Academic Year العام الدراسي	2023/2024
Term الفصل	3
Subject المادة	Physics/Bridge الفيزياء/ بريدج
Grade الصف	12
Stream	Advanced
المسار	المتقدم
Number of MCQ عدد الأسئلة الموضوعية	15
Marks per MCQ الدرجات لكل سؤال	4
Number ofFRQ عدد الأسئلة المقالية	5
Marks per FRQ الدرجات لكل سؤال	6--12
*** Type of All Questions نوع كافة الأسئلة	Part(1) MCQ
	Part (2) FRQ
* Maximum Overall Grade *الدرجة القصوى الممكنة	100
Exam Duration - مدة الامتحان	150 minutes
Mode of Implementation -طريقة التطبيق	SwiftAssess & Paper-Based
Calculator الآلة الحاسبة	Allowed مسموحة

	Question السؤال	Learning Outcome/ Peformance indicator (Topic) نتائج التعلم / مؤشر الأداء (عنوان)	Reference(s) in the Student Book المرجع في كتاب الطالب	
			Example/Exercise مثال/تمرين	Page الصفحة
MCQ الأسئلة الموضوعية	1	Describe experiments to show that changing magnetic field inside a conducting loop induces a current in the loop.	As mentioned in the textbook Q. 9.5	226 251
	2	Calculate the magnetic flux ϕ B through a given surface.	As mentioned in the textbook	227-228
	3	Describe, based on the equation of Faraday's Law, that potential difference could be induced in a loop either by varying the magnetic field 'B' with time (A and Θ are constant), changing the area 'A' of the loop with time (B and Θ are constant), or changing the angle 'Θ' between the magnetic field and the normal to the loop with time (A and B are constant), and demonstrate that by mathematical equations	As mentioned in the textbook	229-230
	4	State Lenz's Law as: 'An induced current in a loop will have a direction such that the magnetic field due to the induced current opposes the change in the magnetic flux that induces the current' Induced Potential Difference on a Wire Moving in a Magnetic Field Solve problems related to Lenz's Law, and motional emf	As mentioned in the textbook FIGURE 9.10	232-235
	5	Induced Potential Difference on a Wire Moving in a Magnetic Field Solve problems related to Lenz's Law, and motional emf Induced potential difference as a function of time for a generator	As mentioned in the textbook EXAMPLE 9.4 Q. 9.9	235-237 236 251
	6	Generators and Motors Identify electric generators and electric motors as everyday applications of electromagnetic induction and electromagnetic force.	As mentioned in the textbook FIGURE 9.20	239-240 240
	7	Induced Electric Field Solve problems related to induced electric field by changing magnetic flux.	As mentioned in the textbook	240-241
	8	Unit of inductance Define the inductance of a device as a measure of its opposition to changes in current flowing through it, measured in henry (H)	As mentioned in the textbok	240-241
	9	constant (T) in RL circuit Calculate the inductive time constant τRL for an RL circuit	As mentioned in the textbook SOLVED PROBLEM 9.3 Q. 9.49	245-246 246 254
	10	LC Circuits Recall that the energy stored in the electric field of a capacitor of capacitance C, at any instant, is given by . $U_E = \frac{1}{2}\frac{q^2}{C}$ Recall that the energy stored in the magnetic field of an inductor with inductance L, at any instant, is $U_B = \frac{1}{2}Li^2$	As mentioned in the textbook Q. 10.28 Q. 10.29	258-260 285
	11	Self-Induction Define self-induction and mutual induction	As mentioned in the textbook	242
	12	Mutual Induction Solve problems related to self-induction and mutual induction	As mentioned in the textbook SOLVED PROBLEM 9.2	242-244
	13	Alternating current circuit Describe the alternating sinusoidal current, induced in a circuit containing a sinusoidal time varying sour	As mentioned in the textbook FIGURE 10.8	264-265
	14	Single-loop circuit with a resistor and a source of time-varying emf varying voltage across the resistor, for a circuit consisting of a resistor and a source of time varying emf.	As mentioned in the textbook	264-265
	15	Derive an expression for the current across the resistor, in a circuit consisting of a resistor and a source of time varying emf, as $i_R = \frac{v_R}{R} = \frac{V_R}{R}\sin(\omega t) = I_R \sin(\omega t)$	As mentioned in the textbook	264-265
FRQ الأسئلة المقالية	1	Solve problems related to Self Inductance of a Solenoid	As mentioned in the textbook	241
	2	Apply the ideal transformer equation ($\frac{I_S}{I_P} = \frac{V_P}{V_S} = \frac{N_P}{N_S}$) to solve numerical problems.	As mentioned in the textbook	279-281
	3	Solve problems related to Mutual Induction of a Solenoid and a Coil	SOLVED PROBLEM 9.2	242-244
	4	Solve problems related to Lenz's Law	Example 9.3 and Example 9.4	236-237
	5	Solve problems related to LC oscillator showing the variations of charge, current, energy stored in electr	As mentioned in the textbook	258-260
**		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.		