute Jet Ventilation.
  - Carry out cardiopulmonary brain resuscitation.
  - Initiate, maintain and wean patients from ventilators in ICU settings.
  - Initiate and manage labour analgesia in labour room settings.
  - Initiate and manage total intravenous anaesthesia.
  - Able to manage anaesthesia for electro convulsive therapy.

Besides he should have comprehensive knowledge in anaesthetics and perioperative management of patients with hypertension, diabetes mellitus, chronic obstructive airway disease, including bronchial asthma, myasthenia gravis, obesity, paraplegia, neuromuscular disorders, burns resuscitation and critical care, intensive care management of all assorted patients under that which includes choice of ventilators, and management of patients on ventilators, sterilization of equipments.

### **Tentative Schedule for three years of DNB Training**

During the course, the candidate should be exposed to the following areas of clinical anaesthesia practice:

- Pre anaesthesia clinic
- Pain clinic
- Recovery and Post anaesthesia care unit ( PACU )
- Intensive Care Units
- Dialysis and transplant
- All specialty theatre
- Induced hypotensive techniques
- Induced hypothermia
- Monitored anaesthesia care

The postings to various stations can be guided by the following schedule, the time to be spent depends on availability and the duration of the course ( 2 years or 3 years ):

<b>Operation theatre</b>	<b>Months</b>
General Surgery	8
Urology	2
Eye	1
ENT	1
Dental	1
Orthopedics/Trauma/casuality	4
Gynaecology	3
Obstetrics	3
Paediatrics surgery	2
Burns/Plastic	1
CTVS	2
Neurosurgery	2
ICU	3
Pain	1
Recovery	1
Organ Transplant	6 transplants
Peripheral Theatre (Radiology, Radiotherapy)	10 times each while on posting in the other areas.
ECT, Cardiac Cath)	
Neonatology/Paediatrics	: 1 week ( half day) total 20 hrs
Cardiology	: 2 weeks ( half day) total 40 hrs
Camp surgery	: optional if available

Major stress in DNB course shall be on practical training based on current scientific information, imparted by experienced teachers.

## **Assessments/ Examinations**

### **Concurrent examination/assessment**

The purpose of the concurrent assessment is to give regular feed back to the DNB candidates about their performance and to prepare them for the final terminal examination by giving them exposure to the examination pattern. As a part of the concurrent evaluation, the DNB candidates will be assessed every six months by an independent local appraiser selected by National Board of Examinations. This would include theory examination (100 marks of three hours duration) containing 10 short structured question related to the topics covered during the preceding six months by the accredited hospital/institution.

The practical examination (300 marks) will include long case, short case, spots, ward round, viva voce on the topics covered during the period by the hospital/institution.

### **Final Examination**

Theory papers -Four (each of 100 marks) as follows:

PAPER I	Principles and practice of Anaesthesiology-I
PAPER II	Principles and practice of Anaesthesiology-II
PAPER III	Clinical Sciences as related to Anaesthesiology
PAPER IV	Basic Sciences as applied to Anaesthesiology

10 Short Answer questions (10 marks each)

### **Practical Examination:**

Long & short cases and OSCE should be given to the students for history taking and examination. Spot case should be given to the candidate in the presence of the examiner/s, to be examined (including history taking by the candidate) and assessed by the examiners Viva Voce on-Instruments specimens, Drugs & X-rays, Sonography etc.



## ANNEXURE- I, THEORY SYLLABUS

- a) Anatomy of cranial nerves, respiratory tract including anatomy of larynx , bronchopulmonary segments, heart, nose, cubital fossa, Brachial, cervical, lumbar plexus. Diaphragm, Triangles of neck, Tongue, Dermotomal and cutaneous innervation of extremities, cerebral circulation, cerebral ventricles.
- b) Principles of physics and use of equipment in anaesthesia
  - i) Gas laws, vaporization, vaporizers
  - ii) Anaesthesia machine – checking the machine and assembly of necessary items.
  - iii) Airway equipment including Tracheostomy/Equipments for airway management-mask, LMA, fiberoptic laryngoscopes; other devices like Combitube etc.
  - iv) Breathing systems continuous flow systems, draw over system .
  - v) Monitoring in Anaesthesia with concepts of minimal monitoring. Principles of oximetry, capnography and Neuromuscular monitoring. Principles of different Monitoring equipments used in anaesthesia and Intensive Care Unit.
  - vi) Safety in Anaesthesia Equipments
  - vii) Medical gases – storage and central pipeline system, Cylinders.
- c) Physiology
  - i) Theories of mechanism of production of Anaesthesia  
  
Respiratory, cardiovascular, hepatobiliary, renal and endocrine system and central nervous system. Pregnancy, Blood Groups, Muscle & N M Junction, ECG, Regulation of temperature & Metabolism, Stress response, cerebral blood flow and ICP.
  - ii) Shock- pathophysiology, clinical diagnosis and management.
  - iii) Pulmonary function tests – principles and applications.

- d) Pharmacology
- i. General Pharmacological principles, concept of pharmacodynamics and pharmacokinetics.
  - ii. Inhalational, intravenous anaesthetics, drugs used in premedication, postoperative pain, neuromuscular blocking drugs, and in the ICU, autonomic drugs, vasopressor and vasodilators.
  - iii. Drugs used for different diseases.
  - iv. Drug Interactions in Anaesthesiology.
  - v. Drugs used for spinal, epidural and local anaesthesia.
- e) Biochemistry relevant to fluid balance & Blood and blood products Transfusion, Artificial Blood & Perioperative fluid therapy. Enzymes, calorie requirement, parental nutrition.
- Acid base homeostasis in health and disease. Interpretation of blood gases and other relevant biochemical values
- f) Anaesthetic records and medico-legal aspects of anaesthesia
- g) Theoretical background on disorders of Cardiovascular, respiratory, hepatobiliary, Renal, Neurologic, Degenerative, Endocrine & Metabolic syndromes, DIC, and ARDS.
- h) Resuscitation of a patient with overdose poisoning. Management of unconscious patients. Resuscitation of a patient with extremes of body temperature, polytrauma and dialysis. Neonatal resuscitation. Resuscitation of a trauma patient.
- i) Artificial ventilation, ventilators, currently used modes, choice of ventilators, care of patient on ventilator.
- j) Oxygen therapy
- k) Operation theatre and Recovery rooms layout (concepts of PACU)
- l) Computers, Utility, computer assisted learning and data storage. Computerised anaesthesia records.
- m) ECG, X-rays, Ultrasound, MRI and CT Scan.
- n) General principles of preoperative assessment & premedication.
- o) Acute and Chronic Pain: Pathophysiology and Management.

- p) Neonatal and paediatric anaesthesia.
- q) Principles of outpatient anaesthesia and anaesthesia in abnormal environment and mass casualty.
- r) Anaesthetic Management in special situations: Emergency, ENT, ophthalmology, Obstetric anaesthesia and analgesia., Plastic, Dental, Radiodiagnosis, Radiotherapeutic patients and MRI.
- s) Anaesthesia for patients with common and uncommon diseases.
- t) Basics of Orthopaedic anaesthesia.
- u) Anaesthesia for camp surgery.
- v) Difficult airway management.
- w) Anaesthetic implication of coagulation disorders.
- x) Principles of geriatric anaesthesia.
- y) Selection, maintenance and sterilization of anaesthesia equipment.
- z) Principles of anaesthetic management of Neuro, Cardiac, thoracic, Vascular, Transplantation, burn and plastic surgery.

**ANNEXURE-II, DETAILS OF THE SKILLS TO BE ACQUIRED DURING THE TRAINING PERIOD**

**Clinical procedures which the candidates must know**

Sr. No.	Name of procedure	Number of procedure		
		As Observer	under Supervision	Independently
1.	Endotracheal intubation	1	200	500
2.	Naso-tracheal intubation	1	50	100
3.	Blind Nasal intubation	1	20	20
4.	LMA & intubating LMA insertion	1	10	100
5.	Failed intubation drill (includes Fiberoptic Laryngo/Bronchoscope)	1	5	10
6.	Double Lumen Tube	1	5	10
7.	Bronchial Blocker placement	1	1	5
8.	Jet Ventilation	1	1	5
9.	Suctioning & physiotherapy of wet lung	1	10	100
10.	Intubation in Neonates	5	10	50
11.	Initiation & management of ventilation	10	20	100
12.	Spinal Anaesthesia	02	05	100
13.	Lumber Epidural Anaesthesia	05	05	50
14.	Caudal Epidural Anaesthesia	02	05	50
15.	Combined Spinal Epidural	05	05	25
16.	Brachial Plexus Block	05	05	20
17.	Intravenous Regional Anaesthesia	05	05	50
18.	Elbow, Wrist, Digital, Sciatic, Femoral, Lateral Cutaneous Nerve of thigh, Ankle - each	05	05	05
19.	Cervical-Superficial & Deep plexus, Stellate, Splanchnic block - each	02	05	05
20.	Peripheral venous cannulation	05	05	500
21.	Central Venous Line by Brachial, Jugular & Subclavian veins	02	05	20
22.	Radial & Femoral Artery cannulation	02	02	10
23.	Oesophageal/Precordial Stethoscope	02	05	50
24.	CVP monitoring	02	05	20
25.	Pulmonary Capillary Wedge Pressure	01	01	01
27.	Temperature at Tympanic membrane Oesophageal/nasopharyngeal/Rectal	02	05	20
28.	Neuro-muscular transmission Monitoring	02	05	30
29.	Anaesthetic Depth eg BIS monitoring	02	05	20

30.	External Cardiac Compression	01	05	20
31.	Expired Air Ventilation on Dummy	01	05	10
32.	Manual Bag resuscitator	05	05	50
33.	Cardiac Defibrillation	05	05	05
34.	Advanced Life Support	10	20	50
35.	Fire in OR drill	Desirable	Once a while	
36.	Oxygen failure drill	Once a while		
37.	Cardiac Arrest drill	Once a while		
38.	Mass Casualty drill	Once a while		

**Clinical procedures which the candidate may know / desirable**

Sr. No.	Name of procedure	Number of procedure		
		As Observer	under Supervision	Independently
1.	Intracranial Pressure Monitoring	05	05	05
2.	Transeosophageal echocardiography	05	05	05
3.	Non Invasive Cardiac Output monitoring	05	05	-

**Investigations / tests which the candidate must know to interpret**

Sr. No.	Name of Investigation / Tests
1.	ECG
2.	Pulmonary Functions Tests
3.	Blood Biochemistry
4.	Arterial Blood Gases
5.	2D Echocardiography
6.	Coagulation Profile/ TEG
7.	X ray Chest, Neck (Air Tracheograms)
8.	Cardiac Catheterization Study
9.	Neuromuscular monitoring
10.	Capnography tracings
11.	Evoked potential

## **ANNEXURE –III- SAMPLE CASES FOR PRESENTATION AND DISCUSSION**

### **Practical Long Cases**

- RHD with MS or MR or both
- MS and MR (with other lesions)
- Hypertension
- IHD with CAD
- Cardiomyopathy
- Bronchial asthma
- Bronchiectasis
- Carcinoma lung
- COPD
- DM
- Thyroid swelling
- Obstructive jaundice
- Portal hypertension
- CRF
- Severe anaemia
- Normal pregnancy
- PIH and Eclampsia
- Pregnancy with heart disease
- Emphysema (pleural effusion)
- BHP for TURP
- Kyphoscoliosis
- Pregnancy with anaemia
- Geriatric pt. ForTHR/TKR
- Paraplegia/GBS / Motor neuron disease
- Congenital Heart Disease: ASD Congenital Heart Disease: VSD
- Congenital Heart Disease: TOF

### **Short Cases**

- Congenital heart disease
- ASD, VSD,PDA
- Buerger's disease
- Cleft lip and cleft palate
- Meningocele and Hydrocephalus
- Tracheotomy
- Cataract
- Intercostal Drain
- Burn contracture
- TM joint Ankylosis
- CTEV
- Diabetic foot ulcer
- Sacrococcygeal teratoma
- Thyroid swelling
- COPD
- Pregnancy with heart disease
- Squint

## Spots

- ECG
- X-rays
- Capnograph tracings
- Flow volume loops
- Arterial blood gases values
- Drugs used in Anaesthesia including anaesthetic agents
- Anaesthesia equipments
- Intravenous fluids
- CPR Dummy
- Anaesthesia machine
- Ventilator
- Skeleton for blocks
- Defibrillator

#### **ANNEXURE-IV, SAMPLE QUESTIONS FOR SIX MONTHLY ASSESSMENTS**

- Minimum mandatory monitoring of anaesthesia
- Anatomy of larynx
- Pulmonary functions tests
- Safety in anaesthesia equipment
- Management of unconscious patient
- Neonatal Resuscitation
- Physiology and Management of Pain
- Trigeminal Neuralgia
- Oxygen therapy
- Recovery from Anaesthesia
- Effect of Positioning
- Characteristic and functional specification of vaporizers
- Acid base and electrolyte balance
- Measurement of Intracranial pressure
- Hypotensive Anaesthesia
- Obstetric Analgesia
- Day Care Anaesthesia
- Anaesthesia and Pacemaker
- Resuscitation of Trauma patient and Mass Casualty
- Anaesthesia implication in Pheochromocytoma
- Coagulation disorders and Anaesthesia
- Cardioplegia
- Management of Shock
- Chronic pain therapy
- Neonatal ventilation
- Principles of one lung anaesthesia
- Anaesthesia in a patient with burns
- Sterilization of Anaesthesia equipment
- Therapeutic nerve blocks
- Organ Harvestation
- Cardiac output monitoring



## **ANNEXURE- V, BOOKS AND JOURNALS WHICH THE CANDIDATE MUST READ**

### **List of Books**

#### **Must read:**

1. Lee's Synopsis of Anaesthesia
2. Clinical Anaesthesia Practice by Kirby and Gravenstein
3. Clinical Anesthesiology by Morgan
4. Anaesthesia by Nimmo, Rowbotham and Smith
5. Physics for Anaesthetists by Sir Robert Macintosh
6. Physics applied to Anaesthesia by Hill
7. Scientific foundations in Anaesthesia by Stanley Feldman and Cyril Scurr
8. Cardiac Anaesthesia By Joel Kaplan
9. Clinical Anaesthesia by Barash, Cullen and Stoelting
10. Anaesthesia and perioperative complications by Benumoff and Saidman
11. Textbook of Anaesthesia by Aitkenhead Rowbotham and Smith
12. Paediatric Anaesthesia by Gregory
13. Medicine by Anaesthetists by Vickers
14. Pharmacology and Physiology for Anaesthetists by Stoelting
15. Principles of Obstetric Anaesthesia by Selwin Craford
16. Thoracic Anaesthesia by W. Mushin
17. Automatic Ventilation by Mushin
18. Miller RD, ed Anesthesia
19. Wylie, Churchill, Davidson: Practice of Anaesthesia
20. Nunn & Utting; Anaesthesia
21. Stoelting RK, Miller Rd, eds, Basics of Anaesthesia
22. ICU Book, Paul Marino
23. Critical Care, Joseph Civetta & Taylor
24. Critical Care, Schoemaker
25. Regional Anaesthesia, Moore
26. Regional Anaesthesia, P Prithviraj
27. The Management of Pain, Bonica
28. Neural Blockade in Pain Management, Cousins
29. Practical Management of Pain, Raj
30. Stoelting & Dierdorf: Anaesthesia and Co-existing Disease
31. ABG: Shapiro
32. Dorsch and Dorsch: Understanding Anaesthesia Equipments
33. ECG by Shamroth/Goldman
- 34. Anatomy for Anaesthetists by Harold Ellis**

**Must refer:**

1. J Benumof: Anaesthesia for Thoracic Surgery
2. Cucchiara and Michenfelder: Clinical Neuroanaesthesia
3. Cottrell & Smith: Anaesthesia and Neurosurgery
4. Smith : Pediatric Anesthesia
5. Steward D: Handbook of Paediatric Anaesthesia
6. Complications in Anaesthesiology by Orkin
7. Complications in Anaesthesia by Raven
8. Airway management by JL Benumof
9. Obstetric Anaesthesia by Chestnut

**List of Journals:**

1. Indian Journal of Anaesthesia
2. Journal of Anaesthesiology and Clinical pharmacology
3. Anaesthesia
4. British Journal of Anaesthesia
5. Anesthesia and Analgesia
6. Anesthesiology
7. Anaesthesia and Intensive Care
8. Canadian Anaesthesia Society Journal
9. Acta Anaesthesia Scandinavia
10. Regional Anesthesia and Pain Medicine

**Year Books:**

1. Anesthesia Clinic of North America
2. International Anesthesiology Clinics
3. Year Book of Anaesthesia
4. Recent Advances in Anaesthesia
5. Anaesthesia Review

## ANNEXURE-VI, GUIDELINES FOR WRITING THESIS/DISSERTATION

Research shall form an integral part of the education programme of all candidates registered for Diploma of NB degrees of the Board. The Basic aim of requiring the candidates to write a thesis/dissertation is to familiarize him/her with research methodology. The members of the faculty guiding the thesis/dissertation work for the candidate shall ensure that the subject matter selected for the thesis/dissertation is **feasible, economical and original**.

### Guidelines

- I. The thesis may be normally restricted to the size to 100 pages. To achieve this, following points may be kept in view;
  - (i) Only contemporary and relevant literature may be reviewed.
  - (ii) The techniques may not be described in detail unless any modification/innovations of the standard techniques are used and reference may be given.
  - (iii) Illustrative material may be restricted.
  - (iv) Since most of the difficulties faced by the residents relate to the work in clinical subject or clinically oriented laboratory subjects the following steps are suggested:
    - For prospective study, as far as possible, the number of cases should be such that adequate material, judged from the hospital attendance, will be available and the candidate will be able to collect the case material within a period of 6-12 months so that he/she is in a position to complete the work within the stipulated time.
    - The objectives of the study should be well defined.
    - As far as possible, only clinical or laboratory data of investigations of patients or such other material easily accessible in the existing facilities should be used for the study.
    - Technical assistance, wherever necessary, may be provided by the department concerned. The resident of one speciality taking up some problem related to some other speciality should have some basic knowledge about the subject and he/she should be able to perform the investigations independently, wherever some specialised laboratory investigations are required a co-guide may be co-opted from the concerned investigative department, the quantum of laboratory work to be carried out by the candidate should be decided by the guide and co-guide by mutual consultation.
    - The Clinical residents may not ordinarily be expected to undertake experimental work or clinical work involving new techniques, not hitherto perfected or the use of chemicals or radio isotopes not readily available. They should however, be free to enlarge the scope of their studies or undertake experimental work on their own initiative but all such studies should be feasible within the existing facilities.

- The residents should be able to use freely the surgical pathology/autopsy data if it is restricted to diagnosis only, if however, detailed historic data are required the resident will have to study the cases himself with the help of the guide/co-guide. The same will apply in case of clinical data.
- Statistical methods used for analysis should be described in detail.

### **Rules for Submission of Thesis/ Dissertation by candidates for DNB**

- (i) The protocol of Thesis/ Dissertation should be submitted to the office of the NBE through head of the institutions within three (3) months of joining the training in Medical college/university/DNB accredited institution.
- (ii) No correspondence will be made in regard to acceptance of the protocol except only in the case of rejected protocols for which individual will be informed by office through mail/website.
- (iii) The guide will be a recognized PG teacher in Medical college or university or NBE Accredited institutions. The teacher should have the experience of 5 years in speciality after obtaining the post graduate degree. The certificate of PG teaching and being Guide recognized by University/NBE must be enclosed alongwith thesis/dissertation. The Guide can guide one MD/MS candidate and one university diploma candidate desirous of taking the DNB examination, or one direct NBE candidate. Total number of candidates should be two including all sources.
- (iv) Candidates who will be appearing in the subject under the heading Super Speciality (like Cardiology & Cardio Thoracic Surgery etc.) need not write their thesis/dissertation if they have already written their thesis during their MD/MS/NBE examinations. However they have to submit a proof in support of their having written thesis during their MD/MS examination.
- (v) If the candidates appearing in the broad specialities have already written their thesis in the MD/MS examination, they need not submit the thesis/dissertation. However they are required to submit a copy of the letter accepting the thesis by the University.
- (vi) If thesis is rejected or needs to be modified for acceptance, the Board will return it to the candidate with suggestion of assessors in writing for modification. The result of such candidate will be kept pending till the thesis is modified or rewritten, accordingly as the case may be and accepted by the assessors of the Board.
- (vi) If any unethical practice is detected in work of the Thesis, the same is liable to be rejected. Such candidates are also liable to face disciplinary action as may be decided by the Board.
- (vii) The thesis is to be submitted 6 MONTHS before the commencement of the DNB examination. Theory result of the candidates whose thesis/dissertation are accepted by the Board will be declared.

## **Guidelines for Writing of Thesis/Dissertation**

**Title** - Should be brief, clear and focus on the relevance of the topic.

**Introduction** – Should state the purpose of study, mention lacunae in current knowledge and enunciate the Hypothesis, if any.

**Objectives of the study.**

**Review of Literature** – Should be relevant, complete and current to date.

**Material and Methods-** Should include the type of study (prospective, retrospective, controlled double blind) details of material & experimental design procedure used for data collection & statistical methods employed; statement of limitations ethical issues involved.

**Observations–** Should be Organized in readily identifiable sections Having correct analysis of data be presented in appropriate charts, tables, graphs & diagram etc. These should be statistically interpreted.

**Discussion-** Observations of the study should be discussed and compared with other research studies. The discussion should highlight original findings and should also include suggestion for future.

**Summary and Conclusion**

**Bibliography** - Should be correctly arranged in Vancouver pattern.

**Appendix—**All tools used for data collection such as questionnaire, interview schedules, observation check lists etc should be put in the annexure.

**ANNEXURE-VI, GUIDELINES FOR LOCAL APPRAISERS**

**Ref. National Board of Examinations/ Monitoring DNB trg2006  
Dated 23.6.2006**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Sir/Madam,**

**Thank you for agreeing to act as appraiser for the subject \_\_\_\_\_ at the**

\_\_\_\_\_.

**You are hereby requested to carry out the followings:**

- i. Prepare one paper containing ten short questions in the areas covered by the hospital/ institution in the last six months.**
- ii. Conduct the theory examination for the candidates in the subject in the hospital.**
- iii. Review the thesis progress and log book records for each candidate.**
- iv. Conduct practical examination for the DNB candidates in the discipline.**
- v. Appraise the infrastructure and facilities in the hospital in the concerned subject as per the enclosed format.**
- vi. Send the report in the enclosed format to The Executive Director, National Board of Examinations, Ansari Nagar, Ring Road, New Delhi-110029.**
- vii. Give suggestion for improving the DNB training and appraisal.**

**You are requested to contact \_\_\_\_\_ of the hospital \_\_\_\_\_ at Phone No. \_\_\_\_\_**

**You will be paid the honorarium for these activities by the concerned hospital as per the enclosed norm.**

**Thank you for your co-operation and support.**

**Yours sincerely**

**(A.K. Sood)**

**Copy to**

\_\_\_\_\_  
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**Director/DNB Coordinator should make the necessary arrangements to conduct appraisal by the 31 July 2006.**



## **National Board of Examinations**

### **Guidelines for local Appraisers**

- 1. NBE is pleased to suggest your name as local appraiser. The purpose of introducing six monthly appraisals of NBE accredited hospitals/institutions is to further improve the quality of training, assess the training infrastructure for the DNB candidates and also assist the local institutions to develop in to a center of academic excellence. This would further add value to the services being rendered in these accredited hospitals/institutions. Please do not think that this assessment has negative connotation. Please plan your appraisal in such a way as to minimally affect the routine working of the department.**
  
- 2. The Board expects the local appraiser to be a post graduate in the speciality with teaching and research experience. He/She should have enough time and expertise to carry out the following activities in the allotted hospitals/Institutions:**
  - 2.1 He/she should participate in thesis protocol/progress presentation & discussion; assist the DNB candidates in their thesis work by giving them suggestions and monitoring their progress. He/she should give specific remarks to improve the Thesis work after reviewing the objectives, methodology (sample size, sampling technique, data collection tools etc.), data analysis plan and statistical tests, results and discussion plan etc. of thesis of each candidate. These remarks should also be communicated in writing to the supervisor and the concerned candidate by the appraiser and a copy be sent to National Board of Examinations.**
  
  - 2.2. He /she is expected to examine the log book maintained by the candidates and give specific remarks to improve the log book maintenance after reviewing the contents of the log book ( name of procedure, details of the case, salient findings, remarks of the supervisor for the improvement of the candidate etc). These remarks should also be communicated in writing to the supervisor and the concerned candidate by the appraiser and a copy be sent to National Board of Examinations.**
  
  - 2.3 He/ should prepare question paper containing ten short structured questions in the speciality on the topics covered during the preceding six months and evaluate the**

answer sheets. He/she will maintain total confidentiality in these activities. The arrangements for six monthly theory and practical examination will be made by local accredited hospitals/institutions.

- 2.3. He/she will formally conduct practical examination (On the topics/areas covered in preceding six months). The practical will have long case, short cases; ward round, spots and viva voce as per the DNB format.
- 2.4. He/she will communicate the result of assessment to the concerned candidates along with detailed feed back on their performance. He/she will give detailed suggestions to each candidate in writing for improving his/her performance. He/she will act as counselor and give specific remarks for improving the overall performance level of the candidate. These remarks should also be communicated in writing to the supervisor and the concerned candidate by the appraiser and a copy be sent to National Board of Examinations.
- 2.5. He/she will prepare the Examination worksheet for each candidate and submit the same to the concerned hospital for records with a copy of the same to the National Board of Examinations.
- 2.6. He/she will submit the report to the Executive Director, NBE, on the format (enclosed herewith).
- 2.7. He/she will also send six monthly report on the infrastructure, patient load and manpower in the concerned speciality of the accredited hospital, to Executive Director, National Board of Examinations, Ring Road, Ansari Nagar, New Delhi-110029.



**3. Remuneration/honorarium to the Appraisers**

**NBE recommends that suitable honorarium be given to the local appraisers by the concerned accredited hospital/institution, considering the activities performed and number of DNB candidates in the speciality. The recommended minimal amount be given as follows:**

- 3.1. Assessment of Infrastructure and facilities in the hospital/institutions in the speciality = Rs. 500/-.**
- 3.2. Participation in thesis protocol presentation and discussion = Rs. 500/-per candidate.**
- 3.3. Development of theory paper = Rs. 500/-.**
- 3.4. Assessment of theory paper(s) = Rs. 500/-**
- 3.5. Holding of practical examination = Rs. 1000/- per candidate.**

**This expenditure will be met out of the fee collected from the candidates.**



**National Board of Examinations**  
(Ministry of Health & Family Welfare, Govt. of India)  
Ansari Nagar, Ring Road, New Delhi-110029.  
Tel.No. 011- 26589119, 26589517, 26589656  
Website : [www.natboard.nic.in](http://www.natboard.nic.in)

**PROFORMA FOR INFRASTRUCTURE AND DNB  
CANDIDATES' PERFORMANCE ASSESSMENT BY APPRAISER  
(PLEASE FILL SEPARATE FORM FOR EACH DNB DISCIPLINE)**

01.	Name of the Hospital, Address, Telephone number, Fax number and e-mail				
02.	Name of the Department offering DNB				
03.	No. of beds in the speciality	Total	General (Free)*	Paying	Subsidized
04.	Number of indoor admission during the last six months	Total	General (Free)*	Paying	Subsidized

\* Free – which recovers the cost only and are available for training of DNB trainees.

<b>05. Facilities for supportive services</b>	
<b>Subject</b>	<b>Please list the type and number of tests done in the reference period of last one month</b>
<b>Pathology</b>	
<b>Biochemistry</b>	

**Microbiology**

**Radiology**

**Blood Bank**

**Any other**

**06. Physical facilities :-**

**Please list the facilities related to the specialty present in the department**

07.	<b>Library facilities</b>	
	<b>Budget spent on library in last six months.</b>	
	<b>Total Number of books in the specialty with latest editions</b>	
<b>Number of journals in the specialty</b>		
<b>Names of Indian journals</b>		
<b>Names of Foreign journals</b>		
<b><u>Internet facilities and number of computers available for candidates</u></b>		
<b><u>Whether the hospital has installed reception equipment for satellite reception of CME programmes, Yes/ No, If no the reasons</u></b>		

<b>08.</b>	<b>Consultants</b>	<b>Details of PG Qualification</b>	<b>Total experience after PG</b>
	<b>Name of Senior Consultants</b>		
	<b>Name of Junior Consultants</b>		
	<b>Name of Whole time Sr. Residents</b>		

**Please attach a copy of salary/ remuneration slips for the last six months.**



<b>09.</b>	<b>Track record of the candidates for the last three years : (in the specialty)</b>				
	<b>Year</b>	<b>Registered</b>	<b>Appeared</b>	<b>Passed</b>	<b>Left (with reason)</b>

**10. Please attach the details( such as the topic covered, date, the resource persons etc.) of various academic activities carried out by the department like -**

- i. Guest lectures**
- ii. Case presentations and discussions**
- iii. Clinical conferences**
- iv. Seminars**
- v. Teaching sessions/ lectures for candidates**
- vi. Other activity specify**

**11. Any other information**

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**FORMAT FOR ASSESSOR FOR DOING ASSESSMENT OF THE DNB CANDIDATES AT THE  
END OF SIX MONTHS  
FROM \_\_\_\_\_ TO \_\_\_\_\_**

<b>Name and registration number of the candidates</b>	<b>Score in Theory examination held at the end of six months</b>	<b>Score in Practical examination held at the end of six months</b>	<b>Remarks of the assessor for improving the overall performance level of the candidate in the examination, like how to improve attempting theory and practical. These remarks should also be communicated in writing to the supervisor and the concerned candidate by the appraiser and a copy be sent to National Board of Examinations</b>

### Thesis work assessment

Name and registration number of the candidates	Specific remarks of the assessor to improve the Thesis work after reviewing the objectives, methodology ( sample size, sampling technique, data collection tools etc.), data analysis plan and statistical tests, results and discussion plan etc. of thesis of each candidate. These remarks should also be communicated in writing to the supervisor and the concerned candidate by the appraiser and a copy be sent to National Board of Examinations

### Log Book Assessment

Name and registration number of the candidates	Specific remarks of the assessor to improve the log book maintenance after reviewing the contents of the log book ( name of procedure, details of the case, salient findings, remarks of the supervisor for the improvement of the candidate etc. These remarks should also be communicated in writing to the supervisor and the concerned candidate by the appraiser and a copy be sent to National Board of Examinations

**NATIONAL BOARD OF EXAMINATION**

**WORK- SHEET FOR ASSESSMENT OF CANDIDATE BY LOCAL APPRAISER**

Date: \_\_\_\_\_

Name & Address of Hospital \_\_\_\_\_

Name of the candidate and registration No. \_\_\_\_\_

Training Year of the candidate - \_\_\_\_\_

First/ second/ Final

Name of Appraiser \_\_\_\_\_

**I Clinical Examination**

Case	Agreed Diagnosis	Max. Marks	Marks Awarded				Total Marks	
			History	Clinical Examination	Diagnosis	Management	In words	In Figure
Long case -I		60						
Short case -I		40						
Short case -II		40						
Short case-III		40						
<b>Total</b>		<b>180</b>						

II. Ward Round M. Marks = 40	Marks words	in	Awarded figure	in	Sub Total I + II (Max. Marks = 220)	
					In words	In figure

**III. Viva voce Max. Marks = 80**

Marks	Pathology	X-rays	Instrument Orthotics prosthetic	Operative surgery	Total
Maximum					
Marks Awarded (In words)					
Marks Awarded (In figure)					

**IV. Grand Total (Sum of I+II+III) Max. Marks = 300**

\_\_\_\_\_

Marks Awarded in words

\_\_\_\_\_

Marks Awarded in figure

\_\_\_\_\_

**V. Result** \_\_\_\_\_

**VI. Specific description of the strong points in case of pass candidate and of weak points in case of failed candidate. Please list out the specific details which need to be communicated to the candidate to help him improve.**

**VII. Examiner's Name & Signature \_\_\_\_\_**

**National Board of Examinations, Ansari Nagar, Ring Road**

**New Delhi-110029**

**FEEDBACK FORMAT FROM DNB CANDIDATES UNDERGOING TRAINING IN THE  
HOSPITAL**

Instructions to the DNB candidate-This feedback format is meant for knowing your views and suggestions for improving DNB training programme in your hospital. You may not reveal your identify on the format. The information given by you will be used for improving your training. Please send this form directly to the Executive Director, National Board of Examinations. You can also down load this form from the National Board of Examinations website [www.natboard.nic.in](http://www.natboard.nic.in) and email the form to nbefellow@yahoo.com

I. Name of the Hospital and Address

II. Name of the department

III. Please respond to the following questions related to your DNB training in past six months

3.1	Have you refereed to the DNB curriculum for your specialty in the last six months, if yes how many times ?	
3.2	How many times you have consulted the DNB coordinator in your hospital in the last six months?	
3.3	How many seminars you have attended in the last six months?	
3.4	How many cases you have presented to your consultant(s) in last six months?	
3.5	How many times you have attended the formal lectures covering various aspects of your speciality curriculum?	
3.6	How many guest lectures have been held in your speciality in the last six months in your hospital?	
3.7	How many times you have used internet for your studies in your hospital in the last six months?	
3.8	How many times your thesis progress has been reviewed by your thesis guides/ external appraiser in the last six months?	

- 3.9. Please mention the names of any three standard text books in your speciality ` which are available in the library of your hospital and you have referred to them in the last six months-**
- 3.10. Please mention the names of any one National and any one International journal which you have referred to in your hospital library in the last six months-**
- 3.11. How many clinical procedures you have done under supervision in last six months Please mention names and number of any three of them**
- 3.12. How many clinical procedures you have done independently in last six months Please mention names and number of any three of them.**
- 3.13. Please give five suggestions to improve your training in your speciality**

## **ANNEXURE- VII, FORMAT FOR LOG BOOK**

### **Instructions for the supervisor**

**P.G. Training Programme** - The post graduate programme broadly should include lecture/demonstration on applied basic sciences, bed side clinics, case presentations. Faculty lectures, symposia/seminar journal clubs, biopsy, radiology discussions and graded clinical responsibility.



**Evaluation** - It is essential that the trainee maintains a detailed account of the work done by him. The record book will in addition remind the trainee of what he should observe, learn and perform in a programmed and phased manner during the course of training. It is hoped that this record will stimulate the trainee towards greater effort in areas where he is below par and also record his progress. It forms the basis for assessment and evaluation of the trainees progress. Some of the possible criteria on the basis of which a trainee could be evaluated are - soundness of knowledge, application & judgment, keenness to learn, punctuality and promptness, initiative, reliability, clinical skill, behavior with patients, attitudes towards patient's relatives, colleagues, seniors and other staff, ability to express

Depending on the qualities and the level of attainments a candidates could be considered for appraisal, on the basis, for example, of the following 5 letter grading system.

A	Excellent	Above	75%	B	Good	60% -	65%
C	Satisfactory	50%-	60%	D	Poor	30% -	50%
E	Bad	Below	30%				

**Besides the grading as indicated above, each student should also be given a formal feed back on his/her weak points and how to overcome his/her deficiencies.**

**ALL THE CANDIDATES MUST WRITE THE LOG BOOK IN DETAILS WITH REMARKS FROM THE SUPERVISORS AND THESE ENTRIES MUST BE CHECKED BY THE LOCAL APPRAISERS EVERY SIX MONTHS.**

1. Name of Trainee : \_\_\_\_\_
2. Name of Hospital/Institution : \_\_\_\_\_
3. Address : \_\_\_\_\_
4. Specialty : \_\_\_\_\_
5. Name of Supervising Specialist : \_\_\_\_\_
6. Name of Medical  
Director/Superintendent : \_\_\_\_\_

Date : \_\_\_\_\_

Signature of Supervising Specialist

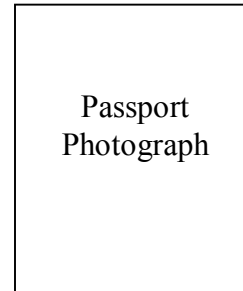
Name (Block Letters) :

Permanent Address :

Date of Birth :

Fathers Name & Address :

Education :



MBBS

Specimen Signature

Name of the College	Date joining	of	Date passing	of	No. of attempts	Prizes
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House-job

Subject	Date joining	of	Date of leaving	of	Period
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Primary Diplomat of N.B.

Subject	Date of Passing	No. of Attempts
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Final Diplomat of N.B.

Subject	Date of joining
---------	-----------------

Posting schedule

S. No.	Specialty	From	To	Period
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Lectures

S. No.	Date	Topic and name of the resource person
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Seminars

S. No.	Date	Topic and name of the facilitators	Evaluation
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Journal Clubs

S. No.	Date	Topic and name of the facilitators	Evaluation
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Clinical Procedures/Operations Performed

S. No.	Date	Details of the patients and the procedures/Operations performed; names of the supervisors
--------	------	---

Clinical Procedures/Operations Assisted

S. No.	Date	Details of the patients and of the procedures/Operations performed along with the names of the supervisors
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Presentations

S. No.	Date	Details of the Case	Names of the consultants/resource persons	Evaluation
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Emergencies

S. No.	Date	Details of the patients and management of emergency cases
--------	------	---

Panel Discussions

(A) Radiology

S. No.	Date	Details of the case discussed	Names of panelists
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(b) Biopsy

S. No.	Date	Details of the case discussed	Names of panelists
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(C) Death review

S. No.	Date	Details of the case discussed and names of the resource persons
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