

Academic Year	2023/2024
العام الدراسي	
Term	1
المصطلح	
Subject	Physics/Inspire
المادة	الفيزياء/الإنسباير
Grade	10
الصف	
Stream	Advanced
المسار	المتقدم
Number of MCQ	15
عدد الأسئلة الموضوعية	
Marks of MCQ	4
درجة الأسئلة الموضوعية	
Number of FRQ	5
عدد الأسئلة المقالية	
Marks per FRQ	(6-9)
الدرجات للأسئلة المقالية	
Type of All Questions	MCQ/ الأسئلة الموضوعية
نوع كافة الأسئلة	FRQ/ الأسئلة المقالية
Maximum Overall Grade	100
الدرجة القصوى الممكنة	
Exam Duration - مدة الامتحان	150 minutes
طريقة التطبيق - Mode of Implementation	Paper-Based
Calculator	Allowed
الآلة الحاسبة	مسموحة

Question*	Learning Outcome/Performance Criteria**		Reference(s) in the Student Book ( English Version)		
			المرجع في كتاب الطالب (النسخة الانجليزية)		
	السؤال*	نتائج التعلم / معايير الأداء**	Example/Exercise	Page	الصفحة
الأسئلة الموضوعية - MCQ	1	Define periodic motion and quantities associated with periodic motion like period and amplitude.	Student Book	4	
			Q8, Q13	9	
	2	1- Determine what affects the period of a simple pendulum. 2- Apply the equation ( ) to calculate the period of a simple pendulum for small-angle oscillations.	Student Book	8-9	
			Q5-Q7, Q11	9	
	3	1- Apply the law of conservation of energy for both a horizontal oscillating mass-spring system and simple pendulum to relate the total energy of each system at one instant to the total energy at another instant. 2- Describe the energy transformations between potential energy and kinetic energy for both a horizontal oscillating mass-spring system and a simple pendulum.	Student Book	5-7	
			Q9, Figure 3	9	
	4	Differentiate between transverse, longitudinal, and surface waves and give examples.	Student Book	10-11	
			Q25-Q27	15	
	5	1- Relate the wavelength, frequency, and the speed of a sound wave by the equation $v = f \lambda$ . 2- Conduct an experiment to investigate the speed of sound .	Student Book	11-14	
			Q14-Q23	15	
	6	Describe the sound level and define the decibel (dB) as a unit of measuring sound level.	Student Book	31-32	
			Q9	35	
	7	Define sound pitch and relate it to the frequency of a sound wave.	Student Book	31-32, 37-40	
			Q6-Q8, Q13	35, 42	
	8	Calculate the Doppler shifted frequency of a sound or light wave by an observer in relative motion with the source.	Student Book	32-35	
Q1-Q5			34		
9	Evaluate the resonant frequencies in strings and air pipes (open- and closed-pipe resonators).	Student Book	37-42		
		Q13-Q16, Q18-Q19, Q21	42, 46		
10	1- Explain that the speed of sound varies with different mediums and temperatures. 2- Use the relation between resonance length and wave length to solve problems for closed and open pipes.	Student Book	29-30, 37-40		
		Q14-Q15	42		
11	Sketch the electric field lines to model the electric field around single point charges (positive or negative) and for a pair of electric charges	Student Book	70-71		
		Figure 19 & Figure 20			
12	Demonstrate knowledge of electrostatic charge, differentiate materials based on their electrical conductivity, and describe the methods of electrical charging of objects	Student Book	52-55		
		Q1-Q8	56		
13	Demonstrate an understanding that the spacing between the field lines indicates the strength of the electric field in a given region.	Student Book	66-67, 70-71		
		Q38	72		
14	Develop a tool, sketches, descriptive text or presentation to show the morphology of electric field lines of a single or multiple charge system with positive and/or negative charges.	Student Book	70		
		Figure 19 & Figure 20	70-71		
15	Develop a tool, equation, or sketch, to obtain the resultant electric field strength at a point generated by a nearby system of point charges using the superposition principle.	Student Book	67-69		
		Q24-Q37	68-69		
الأسئلة المقالية - FRQ	16	1- Apply Hooke's law to calculate the force exerted by a spring, the spring constant, or the distance by which a spring is stretched or compressed. 2- Solve problems related to an oscillating mass . spring system and a simple pendulum to calculate different physical quantities (velocities, kinetic energy, potential energy, period or length of simple pendulum...).	Student Book	4-7	
			Q1-Q4; Q9	7; 9	
	17	1- Sketch snapshots for the superposition of two overlapping wave pulses (same wavelength) traveling in opposite directions showing the resultant wave. 2- Determine wave properties such as wavelength, period, frequency, amplitude, and speed using a graphical or a visual representation of a periodic mechanical wave.	Student Book	17-18; 10-14	
	18	1- Compare the wavelengths and resonant frequencies for pipes with closed ends with those for open end pipes (open- and closed-pipe resonators). 2- Discuss resonance frequencies and column lengths for a closed pipe and an open pipe.	Student Book	37-40	
			Q13-Q16, Q18-Q19, Q21	42, 46	
19	1- Solve problems involving the electrostatic force acting on charged particles by making use of Coulomb's Law 2- Develop a tool, equation or sketch, to obtain the resultant electric force exerted on a point charge by a nearby system of charges using the superposition principle.	Student Book	61-64		
		Q13-Q14, Q22-Q23	64, 65		
20	1- Distinguish between electrical conductors and insulators giving typical examples. 2- Explore the Doppler effect of sound or light.	Student Book	55-56, 32-35		
*	Questions might appear in a different order in the actual exam.				
*	قد تظهر الأسئلة بترتيب مختلف في الامتحان الفعلي.				
**	As it appears in the textbook, LMS, and (Main_IP).				
**	كما وردت في كتاب الطالب وLMS والبطاقة الفصلية .				