Academic Year / العام الدراسي	2023/2024
Term / الفصل	2
Subject / المادة	Physics- Bridge / الفيزياء
Grade / الصف	9
Stream / المسار	Advanced / المتقدم
Number of MCQ / عدد الأسئلة الموضوعية	15
Marks of MCQ / درجة الأسئلة الموضوعية	4
Number of FRQ / عدد الأسئلة المقالية	5
Marks per FRQ / الدرجات للأسئلة المقالية	40
Type of All Questions / نوع كافة الأسئلة	MCQ/ الأسئلة الموضوعية FRQ / الأسئلة المقالية
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/Performance Criteria** / نتائج التعلم/ معايير الأداء**	Reference(s) in the Student Book / المرجع في كتاب الطالب	
		Example/Exercise / مثال/تمرين	Page / الصفحة
1	Determine the components of a vector in cartesian coordinate system using trigonometry	figure	126
2	Resolve a vector into two orthogonal vectors in cartesian coordinate system	as explained in the textbook	125
3	Draw the free body diagram and apply Newton's Second Law for an object moving on a horizontal surface involving friction	figure 4	130
4	Define the coefficients of kinetic and static friction. Distinguish between static and kinetic friction	27	135
5	Recall that for an object to be in equilibrium, the net force acting on it should be zero	77, 78	145
6	Describe the trajectory of a projectile	41	170
7	Solve problems related to friction	39	141
8	Apply the relationships that relate the normal force to maximum static friction and to kinetic friction to calculate unknown parameters like friction force, coefficient of friction or the normal force (Ff,static=μsN and Ff,kinetic=μkN).	69	145
9	Apply Newton's Laws along x and y axes for an object that moves on an inclined plane with and without friction	35	139
10	Explain the motion of horizontally launched projectiles, and show schematically the components of velocity and acceleration throughout the motion	figure 3	154
11	Solve problems on horizontally launched projectiles using equations of motion and the conditions of velocity and acceleration (vx=constant, ax=0).	Ex 1 and Q1	155-156
12	Explain Kepler's Second Law which states that an imaginary line from the Sun to a planet sweeps out equal areas in equal time intervals.	figure 3	179
13	Find the equilibrant being the force having equal magnitude as the resultant force but opposite direction	57	144
14	Apply Newton's second law of motion to derive an expression for the centripetal/central force in terms of tangential speed and radius of the circular path	20	163
15	Explain the law of universal gravitation and write it in equation form (Fg=(Gm1m2)/r2).	figure 5	182
16	Apply the relation of centripetal acceleration, tangential speed, and radius of circular path to calculate unknown parameters	59	171
17	Solve problems on projectiles launched at an angle using equations of motion and the conditions of velocity and acceleration, and given launching angle	Ex 2	157
18	Determine the resultant of two or more vectors algebraically by adding the components of the vectors and find its magnitude (R2 =Rx 2 + Ry 2) and direction (�=tan-1 (Ry/Rx))	64	145
19	Apply the relation of centripetal acceleration, tangential speed, and radius of circular path to calculate unknown parameters	12	162
20	Relate the centripetal acceleration to the object's speed and the radius of the circular path	figure 8 and 9	159-160

*	Questions might appear in a different order in the actual exam, or on the exam paper in the case of G3 and G4.
*	قد تظهر الأسئلة بترتيب مختلف في الامتحان الفعلي، أو على ورقة الامتحان في حالة الصفين G3 وG4.
**	As it appears in the textbook, LMS, and (Main_IP).
**	كما وردت في كتاب الطالب وLMS والخطة الفصلية .