

物理科 Physics



中三選科科目簡介 1617
S3 ELECTIVE SUBJECT INTRODUCTION 1617

ENOCH W N LEE

課程內容 Curriculum



- **必修 Compulsory**
 - 熱和氣體 Heat and Gases
 - 力學 Mechanics
 - 波動 Waves
 - 電和磁 Electricity and Magnetism
 - 放射與核能 Radioactivity and Nuclear Radiation
- **選修 Elective (4選2) (2 out of 4)**
 - 天文學與航天科學 Astronomy and Space Science
 - 原子世界 Atomic World
 - 能源與使用 Use of Energy
 - 醫學物理 Medical Physics

考試 Examination

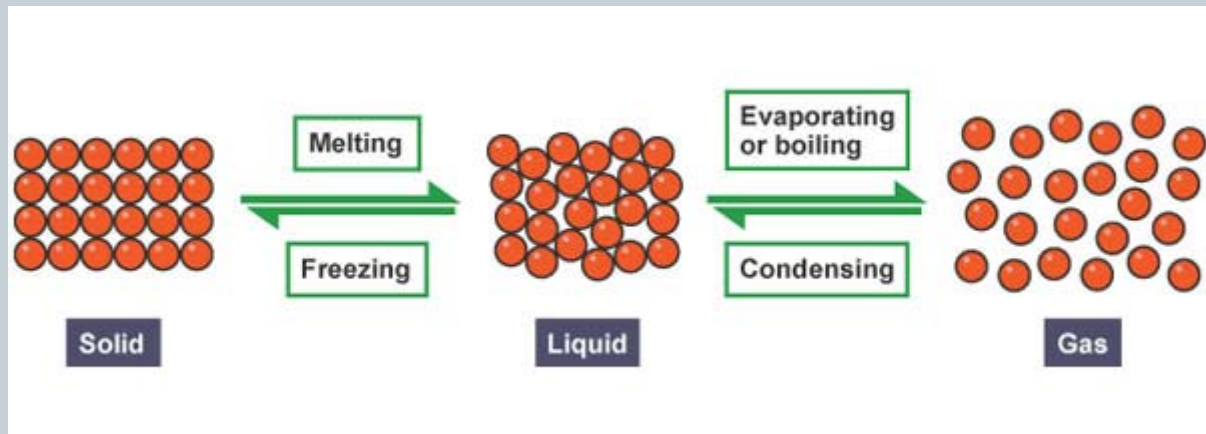


	Weighting	Time
HKDSE 卷一 Paper I 包括必修內容 Include Compulsory Sessions	60%	2.5 hr
HKDSE 卷二 Paper II 包括兩個選修單元 Include 2 Elective Sessions only	20%	1 hr
校本評估 SBA 進行實驗及撰寫實驗報告 Conduct Experiments and write reports	20%	n/a

What is DSE Physics?



- **Example: Heat and Gases (熱和氣體)**
 - 熔化 Melting
 - 汽化 Boiling
 - 凝結 Condensing
 - 凝固 Freezing



- 用文字描述狀態 Describe the states of matter
- 計算所需能量 Calculate the required energy

Example of Exam question - 2012

泡沫咖啡是鋪有一層鮮奶泡沫的意大利咖啡(圖 1.1)。



圖 1.1

將水蒸氣吹進金屬杯盛著的鮮奶可製成鮮奶泡沫(圖 1.2)。水蒸氣則從泡沫咖啡機的蒸氣噴嘴噴出(圖 1.3)。



圖 1.2



圖 1.3

已知： 水的汽化比潛熱 = $2.26 \times 10^6 \text{ J kg}^{-1}$
 水的比熱容 = $4200 \text{ J kg}^{-1} \text{ }^\circ\text{C}^{-1}$
 水蒸氣的比熱容 = $2000 \text{ J kg}^{-1} \text{ }^\circ\text{C}^{-1}$
 鮮奶的比熱容 = $3900 \text{ J kg}^{-1} \text{ }^\circ\text{C}^{-1}$

(a) 當 20 g 溫度為 110°C 的水蒸氣冷卻至 100°C 並凝結為 100°C 的水，計算所釋放出的總熱量。(3 分)

1. Cappuccino is an Italian style coffee topped with a layer of frothy milk (Figure 1.1).



Figure 1.1

Frothy milk is made by bubbling steam through milk, which is held in a metallic jug (Figure 1.2). Steam is ejected from the steam wand of a cappuccino machine (Figure 1.3).



Figure 1.2



Figure 1.3

Given: specific latent heat of vaporization of water = $2.26 \times 10^6 \text{ J kg}^{-1}$
 specific heat capacity of water = $4200 \text{ J kg}^{-1} \text{ }^\circ\text{C}^{-1}$
 specific heat capacity of steam = $2000 \text{ J kg}^{-1} \text{ }^\circ\text{C}^{-1}$
 specific heat capacity of milk = $3900 \text{ J kg}^{-1} \text{ }^\circ\text{C}^{-1}$

(a) Calculate the total amount of heat released when 20 g of steam at 110°C cools to 100°C and condenses to water at 100°C . (3 marks)

歷年成績 DSE Results



	HK
2012	88.8%
2013	90.3%
2014	
2015	90.0%
2016	90.9%

科目出路 Future Path



- 升讀學士課程 **Study University Degree**
 - 工程科 **Engineering**
 - 理科 **Science**
 - 某些經濟/金融科 **Some Finance/Economics Courses**
- 升讀其他課程 **Other courses (Dip, High Dip, etc)**

你適合嗎? Are you suitable?



- 最低要求 **Minimum Requirement**

	English	中文	物理 Physics	數學 Mathematics
EMI Student	60	/	70	85
華語學生	/	50	70	85

- 想像力 **Imagination**

- 執著 **Persistent**

Do you like Physics?



1. EINSTEIN GOT SLAPPED IN A TRAIN
2. EDISON GOT HIT BY AN APPLE
3. NEWTON SAID GENIUS IS ONE PERCENT INSPIRATION AND 99 PERCENT PERSPIRATION.

WHICH ONE IS WRONG?