Advance information June 2022

A-level Physics (7408)

Version 1.0

Because of the ongoing impacts of the Coronavirus (COVID-19) pandemic, we are providing advance information on the focus of June 2022 exams to help students revise.

This is the advance information for A-level Physics (7408)].

Information

- This advance information covers all examined components.
- For each paper the list shows the major focus of the content of the examination; the topic areas are listed in rank order, with the areas carrying the highest mark allocations at the top of each list.
- Topics not explicitly given in the list may appear in multiple-choice items, low tariff questions, or via synopticity.
- Assessment of practical skills (section 8.3 of the specification) and maths skills (section 6 of the specification) occurs throughout the three papers.
- It is **not** permitted to take this advance information into the examination.

Advice

- Students and teachers should consider how to focus their revision of other non-listed parts of the specification, which may be tested in lower mark questions.
- Students will still be expected to apply their knowledge to unfamiliar contexts.
- Students will be expected to draw on knowledge, skills and understanding from across the specification when responding to synoptic questions.

Focus of the June 2022 exam

The inclusion of Required Practicals in the lists below should not be taken to imply direct references to those procedures quoted in the Practical Handbook. They are there to give a general idea of the context in which practical work is being assessed.

Paper 1 7408/1

- 3.2.1 Particles
- 3.4.1 Force, energy and momentum
- 3.5.1 Current electricity
- 3.6.1 Periodic motion
- 3.2.2 Electromagnetic radiation and quantum phenomena

Paper 2 7408/2

- 3.6.2 Thermal physics
- 3.8.1 Radioactivity
- 3.7.5 Magnetic fields
- 3.7.2 Gravitational fields

Paper 3 7408/3A + 7408/3BA (Astrophysics route)

- 3.6.2 Thermal physics (including Required Practical 8)
- 3.5.1 Current electricity (including Required Practical 5)
- 3.4.2 Materials (including Required Practical 4)

- 3.9.3.1 Doppler effect
- 3.9.3.2 Hubble's law
- 3.9.1.1 Astronomical telescope consisting of two converging lenses
- 3.9.2.2 Absolute magnitude, *M*

Paper 3 7408/3A + 7408/3BB (Medical physics route)

- 3.6.2 Thermal physics (including Required Practical 8)
- 3.5.1 Current electricity (including Required Practical 5)
- 3.4.2 Materials (including Required Practical 4)

- 3.10.2.2 Sensitivity and frequency response
- 3.10.5.3 Absorption of X-rays
- 3.10.4.3 Magnetic resonance (MR) scanner
- 3.10.1.2 Defects of vision and their correction using lenses

Paper 3 7408/3A + 7408/3BC (Engineering physics route)

- 3.6.2 Thermal physics (including Required Practical 8)
- 3.5.1 Current electricity (including Required Practical 5)
- 3.4.2 Materials (including Required Practical 4)

- 3.11.1.2 Rotational kinetic energy
- 3.11.2.4 Engine cycles
- 3.11.2.6 Reversed heat engines

Paper 3 7408/3A + 7408/3BD (Turning points in physics route)

- 3.6.2 Thermal physics (including Required Practical 8)
- 3.5.1 Current electricity (including Required Practical 5)
- 3.4.2 Materials (including Required Practical 4)

- 3.12.1.4 Principle of Millikan's determination of the electronic charge, *e*
- 3.12.2.2 Significance of Young's double slits experiment
- 3.12.3.5 Mass and energy

Paper 3 7408/3A + 7408/3BE (Electronics route)

- 3.6.2 Thermal physics (including Required Practical 8)
- 3.5.1 Current electricity (including Required Practical 5)
- 3.4.2 Materials (including Required Practical 4)

- 3.13.4.1 Inverting amplifier configuration
- 3.13.5.1 Combinational logic
- 3.13.6.4 Amplitude (AM) and frequency modulation (FM) techniques

END OF ADVANCE INFORMATION