

# First Examination for the Fellowship in Clinical Radiology

## Guidance Notes for Candidates

### 1 Examination Structure

The First FRCR examination comprises two modules: Anatomy and Physics. Anatomy is examined by an image viewing session delivered on individual workstations and Physics by a multiple choice written question (MCQ) paper. Both modules are held over a two day period, three times each year: normally in March, June and September. The two modules are each held on separate days.

A candidate may attempt the modules at the same sitting or at separate sittings and may pass them either together or separately in any order. A candidate will be deemed to have achieved success at the First FRCR once both modules have been passed.

From Spring 2015 no candidate will automatically be permitted more than six attempts at any FRCR examination or examination module. In order to attempt an examination or examination module for a seventh, or further, time candidates will have to demonstrate additional educational experience. Any examination or examination module a candidate has previously taken counts towards his or her six attempts i.e. the rule is backdated to include previous attempts.

### 2 Entry Requirements

Applicants need to hold a formal clinical radiology training post in which they are actively receiving clinical radiology training (or to have held such a post in the past) in order to enter the First FRCR examination. No minimum period of clinical experience or clinical radiology training is required in order to enter. No confirmation of course attendance is required. Candidates undergoing specialty training in the UK require approval of their Training Programme Director (TPD) prior to submitting an application for each time they attempt the examination.

No exemption is granted from the First FRCR examination on the basis of success in any other examination.

### 3 Candidate Numbers

The purpose of the examination is to provide a national assessment mechanism for those undergoing formal specialist training in clinical radiology in the UK, however the College appreciates that other radiologists wish to obtain the First FRCR examination for their own purposes. Candidates who are undergoing formal specialist training in the UK are guaranteed a place at the Anatomy module. Overseas trained candidates will be offered places not taken by UK trainees via a ballot system following the application closing date.

There is no cap on the number of candidates attempting the Physics module.

## 4 Physics Module

### 4a Venues

The examination is held at five UK venues (Belfast, Birmingham, Glasgow, London and Manchester) and two non-UK venues (Hong Kong and Singapore).

### 4b Content

The Physics MCQ paper comprises 40 questions. Candidates are given two hours to answer the paper. Candidates must write their candidate number in the space provided on the MCQ paper and record answers on a separate answer sheet using a HB pencil. Further instructions about completing the answer sheets are provided at examination venues. Candidates must not attempt to copy any examination materials or remove either the question paper or the answer sheet from the examination room; both must be returned to the invigilator at the end of the examination.

Each question comprises a stem (a question or statement) and five items (answers) labelled (a) to (e). Candidates are asked to determine whether each item is true or false. There is no restriction on the number of true or false items in a question. It is possible for all five items to be true or for all to be false. The examination is not negatively marked and therefore candidates are encouraged to offer an answer to all questions.

The current question distribution in the Physics paper is as follows

A Matter and Radiation (4)

B Radiography & Fluoroscopy (8)

C Radionuclide Imaging (6)

D Radiation Safety (8)

E Computed Tomography (4)

F Magnetic Resonance Imaging (5)

G Ultrasound (5)

Sample questions and a copy of the Physics answer sheet are available to give candidates the opportunity to familiarise themselves with question styles and examination materials in advance of the examination. Sections 4.22, 4.23 and 4.24 of the syllabus, relating to molecular imaging, are not currently examined.

### Change to the Ionisation Radiation Regulations

The new ionisation radiation legislation has been enacted. The updated regulations will be used as the basis of the questions in the Physics module of the First Examination for the 2018/19 academic year (i.e. from the Spring 2019 sitting) and for the foreseeable future. Teaching should now reflect the new regulations (see below).

- **Ionising Radiation Regulations 2017 (IRR17)** which has replaced Ionising Radiation Regulations 1999 (IRR99), and
- **The Ionising Radiation (Medical Exposure) Regulations 2017 [IR(ME)R 2017]** which has replaced The Ionising Radiation (Medical Exposure) Regulations 2000 [IR(ME)R 2000]

#### **4c Marking**

The Physics module is marked by computer. The marking system shown below is used:

For each item correctly answered	+1 mark
For each item incorrectly answered	0 marks

The standard for success is determined at each sitting based on the difficulty of the questions (using a criterion-referenced standard setting technique) and so may vary between sittings.

### **5 Anatomy Module**

#### **5a Venues**

The examination is held at five UK venues (Belfast, Birmingham, Glasgow, London and Stockport) and two non-UK venues (Hong Kong and Singapore).

#### **5b Content**

The Anatomy image viewing module comprises 100 images and associated questions. A single structure on each image will be indicated by one or more arrows with a single question on that structure. Candidates are given 90 minutes to view the images and record their answers. Further information about the module content is shown in the Anatomy advice document.

#### **5c Equipment and Software**

The Anatomy examination platform allows the provision of image-based exams, and capture of candidate responses, electronically. The platform provides a simple image viewing window and the ability to move through images. Candidates will record their responses directly via a keyboard and mouse onto the platform.

A demonstration site is available via the College website which enables candidates and trainers, to familiarise themselves with the platform in advance of the examination.

During the course of the examination, keystrokes and screen activity are monitored and recorded centrally. If a candidate continues to type after the end of the examination, this information will be recorded and the College will investigate further to determine whether the candidate should be disqualified. In the unlikely event of computer hardware or software failure during the examination, candidates should alert an invigilator by raising their hand – spare workstations are available if necessary.

#### **5d Marking**

The platform uses automated marking, which is programmed with acceptable Anatomy answers. The answers will be matched with candidate responses and marks awarded by the system accordingly. Any answers that do not exactly match those within the platform will be reviewed by examiners and awarded an appropriate mark. Anatomy examiners will review all responses prior to results awarding.

The marking system shown below is used:

For each item answered with complete accuracy	+2 marks
For each item answered with less accuracy, but still correctly	+1 mark
For each item answered incorrectly	0 mark

The standard for success is determined at each sitting based on the difficulty of the questions (using a criterion-referenced standard setting technique) and so may vary between sittings and sets of images.

## **6 Equipment Required for the Examination**

Candidates are required to bring a HB pencil, pencil sharpener and eraser to the Physics examination. No writing equipment is required for the Anatomy examination.

## **7 Personal Belongings and Items on Desks**

Candidates must follow invigilators' instructions at examination venues regarding where to leave personal belongings. No personal belongings are permitted in the examination room. Neither the Royal College of Radiologists nor any other examination venue is able to accept responsibility for the safety of any items of personal belongings. Apart from the equipment described above and official examination documentation, no other belongings or documents may be brought to desks or workstations.

Candidates must not bring any electronic equipment, eg laptop or palmtop computers, to the examination. All mobile telephones must be turned off for the duration of the examination and left in bags or coats. Candidates must turn off any alarm set on mobile telephones as these can operate even when the device is turned off; any timing device that emits an audible "beep" must have this facility disabled for the duration of the examination.

Candidates are permitted a still (non-carbonated) drink on their desks during the Physics module, but no food items. Candidates with special medical needs requiring them to eat throughout the Physics module should advise the College of this when submitting their application via a covering note.

Candidates are not permitted to bring drinks, or other refreshments or food items, into the Anatomy examination room to safeguard the electronic equipment from accidental damage. Candidates with special medical needs requiring them to eat and/or drink throughout the Anatomy module should advise the College of this when submitting their application via a covering note.

## **8 Candidate Identification**

Candidates are required to bring their candidate timetable (which shows their candidate number and details of when/where they are sitting the examination) to the examination, together with a form of identification that bears the candidate's photograph, full name and signature. Candidates that are not registered with the General Medical Council must bring their passport. Details on identification documents must match those supplied at application.

## **9 Examination Results**

The list of successful candidates by candidate number only, both overall and by module, will be published on the College website. Results will not be available by telephone or fax. All candidates will be sent a letter confirming examination results (by first class or air mail) as soon as possible after the results have been published.

Pass list publication dates can be found on the website - this information will also be included on individual candidate timetables that are sent out as soon as possible after the application closing date.

All candidates will receive details of scores achieved in each module and the level of performance that was required to achieve success. Candidates undertaking specialty training in the UK will have their results copied to the relevant TPD and Regional Specialty Adviser (RA) for information.

## **10 Candidate Conduct**

Candidates are expected to behave in a reasonable and respectful manner throughout all College examinations. Candidates must comply with the instructions and requirements of the examination invigilators, College staff and examiners at all times. Please note the following:

- Candidates attempting to make a copy of, or transmit, any examination materials will be disqualified. This includes writing details of the cases shown.
- Candidates found with any electronic device during the examination will be disqualified.
- Candidates refusing to stop writing on or amending their answer sheets after the examination has ended will be disqualified.

## **11 Further Information**

Queries arising from this document should be addressed to the College's Examinations Office, either by email to [examinations@rcr.ac.uk](mailto:examinations@rcr.ac.uk) or by telephone on 020 7406 5905.

Queries at the time of the examination should be raised with the invigilators or College staff present.

Comments, feedback or complaints following the examination should be brought to the attention of the Examinations Manager, either by email to [laura\\_mcgarry@rcr.ac.uk](mailto:laura_mcgarry@rcr.ac.uk) or by telephone on 020 7406 5947.