

National Board of Examinations

**REVISED CURRICULUM FOR COMPETENCY
BASED TRAINING OF DNB CANDIDATES**

**RADIO DIAGNOSIS
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

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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Goals

To develop skilled and competent radiologist to conduct and interpret various diagnostic/interventional imaging studies (conventional and special investigations), to conduct research activities so as to act as a senior resident/junior consultant. Candidates should be well versed with medical ethics, and consumer protection act.

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

- The student should be able to perform and interpret conventional and advanced (US, CT, MRI) chest examinations, differentiating normal from abnormal cases and be able to recognize specific imaging patterns of different diseases.
- The student should be able to perform and interpret both conventional and other newer (ultrasound, CT, MRI, angiography) modalities including interventional studies for these systems. This includes examination of GIT i.e., esophagus, upper gastrointestinal study, follow through for small bowel (including small bowel enterolysis) and enema (both conventional and double contrast) for colon. It also includes examination of liver, biliary system and pancreas using all the imaging modalities available.
- The student should be able to perform and interpret the conventional radiological examination of the urinary tract i.e. excretory urography cystography, micturating cystourethrography (MCU) and retrograde urethrography (RGU).
- The student should be able to correctly interpret all the common abnormalities of the bones, joints and soft tissues and also have an understanding of the role of US, CT, MRI, angiography and isotope studies in these conditions.
- To do imaging in cardiovascular diseases by all the imaging modalities available and cardiovascular intervention.
- The student be able to interpret neuro-radiological studies for common conditions. These include conventional X-Rays, CT, MRI, angiography and myelography of head and spine. They should have clear understanding of neuro-interventional procedures done in the department.
- The student should be able to evaluate emergency radiographic examinations with reasonable accuracy and have clear understanding of the protocol of imaging in emergency situations of different organ systems.
- The student should be able to plan mammography studies and interpret them. They should be able to perform guided intervention of breast lesions (under supervision).
- The student should be able to evaluate conventional radiographs including radiographs on chest abdomen, pelvis, skull (including PNS+Orbit), spine, musculoskeleton and soft tissues. Student should be able to perform radiography of different body parts.
- The student should be able to perform and interpret all ultrasound studies. These studies include : abdomen, pelvis, small parts, neonatal head, breast,

color-duplex imaging (arterial and venous studies), obstetric/gynecology and intervention procedures using ultrasound guidance.

- The candidates should be able to select CT protocol according to the clinical diagnosis, demonstrate knowledge of the CT finding of the common pathological conditions, interpret conventional and modified body CT examinations, list limitations of CT in the diagnosis of certain diseases and perform CT guided simple interventions (under supervision)
- The student should be able to perform (under supervision) and interpret routine angiographic procedures and vascular interventions.
- The candidates should be able to select MRI protocol according to the clinical diagnosis, describe the conventional and modified MRI examinations, including MRA, MRV, MRCP, MRS and demonstrate knowledge of the MRI of the common pathological conditions.
- The student should be able to perform (under supervision) simple interventional procedures of all the organ systems.

Tentative Schedule for three years of DNB Training

1 st 3 month:	Clinical posting Conventional Radiography Dark room procedures Portable Radiography	Theory Reading Radio-Physics, Radiation protection Contrast media
4-9 months:	Special investigations (Urogenital & Gastrointestinal) Assisted interpretation	Chest, extremities, skeletal, Genitourinary & Gastrointestinal System & neuroradiology
10-12 months 2 nd Year	USG & CT-Basics MRI – 2 months Conventional + 2 month Mammography Barium procedures – 1 month Urogenital procedures – 1 month USG- 3 months	Radiophysics of CT & USG MRI Physics All conventional radiology
	CT 3 months Supervised reporting	Obstt. & Gynec, theory of CT & USG as related to various organ systems
3 rd Year	Angiography, CRCP, Cardiac Procedure observation 1 month Conventional + Mammography – 2 month Barium & urological procedure 2 month USG, CT & MRI- 2 month each Elective 1 month	Nuclear imaging, Pediatrics, CVS, Setting up of radiology deptt. interventional procedure showing recent advances

Thesis- Registered student will work on and submit Dissertation on allotted subject in Radio-diagnosis under supervision of “Recognized Supervisor” and at “Recognized place of work”.

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	The Principles and Practice of Radio-diagnosis this will cover Cardio-Vascular Radiology, Respiratory diseases & Genito-urinary Radiology
PAPER II	Principles and Practice of Radiology. This will cover Neuro Radiology, Gastroenterology, Osseous system and other systems
PAPER III	Radio-diagnosis are related to Medicine & Surgery. This will cover use of radioactive isotopes in diagnosis : Ultra sound & thermography techniques: and Recent advances
PAPER IV	Basic Sciences as applied to Radio-Diagnosis including Radiation Physics and Radiation Biology

10 Short Answer questions (10 marks each)

Practical Examination

- A. Clinical – Long and short cases with data as required
- B. Practical & Viva voce
 - i. Spot diagnosis of images
 - ii. General viva (Grand viva)-techniques (to be discussed with various images);
Nuclear Medicine; Instruments/Physics/Contrast Media; Pathology specimens

ANNEXURE- I, THEORY SYLLABUS

Basic science related to the speciality of Radio-diagnosis

- a. Radiation Physics and Radiation Biology
- b. Radiological Anatomy and Pathology of various organ systems.
- c. Radiography
- d. Physics of US, CT, MRI, Digital Radiography, Angiography etc.

Radiation Physics and Radiation Biology

1. Introduction to general properties of radiation
 - Production of X-Ray
 - Characteristic properties of X-Ray
 - Interaction of X-Rays with matter and their effects
 - Units of radiation, radiation measurement
 - Image receptors – X-Ray film, intensifying screen
 - Formation of radiographic image
 - X-Ray equipments –Conventional X-Ray Units,Fluoroscopy units (conventional, image intensifier), Advanced imaging equipments – US, CT, MRI, Angiography, cine fluoroscopy and cine angiography
 - Film procession – dark room equipments and procedures-manual, automatic, day light processing
2. Quality assurance
3. Radiation hazards and radiation protection
4. Contrast media – types, chemical composition, mechanism of action, dose schedule, route of administration, adverse reaction and their management.
5. Nuclear Medicine – Diagnostic use of important isotopes in different organ systems. Instruments/equipment in Nuclear Medicine and their recent advances.
6. Picture archiving and communication system (PACS) and Radiology information system (RIS) to make a film less department.

II Respiratory System

Disease of the chest wall, diaphragm, pleura and airway; pulmonary vasculature; pulmonary; infections; pulmonary neoplasm; diffuse lung disease; mediastinal disease; chest trauma; post-operative and intensive care imaging.

III Gastrointestinal (GIT) and Hepato-Biliary-Pancreatic System

Diseases and disorders of mouth, pharynx, salivary glands, esophagus, stomach, small intestine, large intestine, diseases of omentum, peritoneum and mesentery, acute abdomen, abdominal trauma. Diseases and disorders of hepato-biliary-pancreatic system. Conventional and other imaging methods like US, CT, MRI, DSA and isotope studies pertaining to these systems.

IV Genito-Urinary System

He/she should also be able to perform and interpret other diagnostic imaging procedures used to evaluate urinary tract pathology i.e., ultrasound, CT, MRI, angiography. He/She should be able to perform vascular/non-vascular interventions of genito-urinary system. Various diseases and disorders of genito-urinary system. These include: congenital inflammatory, traumatic, neoplastic, calculus disease and miscellaneous conditions.

V Musculoskeletal System

Imaging (Conventional, Ultrasound, CT, MRI, angiography, Radio-isotope studies) and interpretation of disease of muscles, soft tissue, bones and joints including congenital inflammatory, traumatic, metabolic and endocrine, neoplastic and miscellaneous conditions.

VI Cardiovascular Radiology

Diseases and disorder of cardiovascular system (congenital and acquired conditions) and the role of imaging by conventional radiology, ultrasound, Color-Doppler, CT, MRI, angiography radio nuclide studies.

VII Neuro-Radiology

Includes imaging (using conventional and newer methods) and interpretation of various diseases and disorders of the head, and spine covering congenital, infective, vascular, traumatic and neoplastic conditions. This will also include disease of the eye and ENT.

VIII Radiology Emergency Medicine

The student should be able to evaluate emergency radiographic examinations with reasonable accuracy and have clear understanding of the protocol of imaging in emergency situations of different organ systems.

IX Mammography and Breast Intervention

Role of screen film mammography (conventional and digital) in screening of breast cancer, benign and malignant lesions of the breast.

X General Radiology

(a) General Radiology

The student should be able to evaluate conventional radiographs including radiographs on chest abdomen, pelvis, skull (including PNS+Orbit), spine, musculoskeleton and soft tissues. Student should be able to perform radiography of different body parts.

(b) Ultrasound

The student should be able to perform and interpret all ultrasound studies. These studies include : abdomen, pelvis, small parts, neonatal head, breast, color-duplex imaging (arterial and venous studies), obstetric/gynecology and intervention procedures using ultrasound guidance.

(c) CT

1. Select CT protocol according to the clinical diagnosis.
2. Demonstrate knowledge of the CT finding of the common pathological conditions.
3. Interpret conventional and modified body CT examinations.
4. Know limitations of CT in the diagnosis of certain diseases.
5. Perform CT guided simple interventions (under supervision)

(d) Angiography

The student should be able to perform (under supervision) and interpret routine angiographic procedures and vascular interventions.

(e) MRI

1. Select MRI protocol according to the clinical diagnosis
2. Knowledge of conventional and modified MRI examinations, including MRA, MRV, MRCP, MRS.
3. Demonstrate knowledge of the MRI of the common pathological conditions.

(f) Interventional Radiology

The student should be able to perform (under supervision) simple interventional procedures of all the organ systems.

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

II Radiological procedures which the candidates must know (Minimum)

Sr.no	Name of procedure	Number of procedure		
		As observer	As first assistant	Independently under supervision
	RADIO DIAGNOSIS			
1.	Dark room procedures (each step)	20	20	100
2.	CYR & apicogram & H-virus, decabities	20	20	50
3.	Other X-rays (extremities & spine)	20	20	20
4.	Skull	100	50	100
5.	Fluroscopy	50	50	50
6.	Barium Swallow BMUGI BMFT (& Enteroclysis) B enema	10	10	50
7.	IVP MCU RGU	10	10	30
8.	Tube based procedures - nephrostomy- T tube - Sinogram, fistulogram	20	20	20
9.	Drainage procedures	10	10	50
10.	Biopsy/ FNAC	10	10	50
11.	Doppler	50	100	100
12.	TRUS, TVS	50	50	100
13.	Neonatal cranial USG	10	20	20

II Radiological procedures which the candidates may know/desirable

Name of procedure
RADIO DIAGNOSIS
CT enteroclysis Dark
MR enteroclysis
Diffusion & perfusion & MR S
Angiography <ul style="list-style-type: none"> - CT - MR - DSA
Sonourethrography
Bowel ultrasound
USG contrast
Transcranial
Interventional Radiology
Nuclear Imaging <ul style="list-style-type: none"> - Echocardiography - Angiocardiography

Investigations/ tests which the candidates must know to interpret

Name of Investigation/tests
ERCP
PTC
Arteriography/Venography
CT cisternography
CT Myelography, Myelogram
MRCT
MRCP
CT/MR Angiogram/ Venogram

ANNEXURE –III, SAMPLE CASES FOR PRESENTATION AND DISCUSSION

Practical long cases

- Solitary pulm nodule-X-rays, CT, USG
- Bron- Durgens CA/Pancoast, X-rays, CT
- Aortoarthritis – Aortoarthritis, Angio, Plain X-rays, CT/MR.
- Adrenal Tumour – U/S, Plain Xray, CT/MR + bones Xrays if available
- Renal tumour in a child/adult - Plain Xray, U/S IVP, CT + MR
- Liver Tumour – Plain Xray. U/S, CT, MR, CT Angio (Triple Phase)
- Pancreatic Tumour Endocrinal/Non Endocrinal
- Ba. M., U/S, CT.- MR. M.R. CP if indicated
- Lymphoma Stomach/Bowel – Ba. Med./U/S. CT
- Neurocysticercosis/Tuberculoma – C.T., MR. Soft tissue Xrays & Xrays Chest
- Bone Tumours – Ostogenic Sarcoma Ewing's, Chest, Bones, U/S.
- Pituitary Tumours – Plain Xrays, Skeletal Survey Skull, Hands, Heels, C.T.
- Disc lesion/Spondylolisthesis. Plain Xrays-spine, MR.

Short Cases

- Scurvy/Rickets/Osteomalacia Renal Rickets. Haemolytic anaemias
- Mucopoly saccharidosis
- Lipid storage disorders
- L to R shunt and Coarctation of aorta
- Hydatid cyst Liver and Lung
- Trauma – Surgical Emphysema/Pneumothorax Hepatic Laceration

ANNEXURE-IV, SAMPLE QUESTIONS FOR SIX MONTHLY ASSESSMENTS

Radiodiagnosis

- Common intracranial infections and approach to diagnosis
- Diagnosis of Acromegaly by radiological & imaging techniques
- Role of ultrasonography in an infant for diagnosis of hydrocephalus
- Salient features of craniovertebral anomaly and clinical presentation
- Spina bifida-approach to diagnosis
- Increased prevertebral space in Cervical region
- Short notes on -Persistent Parietal Foramina, Wormian bones, Silver beaten appearance, C.S.F. Rhinorrhoea, Syringomyelia
- Spondylolisthesis- diagnosis
- Chordoma-radiological features
- Disc lesion-Lumbar disc lesion
- Intracranial tumours- classification & radiological approach
- Intracranial vascular lesions- radiological & imaging approach
- Sup. Sagittal Sinus Thrombosis (Glomulus Jugular tumour, Acoustic neuroma)
- Subclavian steal

Others

- Radiological-Discuss the imaging protocol for a patient with a short history of dysphagia to solids
- Discuss the imaging and interventional radiology of a patient with an upper GI variceal bleed
- What is the imaging protocol for a patient with a possible benign biliary obstruction
- What is the current status of CT in bowel imaging
- What are the MR contrast media and their application in imaging of the liver
- Discuss the radiology of small bowel lymphoma
- Discuss the differential diagnosis of solid liver space occupying lesions
- Evaluate the role of radiology in the work up of occult GI bleeding
- How are X-rays produced and what are the characteristic properties of X-rays.
- Describe the units of radiation measurement, What do you understand by ALARA

- What are the various types of intensifying screens. Discuss their merits & demerits
- How do you assess the role of dry view camera versus the automatic film processor
- What is the role of a conventional manual film processor in the present day set up of radiology
- What common dark room film aretifacts have you seen
- Explain the working of IITV versus conventional fluoro-radiography
- What are the various types of X-rays & Imaging films used in radio-diagnosis
- How would you plan a radiology department in a district level set up. Give the basic outline and reasons there of.
- What are the various types of contrast media used in radiology and imaging. Briefly discuss their merits and demerits
- Discuss your approach as a patient who has a history of allergy and needs contrast studies in C.T. for pancreatitis
- What are the various types of contrast media reactions you have seen. How would you ensure the safety of the patient.
- What is the basic physical principle of ultrasonography. Describe briefly the range of transducers available at present
- How would you ensure radiation protection for the patient, for the radiographer and for the radiologist
- What are the various types of dosimeters used for measuring radiation exposures.
- What is the relevance of a plain X-ray Chest today discuss it.
- What role does fluoroscopy play. How would you ensure the minimum possible exposure.
- Are you aware of the roles played by-Rontgen, Pierre & Marie Curie, Seldinger, Chiba
- Discuss the various views taken during chest-radiography and justify their need.
- Discuss the appearances of Thymus in a child and adult on chest X-ray, What conclusion would you arrive at & how would you proceed to confirm your diagnosis
- Describe the role of film in inspiration and expiration. What do you derive from these and what are the fallacies associated with these
- “A simple chest x-ray is a window to many a disease”- Discuss this statement.
- “Raised Left dome of the diaphragm” is an indicator of many diseases- Please discuss & how would you further prove it

- A Hand radiograph alone can indicate many systemic diseases- Justify the statement
- Discuss briefly the following-Free air under the Domes of Diaphragm;Raised domes of the diaphragm;Air in the muscle planes of the abdomen and chest; Penumothorax;Ribnotching
- What are the salient features of Scurvy and rickets
- What is renal rickets and Ostemalacia. How would you differentiate radiologically
- How would you diagnose congenital dislocation of the hip
- Write briefly –Osteopetrosis, Osteogenesis imperfosta, Genu Valgum & T.E, varus
- Give salient features of-Congenital syphitis, Thalassemia, Mucopolysacharide Diseases

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

Books

- David Sutlon – Text book of Radiology & Imaging
- Lee Stanley
- Hagea
- Osborn

Journals

Indian

- Indian Journal of Radiology & Imaging

Foreign

- Clinical Radiology
- Radiology
- Neuro Radiology
- Journal of USG, CT, MRI
- A J R
- Seminars in Roentgenology
- RCNA

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 not of 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

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

**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.

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

Pathology	
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Biochemistry	
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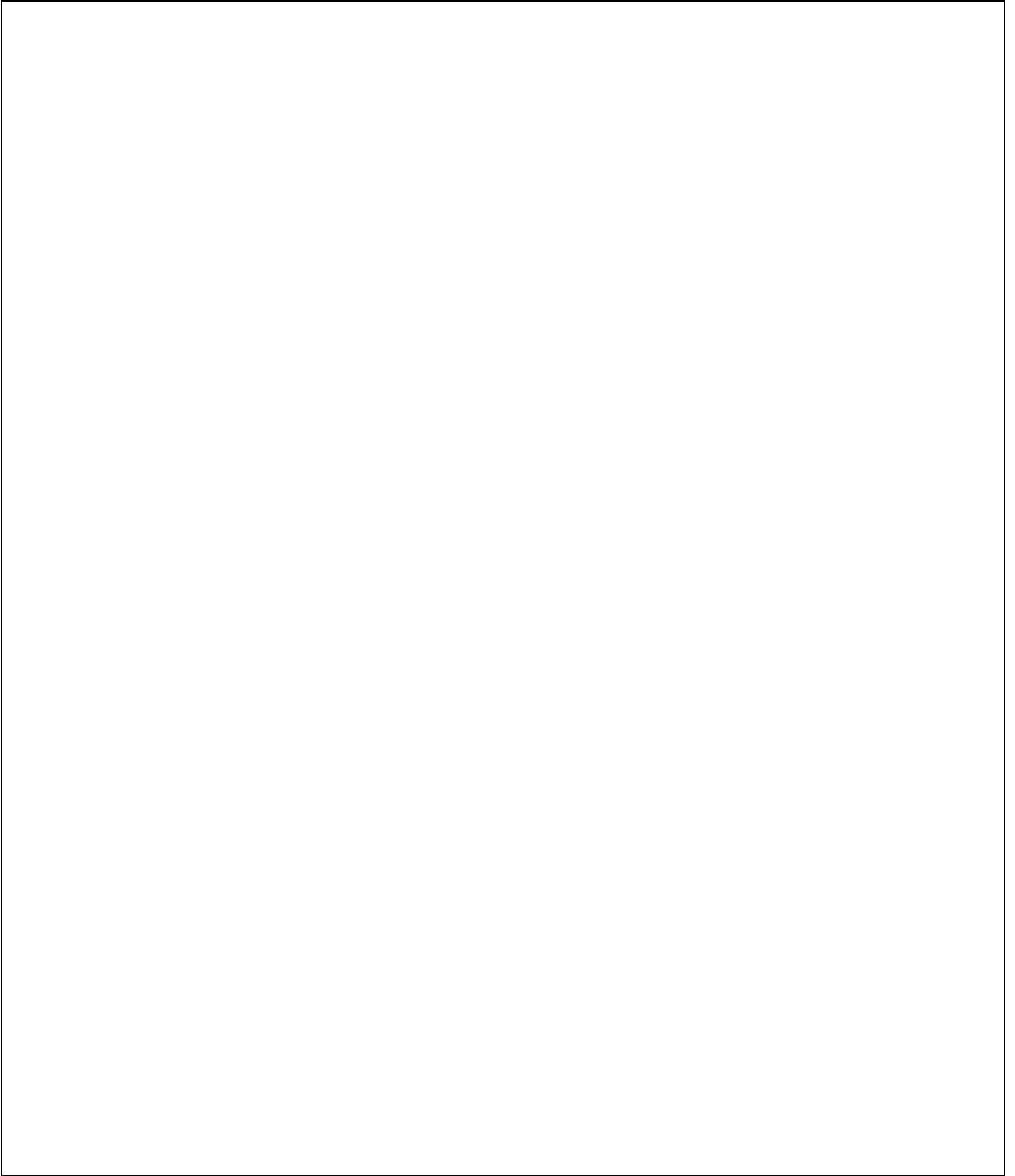
Microbiology	
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Radiology	
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Blood Bank	
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Any other	
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06. Physical facilities :-
Please list the facilities related to the specialty present in the department



07.	Library facilities	
	Budget spent on library in last six months.	
	Total Number of books in the specialty with latest editions	

<p>Number of journals in the specialty</p> <p>Names of Indian journals</p> <p>Names of Foreign journals</p> <p><u>Internet facilities and number of computers available for candidates</u></p> <p><u>Whether the hospital has installed reception equipment for satellite reception of CME programmes, Yes/ No, If no the reasons</u></p>
--

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

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

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

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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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

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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						
Total		180						

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 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?	
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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

VI. Specific description of the strong points in case of pass candidate and of weak points in case of failed candidate.

VII. Appraiser's Name & Signature _____

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%
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C	Satisfactory	50%-	60%	D	Poor	30% -	50%
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E	Bad	Below	30%
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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

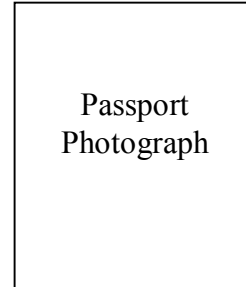
Name (Block Letters) :

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	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
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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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Radiological Procedures Performed

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