

# INDIAN COLLEGE OF RADIOLOGY AND IMAGING

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## MASTERS IN CLINICAL RADIOLOGY(MICR)

### EXAM OVERVIEW - 2022

Indian College Of Radiology And Imaging

**Academic wing of Indian Radiological & Imaging Association**

IRIA House, C-5, Qutab Institutional Area, Behind Qutab Hotel  
New Delhi-110 016,INDIA.

Tel. +91-11-26965598, +91-11-41688846. Fax: +91-11-26565391

E-mail: [iria37@gmail.com](mailto:iria37@gmail.com), [icri74@gmail.com](mailto:icri74@gmail.com) , [MICREXAMreg@gmail.com](mailto:MICREXAMreg@gmail.com) Website: [www.iria.org.in](http://www.iria.org.in)

## **“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**<sup>[note 1]</sup>(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.<sup>[1]</sup> 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:

- **Part 1 has two modules: Module t 1A – Radiological Anatomy and module 1B – physics**
- **Part 2 has two Sections: Sections 2A and 2B**
- **Part 3 has two Segments: Segment 3A: SKILLS /OSCE and Segment 3B - Viva**

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

Table I: MICR: details - MICR part 1 A &B – BASIC SCIENCES

<b>MICR Master In Clinical Radiology</b>	<b>Sub-classification</b>	<b>Module / paper / section / station</b>	<b>Content</b>	<b>Eligibility*</b>	<b>Number of questions, mode</b>	<b>Duration of exam</b>	<b>Total Marks</b>	<b>Comments</b>
<b>I Basic sciences in Radiology</b>	A	Anatomy Module	Anatomy, variants & Embryology (Relevant to radiology)	Radiologist in training who have completed at least 12 months of radiology training 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	2.5 hours	150	Anatomy questions – Image based question - answer to be typed or True/False  ----- Physics: 40 questions – five responses – all to be answered at true or false – total 200 responses
	B	Physics Module	Imaging physics, Radiology, Imaging		200 Computer based	2.5 hours	200	

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 Part I of the MICR examination. Usually there will be two examinations of part 1 conducted every year, roughly 6 months apart.

Table II: MICR: details - **MICR part 2A & 2B (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
<b>Part 2 CORE (Clinically Oriented Reasoning &amp; Evaluation )</b>	Section A (one day exam)	Paper 1	Neuroradiology & spine, Head & Neck, Thoracic, Cardiovascular imaging	Candidates who have passed MICR Part I and have completed 24 months of an approved residency in Radiology. Candidates may attempt both part 2A and 2B in the same sitting or attempt them at separate sittings. (However, if attempting 2A and 2B in separate sittings, part 2B to be attempted only after success in the part 2A exam.	Variable depending on the questions	Approximately 2 hours	variable	Each of the papers consists of theory question or image based questions
		Paper 2	GI & hepatobiliary system, urinary tract & male reproductive System, MSK		Variable depending on the questions	Approximately 2 hours	variable	They can be in the form of true / false, SBA, diagnosis, clinical management decision, differential diagnosis, radiological description, observations, interpretation
		Paper 3	Fetal / female pelvis, Breast, Paediatrics, drugs / contrast	Candidates need to pass all three papers under	Variable depending on the questions	Approximately 2 hours	variable	

				part 2A for successful passing of part 2A.				, spotters and “Auntminnies”. Some answers can be selected from the response list and some need to be typed by the candidate.
	Section B (one day exam)	Section 1: Essential Radiology reporting	Any plain Radiograph – normal and abnormal (30 to 40 questions); Trauma & Emergency imaging – Any imaging modality (10-20 questions)		50 cases Computer based.	1 hour	50marks in total	See important information below
		Section 2: Long cases reporting	Pattern: A brief clinical data will be provided. All cases to be attended. A case may have more than one modality and multiple images for		10 cases Computer based	1 hour 50 minutes	100	See – important information below

			analysis and interpretation					
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Important information on MICR 2A & 2B

- Both Section A and Section B are conducted separately in different dates; those passed all 3 papers of 2A are eligible for 2B session.
- 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.
- Part 2B – Section 1 - 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.
  - If the answer is incorrect – the mark awarded will be zero. Score of 1 if correctly classified if 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. Expected pass mark total is 40 out of 50.
- Part 2B 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
- Part 2B Long cases scoring: Each case is graded as points by the assigned examiner as per table below.

Performance	Decision	Points awarded
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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	Outstanding	10

Relevant negative findings mentioned Interpretation – perfect Diagnosis – perfect Differential diagnosis – good list of alternatives with all relevant features discussed for and against, further management - spot on suggestions.		
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- 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

**Table IIIA: MICR: details - MICR part 3A & 3B (CERTIFYING EXAM – taken together)**

<b>MICR Master In Clinical Radiology</b>	Sub-classification	Module / paper / section / station	,Content	Eligibility *	Mode	Durat ion of exam	Total Marks	Comments
<b>Segment 3A</b>	3A	Station 1	Abdomen ultrasound	Candidates should have	In person - in a	90 minut	100 marks	Certifying exam will be a



<b>Certifying examination</b>	Skills / OSCE 6 stations	Station 2	Obstetrics (any one case)	completed at least 3 years of Radiology training (MD, DNB) OR DMRD + one year of senior residency (SR);  Should be Certified by the Director (s) / head (s) of the department and endorsed by the head (s) of the institution	hospital based /simulation setup.	es	Stations 1-5 carry 15 marks each;  Station 6 carries 25 marks	single exam in over 2/3days depending on the number of candidates. All sections (OSCE & VIVA) of part 3 has to be passed together to achieve successful completion of part 3.
		Station 3	Small parts including MSK (any one case)					
		Station 4	Biopsy, FNAC, vascular puncture skills					
		Station 5	Radiology equipment, interventional radiology Instruments, lines, tubes & hardware					
		Station 6	Non-interpretative skills**					

\*\*OSCE station 6: 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**

Table IIIB: MICR: details - MICR part 3A & 3B (CERTIFYING EXAM)

<b>MICR Master In Clinical Radiology</b>	3 B Case discussion / Viva	Station 1	CVS +RS		Examined in person or online viva With supervision	30 minutes for each station = <b>Total 2 hours</b>	The Certifying Exam is usually taken over two/three days depending on the number of candidates. The skills (3A) exam will be executed in a hospital; the viva component (3B) will be planned in IRIA house or other appropriate centres.
<b>Segment 3B of Certifying examination</b>	4 stations	Station 2	CNS/Spine +HN				
	Two or three systems in each station	Station 3	GIT including hepato biliary system + URO (including male genital tract) + Female pelvis				
	Paediatrics/ Vascular / non-vascular intervention / oncology questions will be at relevant systems	Station 4	MSK + Breast/ Obstetric/fetal				

PART 3A and 3B, are part of the same exam and conducted together over two or three days; both parts has to be passed to achieve the eligibility for MICR degree.

Failure of any of the part, candidate has to take both parts again. Candidates are not allowed to take MICR part 3 examinations as separate segments.

**Table IV: MICR: condensed information**

	Eligibility criteria	Module / paper / section	Number of questions	Duration of examination	Marks
Basic 1	Minimum requirement of at least 12 months of radiology training	A-Anatomy Module	150	2.5 hours	150
		B-Physics Module	200	2.5 hours	200
MICR parts 2A & 2B	Should have: <ul style="list-style-type: none"> <li>Passed both anatomy and physics modules of MICR part I</li> </ul> And <ul style="list-style-type: none"> <li>Completed at least 24 months of radiology training</li> </ul>	Paper 1	Variable	Approx: 2 hours	Variable
		Paper 2	Variable	Approx: 2 hours	Variable
		Paper 3	Variable	Approx: 2 hours	Variable
		Part 2B: Long cases writing	10 cases	1.50 hours	100
		Essential Radiology reporting	50 cases	1 hour	50
MICR parts 3A & 3B	Should have <ul style="list-style-type: none"> <li>Passed part 1, part II (2A and 2B) examinations</li> </ul> And <ul style="list-style-type: none"> <li>Completed radiology training (36 months)</li> <li>MD, DNB degree holders</li> <li>DMRD + one year of senior resident training post in Radiology</li> </ul>	A – skills / OSCE -	6 stations	90 minutes	100 marks
		B-Case discussion/Viva	4 stations	Each station 30 minutes = Total 2 hours	0-10 grade for each session

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*\*Please note pass mark criteria may vary according to the difficulty range of questions, percentile calculations, performance factors etc. Higher standard of performance is expected at all parts.*

**Table V: MICR: eligible criteria, fees, tentative schedule and venue of the examination \*\* (fees for 2022 cycle)**

	<b>Eligibility criteria</b>	<b>Fees</b>	<b>Tentative schedule</b>	<b>Venue*</b>
MICR part 1	<p>Candidates who have completed at least 12 months of radiology training (MD (RD) or DNB or DMRD course</p> <p>Each module can be attempted together or separately but both should be passed before attempting part 2</p>	<p>Indian candidates<sup>^</sup>: Single or both modules Rs 12500.</p> <p>International Candidates<sup>^^</sup>: US \$300 (or Rs 24000)</p>	<p>April and September every year (tentative – see latest notification in IRIA website)</p>	<p>New Delhi, Chennai, and other cities* (subject to minimum number of candidates required to conduct the computer based exam)</p>
MICR part 2	<p>Candidates should have:</p> <ul style="list-style-type: none"> <li>Passed both anatomy and physics modules of MICR part I</li> </ul> <p>And</p> <ul style="list-style-type: none"> <li>Completed at least 24 months of radiology training</li> </ul>	<p>Part 2A: Indian candidates: Rs 20,000 International Candidates: US \$ 500 (or Rs 40000)</p> <p>Part 2B: Indian candidates: Rs 24,500 International Candidates: US \$650 (or Rs 50000)</p>	<p>June/July and January every year (tentative – see latest notification)</p> <p>August / February Every year</p>	<p>New Delhi, Chennai, and other cities* (subject to minimum number of candidates required to conduct the computer based exam)</p>

	The candidate should pass 2A first before attempting 2B. Successful completion of part 2A requires a pass in all three papers. In case of failure to achieve the required marks in any one of the papers, the candidate will have to sit all 3 papers of part 2A again.			
MICR part 3	<p>Candidates should have</p> <ul style="list-style-type: none"> <li>• Passed part 1, part II (2A and 2B) examinations</li> </ul> <p>And</p> <ul style="list-style-type: none"> <li>• Completed radiology training (36 months)</li> <li>• MD, DNB,</li> <li>• DMRD + one year of SR</li> <li>• DMRD + 3 years as consultant</li> </ul>	<p>Indian candidates: Rs 40,000</p> <p>International Candidates: US \$900 (or Rs 72000)</p>	Nov/Dec and April/May every year (tentative – see latest notification)	New Delhi or other centres (hospital and IRIA house based)

*\*\*Please note the examination fees is subject to revision every year or every subsequent examination or parts of examination.*

*^Indian Candidates: Candidates who are citizen of India and completed Radiology training fully in India.*

*^International Candidates: Candidates who has obtained Radiology Degree outside India (including Indian citizens or trained in India but with overseas university or nationally approved degree) or those who hold non-Indian passports (irrespective of training or degree from anywhere).*

Summary:

Part I	Part II	Part III
<p>Two Modules – computer based</p> <p>1A:Anatomy module</p> <p>1B: Physics module</p>	<p>Part 2A: Total 3 papers to be taken together – computer based (to be passed first before 2B)</p> <p>Part 2B: computer based examination - Essential Radiology reporting and Long cases writing</p>	<p>Part 3A: Skills and OSCE, 6 stations</p> <p>Part 3B: Viva, 4 stations / each 30 minutes</p> <p>Both segments taken together as single examination</p>
<p>Candidates require at least 12 months of Radiology training experience</p>	<p>Pass MICR part I, and</p> <p>Candidates need to have completed at least 24 months of radiology training</p>	<p>Pass MICR part II (2A, 2B)</p> <p>Candidates need to have completed at least 36 months of radiology training</p>
<p>Each module can be taken separately in different sittings or together in one sitting</p>	<p>Part 2A and 2B taken separately</p>	<p>Candidates examined in direct presence of examiners, 1 sitting</p>
<p>Please see latest notifications</p>	<p>Please see latest notifications</p>	<p>Please see latest notifications</p>

**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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