

Academic Year السنة الدراسية	2023/2024
Term المصطلح	1
Subject المادة	Physics فيزياء
Grade الصف	12
Stream القطاع	Advanced المتقدم
Number of Electronic Questions (Swift Assess) عدد الأسئلة الإلكترونية (سويث أسس)	15
Mark per Question الدرجة لكل سؤال	4
Number of Free Responses Questions (Paper Part) عدد الأسئلة المفتوحة (الجزء الورقي)	5
Mark per Question الدرجة لكل سؤال	8
Type of All Questions نوع كافة الأسئلة	Electronic Questions & Free Responses Questions أسئلة إلكترونية & أسئلة مفتوحة
Maximum Overall Grade الدرجة القصوى الممكنة	100
Exam Duration مدة الامتحان	150 minutes
Mode of Implementation طريقة التطبيق	Swift Assess & Paper Part سويث أسس & جزء ورقي
Assessments التقييمات	Allowed مسموحة

Question* السؤال*	Learning Outcome (LO)* النتائج المتوقعة لمؤشر الأداء*		Reference(s) in the Student Book (Arabic / English Version) المرجع في كتاب الطالب (النسخة العربية / الإنجليزية)	
			Example/Exercise مثال/تمرين	Page الصفحة
سويث أسس (Swift Assess)	1	Solve problems related to how charge is conserved. Show that charges are quantized. Solve problems related to how charge is quantized.	EXAMPLE 1.1	3, 4, 5, & 6
	2	Distinguish between conductors, nonconductors (insulators), semiconductors, and superconductors	As mentioned in the book	6 & 7
	3	Describe the charging of an electroscope by contact and by induction	FIGURE 1.10 FIGURE 1.11	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	10, 11, & 12
	10		SOLVED PROBLEM 1.1 EXERCISES 1.83 & 1.84 p. 25	14
	14		EXAMPLE 1.3	13
	5	Find for a uniform distribution of charge, the linear charge density λ for charging a line, the surface charge density σ for charge on a surface, and the volume	As mentioned in the book	34
	6	Apply the relationship between the electric field E and the electric force F and the charge q	SOLVED PROBLEM 2.2 Concept Check 2.5	38 & 39 37
	11			
	12	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	FIGURE 2.34 FIGURE 2.35	47, 48 & 49
	7	Solve problems involving a charged particle placed in a region with electric potential difference ΔV , and apply the law of conservation of energy to relate different energies (or energy differences) existing in the system like change in KE, change in Electric potential energy, and work done by a force	EXAMPLE 3.1	62 & 63
	8	Relate the component of the electric field along a certain direction to the change in the electric potential along that direction ($E_x = -dV/dx$) and use this relation to solve problems	Concept Check 3.7	77
	9	Calculate the potential energy of a system of pair of charged particles	As mentioned in the book	79 & 80
	13	Solve problems on parallel plate capacitor	EXAMPLE 4.1	91, 92
	15	Identify the symbols of common circuit elements	FIGURE 4.8	90
الجزء الورقي (Paper Part)	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	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) 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)	EXAMPLE 2.5 As mentioned in the book 44 & 45
	Q3	A B C	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 Develop a method such as schematic representations to compare the equipotential surfaces due to a point charge, two identical charges, and two different charges	Concept Check 2.1 FIGURE 2.7 FIGURE 2.8 FIGURE 3.14 FIGURE 3.18 FIGURE 3.19 26, 28, & 30 67, 68, & 69
	Q4	A B C	Develop a mathematical equation to describe the electric potential of a point charge or many point charges or distributions of different charges Develop a mathematical model to find the electric field from the electric potential Definition of an Electric Field	As mentioned in the book As mentioned in the book As mentioned in the book 70 & 71 77, 78 & 79 27
	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	As mentioned in the book 88 & 89
	Questions might appear in a different order in the actual exam.			
	لا تظهر الأسئلة بالترتيب مختلف في الامتحان الفعلي.			
	As it appears in the textbook, IML, and scheme of work (SOW).			
	كما يردت في كتاب الطالب و IML و الخطة الدراسية.			