



PHYSICS SPM 2009: “We Can Do It”

TEST SPECIFICATION TABLE

No.	SUBJECT	PAPER 1 (4531/1)	PAPER 2 (4531/2)	PAPER 3 (4531/3)
1	Types of instrument	Multiple choice questions	Subjective Test	Written Practical
2	Types of items	Objective: Multiple Choice	Subjective items: Section A: Structured items Section B: Limited response items and open response items Section C: Limited response items and open response items	Subjective items: Section A: Structured items Section B: Open response items
3	Number of questions	50 (Answer all) 1 MARK EACH	Section A: 8 (answer all) 60 MARKS Section B: 2 (Choose one) 20 MARKS Section C: 2(Choose one) 20 MARKS	Section A: 2(answer all) 28 MARKS Section B: 2(Choose one) 12 MARKS
4	Total marks	50	100	40
5	Test duration	1 hr 15 minutes	2 hr 30 minutes	1 hr 30 minutes
6	Construct weightage	Knowledge: 28 % Understanding: 40 % Application : 32 %	Knowledge: 11% Understanding: 16% Application 18% Problem solving: 22% (Quantitative, Qualitative) Conceptualization Decision making: 17%	Decision making : 100% (Experiment)
7	Sample item based on construct	Refer to sample instrument Paper 4531/1 and attachment 1	Refer to sample instrument Paper 4531/2 and attachment 2	Refer to sample instrument Paper 4531/3 and attachment 3
8	Marking	Dichotomous Mark 1 or 0	Analytical method of marking based on scoring rubric.	Analytical method of marking based on scoring rubric.
9	Scope of Context	Assessment is made for all constructs within field of studies	Assessment is made for all constructs within field of studies	Assessment is made for all constructs within field of studies
10	Difficulty level	L M H 60% 24% 16%	L M H 38% 35% 27%	L M H 50% 30% 20%
	Low : L Medium: M High : H	Overall L : M : H = 5 : 3 : 2		
11	Additional accessories	Scientific calculator	Scientific calculator	Scientific calculator, Protractor ruler 30 cm, Compass

CHAPTER	FORM 4 TOPICS		Learning Objectives
1.INTRODUCTION TO PHYSICS	1.1 Understanding Physics		5
	1.2 Understanding Base Quantities and Derived Quantities		
	1.3 Understanding scalar and vector quantities		
	1.4 Understanding Measurements		
	1.5 Analysing Scientific Investigation		
2. FORCE AND MOTION	2.1 Analysing Linear Motion		12
	2.2 Analysing Motion Graph		
	2.3 Understanding Inertia		
	2.4 Analysing Momentum		
	2.5 Understanding the Effects of a Force		
	2.6 Analysing Impulse and Impulsive Force		
	2.7 Being aware of the Need for safety feature in Vehicles		
	2.8 Understanding Gravity		
	2.9 Analysing Force in Equilibrium		
	2.10 Understanding Work, Energy, Power and Efficiency of devices		
	2.11 Appreciating the Importance of Maximizing the Efficiency of Devices		
	2.12 Understanding Elasticity		
3. FORCE AND PRESSURE	3.1 Understanding pressure		6
	3.2 Understanding Pressure in Liquids		
	3.3 Understanding Gas Pressure and Atmospheric Pressure		
	3.4 Applying Pascal's Principle		
	3.5 Applying Archimedes' Principle		
	3.6 Understanding Bernoulli's Principle		
4. HEAT	4.1 Understanding Thermal Equilibrium		4
	4.2 Understanding Specific Heat Capacity		
	4.3 Understanding Specific Latent Heat		
	4.4 Understanding Gas Law		
5. LIGHT	5.1 Understanding Reflection of Light		4
	5.2 Understanding Refraction of Light		
	5.3 Understanding Total Internal Reflection		
	5.4 Understanding Lenses		
	Total Number of Learning Objectives in Form4		31

CHAPTER	FORM 5 TOPICS		Learning Objectives
6. WAVE	6.1 Understanding waves		7
	6.2 Analysing Reflection of waves		
	6.3 Analysing Refraction of Waves		
	6.4 Analysing Diffraction of Waves		
	6.5 Analysing Interference of Waves		
	6.6 Analysing Sound Waves		
	6.7 Analysing Electromagnetic Waves		
7. ELECTRICITY	7.1 Analysing Electric Field and Charge Flow		5
	7.2 Analysing the Relationship between Electric Current and Potential Difference		
	7.3 Analysing Series and Parallel Circuits		
	7.4 Analysing Electromotive Force and Internal Resistance		
	7.5 Analysing Electrical Energy and Power		
8. ELECTROMAGNETISM	8.1 Analysing the Magnetic Effect of a Current-carrying Conductor		5
	8.2 Understanding the Force on a Current-carrying Conductor in a Magnetic Field		
	8.3 Analysing Electromagnetic Induction		
	8.4 Analysing Transformers		
	8.5 Understanding the Generation and Transmission of Electricity		
9. ELECTRONIC	9.1 Understanding the Uses of the Cathode Ray Oscilloscope (CRO)		4
	9.2 Understanding Semiconductor Diodes		
	9.3 Understanding Transistor		
	9.4 Analysing Logic Gates		
10. RADIOACTIVITY	10.1 Understanding the Nucleus of an Atom		5
	10.2 Analysing the Use of Radioactive Decay		
	10.3 Understanding the Use of Radioisotopes		
	10.4 Understanding Nuclear Energy		
	10.5 Realising the Importance of Proper Management of Radioactive Substances		
Total Number of Learning Objectives in Form 5		26	
Total Number of Learning Objectives in Form 4 and Form 5		57	

Physics Panel
 SMT Kuala Klawang
 Negeri Sembilan Darul Khusus