



**L-Università  
ta' Malta**

**MATSEC  
Examinations Board**



## **Examiners' Report IM PHYSICS**

**First Session 2025**

## TABLE OF CONTENTS

|                                  |   |
|----------------------------------|---|
| A. STATISTICAL INFORMATION ..... | 1 |
| B. GENERAL REMARKS .....         | 1 |

## A. STATISTICAL INFORMATION

The total number of candidates who registered for the IM Physics exam was 341. Their overall performance was similar to last year, with a median mark of 49. However, it should be noted that 48 more students registered for the exam this year compared to last year. The number of absentees was also similar to that of the previous year.

As in past years, some candidates were very well-prepared, while others performed poorly. Many students struggled in Section A, particularly with questions on electrical circuits and point charges. Weak performance was also noted in the analytical part of the question on pressure.

In Section C, the most popular questions were those on radioactivity—where many students scored relatively well—and on waves. In contrast, the question on magnetic fields was attempted by fewer candidates.

| GRADE      | A   | B    | C    | D    | E    | F    | ABS  | TOTAL |
|------------|-----|------|------|------|------|------|------|-------|
| NUMBER     | 23  | 41   | 68   | 40   | 39   | 75   | 55   | 341   |
| % OF TOTAL | 6.7 | 12.0 | 19.9 | 11.7 | 11.4 | 22.0 | 16.1 | 100   |

## B. GENERAL REMARKS

### *Question 1*

In general, candidates answered both parts (a) correctly. However, some responses included the incorrect examples for scalars and vectors. Parts b(i) and b(ii) were generally well answered, while part b(iii) was wrongly answered by the majority of the candidates.

### *Question 2*

The majority of candidates performed well in parts (a) and (d). Some marks were lost in parts (b) and (c) related to the forces acting outside the nucleus of an atom.

### *Question 3*

As regards the question related to Pressure, parts (a) and (b) were generally answered correctly. For part (c) many responses included errors in the calculations or wrong assumptions which led to incorrect answers.

### *Question 4*

In general, candidates performed well in this question. Some candidates performed poorly in the stress-strain graph sketching.

### *Question 5*

The majority of candidates answered part (a) well. However, many marks were lost in part (b) indicating lack of understanding of how internal resistance affects the way a car battery functions

and transmission of current through high tension cables. Performance in parts (c) and (d) was generally adequate but lacked some detail.

*Question 6*

Although many candidates performed well in part(a), many marks were lost in part (b) which involved calculations. Many errors were noted, particularly the use of incorrect values of the distance between point X and the two different charges.

*Question 7*

This question was generally well answered, with some marks being lost in part (b) since a number of responses erroneously stated that EMF and the angle between the velocity and the magnetic field are directly proportional without proper explanation.

*Question 8*

Many candidates did well in this question. Some candidates' attempt in part (b) was adequate but insufficient.

*Question 9*

Many candidates answered parts (a) and (b) well. Many candidates correctly identified the graph as being a curve and presented a well drawn graph. Some candidates plotted the points well but then drew a straight line through the points. Many marks were lost in part (d) since very few candidates drew the tangent at the point on the graph indicated in the question. Part (d) was adequately well answered, although "connecting the ammeter in series" or "connecting the voltmeter in parallel" were not considered as correct precautions.

*Question 10*

This was a popular question among the candidates. The majority of candidates managed to score fairly well in all parts of the question indicating a good level of understanding of radioactivity. Some marks were lost in the last part which involved mathematical calculations.

*Question 11*

This question was chosen by many candidates and performance in part was good. In part (b) many marks were lost when candidates were requested to sketch the corresponding velocity-time graph. In part (c), very few candidates explained correctly what a driver oscillator and driven oscillating system is. And in part (d), many candidates gave incomplete and/or incorrect definition of resonance. Some responses indicated lack of knowledge about where resonance can be advantageous and/or unwanted.

*Question 12*

In this question, parts (a) and (b) were generally well answered. However, many marks were lost in parts (c) and (d). The responses given for these parts were either very limited or irrelevant indicating lack of familiarity with the procedure adopted and the readings taken when measuring the latent heat of vaporisation of a liquid. In part (e), many candidates indicated experimental errors, some of which were sometimes irrelevant, and stopped short from stating how they can be addressed. Part (e) was adequately answered, but for part (f), some responses were given in seconds, whereby the question requested the number of minutes.

*Question 13*

This was the least popular question. Some candidates gave inadequate responses for the derivation requested in part (a). Part (b) was fairly well answered. In part (c) many candidates performed well, although some candidates checked the homogeneity of the equation instead of deriving the equation. In part (d), marks were lost in part (ii), but good performance was noted in the rest of this part question which involved mathematical calculations.

**Chairperson**

**Examination Panel 2025**