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INDIAN COLLEGE OF RADIOLOGY AND IMAGING

MASTERS IN CLINICAL RADIOLOGY(MICR)

EXAM OVERVIEW - 2024

ICRI, Academic wing of Indian Radiological & Imaging Association *IRIA*

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"Masters In Clinical Radiology" (MICR) by **Indian College of Radiology and Imaging (ICRI)**

MICR stands for "Masters In Clinical Radiology" (MICR), an academic degree by conferred by the Indian College of Radiology and Imaging (ICRI), the academic wing of Indian Radiological and Imaging Association (IRIA). This is an honour awarded to candidates who successfully pass all steps of the examination conducted by Indian College of Radiology and Imaging.

"A **master's degree**[note 1](from Latin*magister*)(Reference 1 Latin magister) is an academic degree awarded by universities or colleges upon completion of a course of study demonstrating mastery or a high-order overview of a specific field of study or area of professional practice.[1] A master's degree normally requires previous study at the bachelor's level, either as a separate degree or as part of an integrated course. Within the area studied, master's graduates are expected to possess advanced knowledge of a specialized body of theoretical and applied topics; high order skills in analysis, critical evaluation, or professional application; and the ability to solve complex problems and think rigorously and independently" – (Reference 2: Wikipedia).

The aim of introducing this is to establish a uniform and higher standard of Radiology examination of international quality. A syllabus will be specified (please see document "curriculum and syllabus for MICR"). At present this degree is not recognized by any Government bodies.

We will look forward to obtaining national and international recognition by ensuring high quality, integrity and standardization of the examination.

MICR is an ambitious project to contribute to an advanced and international level of Radiology assessment. There is no training component in this; however ICRI, the academic wing of IRIA, designed and conducted the, every day teaching program in Radiology ("ICRI teaching") – perhaps a 'world's first, delivering the entire Radiology curriculum, in the form of online lectures, exam teaching session, workshops, quiz etc covering the syllabus in one year – for the entire 20000 strong members and more than 5000 students in Radiology.

MICR is an initiative from India with an aim to achieve global recognition and high standards of education in Radiology and Imaging. ICRI will constantly audit, review and update the process to maintain highest quality and to remain up to date.

MICR degree is awarded to a Radiologist who has successfully completed all three parts – the details as below:

- **STEP 1 has two modules: Module 1A – Radiological Anatomy and module 1B – physics**
- **STEP 2 has 3 papers: Step 2 – CORE – clinically oriented reasoning and evaluation**
- **STEP 3 has two components: 3A – A1: Essential Radiology, A2: Long cases; 3B - Viva and OSCE**

The following pages discuss the details related to the examination, eligibility criteria, fees and other structures.

Table I: MICR: details - **MICR STEP 1– BASIC SCIENCES**

MICR Master In Clinical Radiology	**Sub-classification**	**Module / paper / section / station**	**Content**	**Eligibility***	**Number of questions, mode**	**Duration of exam**	**Total Marks**	**Comments**
I Basic sciences in Radiology	A	Anatomy Module	Anatomy, variants & Embryology (Relevant to radiology)	Radiologist in training who have completed at least SIX months of radiology training at the time of examination as part of MD (RD) or DNB or DMRD, as recognized by Universities and Medical council of India/NMC. All the radiology degree holders from any abroad country also eligible to appear (as per prevailing GoI international relationship), subject to verification by office about the training etc.	150 questions Computer based	3 hours	150	Anatomy questions – Image based / text based questions – SBA type
	B	Physics Module	Imaging physics, Radiology, Imaging		200 Computer based	3 hours	200	---------- Physics: 40 questions – five responses – all to be answered at true or false – total 200 responses

Important information for part 1 MICR

- Candidates who are in a postgraduate training programme should be certified by the Clinical Director / head of the department /endorsed by the head of the institution.
- Candidates may attempt both modules together (in a single sitting) or at separate sittings, in any order.
- Candidates need to pass both physics and anatomy modules to be successful at STEP I of the MICR examination.

Table II: MICR: details - **MICR STEP 2 (CORE– Clinically oriented reasoning and evaluation)**

MICR Master In Clinical Radiology	Sub-classification	Module / paper / section / station	Content	Eligibility*	Number of questions, mode	Duration of exam	Total Marks	Comments
Part 2 **CORE (Clinically Oriented Reasoning & Evaluation)**	Section A (one day exam)	Paper 1	Neuroradiology & spine, Head & Neck, Thoracic, Cardiovascular imaging	Candidates who have passed MICR step I and have completed 12 months of an approved residency in Radiology. Candidates need to pass all three papers under part 2A for successful passing of part 2A.	Variable depending on the questions	Approximately 2 hours Computer based	variable	Each of the papers consists of e theory question or image based questions Most questions are SBA type- involving the topics related to clinical management decision, differential

								diagnosis, radiological description, observations, interpretation, spotters and "Auntminnies"..

- Onco-imaging, intervention, emergency radiology, Endocrine, Multi-organ disease, post operative imaging, clinical questions, non-imaging tests related questions, histopathology & cytopathology, radiology-pathology correlation can be included in any of the Part 2A papers.
- Candidates who are in a postgraduate training programme should be certified by the Clinical Director / head of the department /endorsed by the head of the institution of completion of 12 months training
- Candidates need to pass all 3 papers separately to be successful at STEP 2 of the MICR examination.

Table III: MICR: details - **MICR step 3 (CERTIFYING EXAM)**

3A – Essential Radiology and Long cases & 3B – VIVA AND OSCE (can be taken separately)

See table below

MICR parts 3A & 3B	Should have	**Step 3A.** A1: Essential Radiology reporting (plain	50 cases	60 minutes	50

	• Passed step 1, step 2 examinations And • Completed radiology training – 18 months for step 3A and 36 months for step 3B (or) • MD, DNB degree holders (or) • DMRD + one year of senior resident training post in Radiology (or) • DMRD only + 3 years of consultant experience	Radiographs / Normal / abnormal / Emergency imaging) (computer based) A2: Long cases writing (computer based) Section 2:	100 cases	110 minutes	50
		3B- Case discussion / Viva/ OSCE	Total 4 stations: 3 Viva stations - Each station two sub-specialty sessions 1 OSCE – ultrasound and Intervention	Each station 30 minute Total 2 hours	0-10 grade for each station

Changes from 2024: *The 2B component will be moved and combined with Step 3 – as single exam (and will be called step3A/3B) – step 3 now having four components A1; Essential Radiology reporting A2: long cases reporting (both components to have the similar format and to be conducted in designated centre and computer based); B1: Viva and B2: OSCE (both components similar to current Step 3) both A & B components will be conducted on separate days within the same week or weekends to reduce travel / stay expenses for the candidate, if they choose to take it together.*

All components (A1, A2, B1, B2) to be cleared by the candidate at the same time to clear the entire Step3; ***they can choose to take step 3A separately, and pass it before taking step 3B..***

The existing candidates who have failed Step 2B, hereafter will have to take Step 3A alone or 3A&B together. When taken together all components should be passed to obtain MICR; if the candidate fail in 3B and pass in 3A – only 3B can be attempted in next sitting; if the candidate pass in 3B but fail in 3A – candidate has to take both components (3A and 3B again) separately in that sequence (3A first, pass it and then 3B).

Important information on MICR 3A

- A1- Essential Radiology reporting: Normal radiographs may also be included. Each image needs to be classified as normal or abnormal by selecting the appropriate response; for each abnormal response, the identified abnormality/ appropriate diagnosis to be typed in the relevant box. Plain radiograph (including trauma) may form about 30 to 40 questions out of total 50 cases; remaining will be emergency and trauma related cases in any imaging modality but will have only one or two selected images per case. Normal Radiographs can form 20-40% of the packet.

    - If the answer is incorrect – the mark awarded will be zero. Score of 1 if correctly classified as normal; if abnormal, score of 1 for correct classification and identification of abnormality. Incorrectly classified (false negative, false positive) answer will be awarded zero mark. A rightly classified answer with wrongly identified abnormality/ diagnosis will be awarded zero mark.

- A2- Long cases reporting : The candidate has to type in the appropriate box – related to 'observations', 'interpretation', 'diagnosis', 'differential diagnosis', 'further management' or address other relevant questions

- Long cases scoring: Each case is graded as points by the assigned examiner as per table below.

Performance	**Decision**	**Points awarded**
Not attempted	No score given	0
Attempted but unsafe or serious error is made in observation, diagnosis, management that would have lead to major impact in patient management; no relevant statements related to the case given	Fail	1

Observations – less than half Interpretation – incorrect Diagnosis – wrong Further management – not appropriate	Fail	3
Observations – more than half including important ones Interpretation – partly correct Diagnosis – partly correct Differential diagnosis – partly correct Further management – partly correct	Borderline fail	5
Observations – almost all of them (80%) Relevant negative findings mentioned Interpretation –correct Diagnosis – correct Differential diagnosis – reasonable Further management – reasonable suggestions	Pass	7
Observations – all of them Relevant negative findings mentioned Interpretation – correct Diagnosis – perfect Differential diagnosis – list of 1 to 3 alternatives – reasonable discussion about features for and against, further management – reasonable suggestions	Excellent	9
Observations – all of them Relevant negative findings mentioned Interpretation – perfect Diagnosis – perfect Differential diagnosis – good list of alternatives with all relevant features discussed for and against,	Outstanding	10

further management - spot on suggestions.		

- Overall score of 66 points needed to pass the long cases reporting section
  - Within the 66 points the following combinations are deemed as 'pass' in this section
    - One 3 point score + one 5 point scores
    - Three 5 point scores + no 3 point score
  - Even more than 66 points, the following combination deemed a 'fail' in this section
    - Two (or more) 3 point or less scores
    - Four (or more) 5 point or less scores

Step 3B – Viva / OSCE

MICR Master In Clinical Radiology	Viva / OSCE 4 stations (Please note some overlap of systems and diseases can occur)	Station 1	NEURO/ HEAD NECK CHEST /CVS		Examined in person		30 minutes for each station = **Total 2 hours** 0-10 grade for each case.	The Certifying Exam is usually taken over ONE DAY BUT MAY VARY depending on the number of candidates.
Segment 3B of Certifying examination		Station 2	ABDOMEN- GIT/GUT MSK					
		Station 3	WOMENS/FETAL PAEDS/ONCO					
		Station 4	OSCE –demo etc ULTRASOUND INTERVENTION					

			Ultrasound station – any cases of abdomen/obstetric / MSK can be asked to demonstrate in a volunteer Interventional Radiology Biopsy, FNAC, vascular puncture skills; Radiology equipment, interventional radiology Instruments, lines, tubes &hardware Non interpretative skills* - see below					

*OSCE: These skill sets comprise all those elements of radiology not directly related to radiologic diagnosis, and may include radiation and patient safety in day-to-day practice, legal requirements (PCPNDT/AERB), management of contrast reaction, error prevention, patient communication, quality control, critical thinking, professionalism, ethics, tumour board (MDT),publication, research methodology, biostatistics etc.

*Please note at OSCE stations, in case a real patient is not available for examination - candidates will be asked based questions based on images; the questions are mainly related to technique of scan, patient interaction and conduct of examination.

***Eligibility: please see separate document in website related to eligibility criteria**

MICR: eligible criteria, fees, tentative schedule and venue of the examination **

^Indian Candidates: Candidates who are citizen of India and completed Radiology training fully in India (IRIA membership mandatory)

^^International Candidates: Candidates who has completed Radiology training outside India (including Indian citizens) and those who hold non-Indian passports (IRIA membership not mandatory)

Venues: Step 1 – Delhi, Chennai, Mumbai, Step 2 & 3 , Delhi and Chennai

Please see separate eligibility document, notification of dates and FAQ document of 2024 to know the latest regulations.

References:

1. Latin magister

2. Wikipedia

Abbreviations and expansions

ICRI – Indian college of Radiology and Imaging

SBA - Single Best Answer

OSCE – Objective Structured Clinical Examination

MICR – Master's in Clinical Radiology by Indian College of Radiology & Imaging.

FNAC – fine needle aspiration cytology

MSK – musculo skeletal radiology

RS – respiratory system

CVS – cardiovascular system

GIT – Gastrointestinal system

URO – uroradiology

HN – head and neck

CNS – central nervous system

MD RD – Doctor of Medicine in Radiodiagnosis

DNB – Diplomate of National board

DMRD – Diploma in Medical Radiodiagnosis

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