Academic Year	2024/2025
العام الدراسي	
Term	1
الفصل	
Subject	Physics C 102
المادة	فيزياء C 102
Grade	12
الصف	
Stream	Advanced
المسار	المتقدم
Number of Electronic Questions (Swift Assess)	15
عدد الأسئلة الإلكترونية (سويفت أسيس)	
Mark per Question	4
الدرجة لكل سؤال	
Number of Free Respones Questions (Paper Part)	5
عدد الأسئلة المقالية (الجزء الورقي)	
Mark per Question	8
الدرجة لكل سؤال	
Type of All Questions	Electronic Questions & Free Respones Questions
نوع كافة الأسئلة	أسئلة إلكترونية & أسئلة مقالية
Maximum Overall Grade	100
الدرجة القصوى الممكنة	
Exam Duration	150 minutes
مدة الإمتحان	
Mode of Implementation	Swift Assess & Paper Part
طريقة التطبيق	سويفت أسيس & جزء ورقي
Calculator	Allowed
الآلة الحاسبة	مسموحة

	Question* السؤال*		Learning Outcome Or KPI's** ناتج التعلم أو مؤشر الأداء**	Reference(s) in the Student Book (Arabic / English Version) المرجع في كتاب الطالب (النسخة العربية / الانجليزية) Example/Exercise مثال/تمرين	Page الصفحة
Swift Assess - سويفت أسيس	1		- Solve problems related to how charge is conserved - Show that charges are quantized - Solve problems related to how charge is quantized	As mentioned in the book	3, 4, & 6
	2		Distinguish between conductors, nonconductors (insulators), semiconductors, and superconductors	As mentioned in the book	6 & 7
	3		Describe how to charging of an object Demonstrate knowledge of charging objects and the properties of electrostatic charge and differentiate between conductors and insulators	As mentioned in the book	8 & 9
	4		Apply Coulomb's law to relate the magnitude of the electrostatic force, the charge magnitudes of the pair if interacting particles, and the separation between them	EXAMPLE 1.2 EXAMPLE 1.3 SOLVED PROBLEM 1.1 EXERCISES 1.83 & 1.84 p: 25	10, 11, 12,13,& 14
	5		Solve problems involving general charge disribution and the electric field 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 Find for a uniform distribution of charge, the linear charge density X for chargealong a line, the surface charge density o for charge on a surface, and the volume	As mentioned in the book MULTIPLE-CHOICE QUESTIONS 2.5	28, 29 & 30 34, 35 & 36 53
	6		Find for a uniform distribution of charge, the linear charge density X for chargealong a line, the surface charge density o for charge on a surface, and the volume	As mentioned in the book	34, 35 & 36
	7		Apply the relationship between the electric field E and the electric force F and the charge q	As mentioned in the book	37, 38 & 39
	8		Solve problems on electric flux Define the electric flux through a surface as the dot product between the electric field vector and the area vector at each point of that surface and expresses that in an equation	FIGURE 2.22 FIGURE 2.23	42
	9		Apply the relationship between the charge density and the electric field magnitude E and also specify the direction of the field for points near a flat thin, infinite or large, nonconducting/conducting surface with a uniform charge density	As mentioned in the book	47, 48 & 49
	10		Solve problems involving electric potential energy	As mentioned in the book FIGURE 3.2	60 & 61
	11		Develop a method such as schematic representations to compare the equipotential surfaces due to a point charge, two identical charges, and two different charges	FIGURE 3.17 FIGURE 3.18 FIGURE 3.19	67, 68 & 69
	12		Relate the component of the electric field along a certain direction Es to the change in the electric potential along that direction (Es =-dV/ds) and use this relation to solve problems	Concept Check 3.7	77
	13		Calculate the potential energy of a system of pair of charged particles	FIGURE 3.30	79 & 80
	14		Identify the symbolidentify the symbols of common curcuit elementss of common curcuit elements	FIGURE 4.8	90
	15		Solve problems on parallel plate capacitor	EXAMPLE 4.1	91, 92
			Important note: Please pay attention to specifying the units of measurement when solving problems, as grades will be calculated based on the units. Drawing relationships between variables, identifying and drawing the best fit line connecting the points, and finding values from the graph. **ملاحظة هامة: يرجى ضرورة الاهتمام بتحديد وحدات القياس عند حل المسائل، حيث سيرصد درجات على الوحدات كما يرجى تدريب الطلبة على رسم العلاقات بين المتغيرات وتحديد أفضل خط يصل بين النقاط وايجاد قيم من الرسم البياني**		
Paper Part - الجزء الورقي	Q1	A B	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	EXERCISES 1.82 p: 25	10, 11, & 12
	Q2	A B	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 Solve problems related to the electric field due to several point charges	As mentioned in the book	30 & 31
	Q3	A	Define the electric flux through a surface as the dot product between the electric field vector and the area vector at each point of that surface and expresses that in an equation (Solve problems on electric flux)	EXAMPLE 2.5	43
		B	Prove that the electric flux through a closed surface is given by the net charge inside the surface divided by the permittivity of the medium, and write the Gauss's law in its integral form (Apply Gauss' law to relate the net flux through a closed surface (real or imaginary) to the net charge enclosed by the surface)	As mentioned in the book	44, 45 & 46
	Q4	A B	Develop a mathematical equation to describe the electric potential of a point charge or many point charges or distributions of different charges	As mentioned in the book FIGURE 3.21	70 & 71 79 & 80
	Q5	A B	Define the electric capacitance of a conductor as the quotient of division of the electric charge on the conductor by the electric potential on the conductor, and express that in an equation Apply the relationship between the magnitude of charge q on either plate of a capacitor, the potential difference ΔV across the capacitor, and the capacitance C of the capacitor	As mentioned in the book	88 & 89

* 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 scheme of work (SoW).

** كما وردت في كتاب الطالب وLMS والخطة الفصلية.