Academic Year العام الدراسي	2025/2024
Term الفصل	①
Subject الموضوع	Physics (Bridge)
Grade الصف	11
Stream. المسار	General/ العام
Code	PHY-C-101-AR
Number Of MCQ عدد الأسئلة الموضوعية	15
Markes of MCQ درجة الأسئلة الموضوعية	4
Number of FRQ عدد الأسئلة المقالية	4
Marks Per FRQ الدرجات للأسئلة المقالية	8-12
Type of All Questions	MCQ/ الأسئلة الموضوعية
نوع كافة الأسئلة	FRQ/ الأسئلة المقالية
Maximum Overall Grade الدرجة القصوى الممكنة	100
Exam Duration مدة الامتحان	150 min
Mode of Implementation طريقة التطبيق	Paper-Based & Swift Assess.
Calculator	Allowed
الآلة الحاسبة	مسموحة



Question* السؤال*	Learning Outcome/Performance Criteria** ناتج التعلم/ معايير الأداء**	المرجع في كتاب الطالب (النسخة الانجليزية) Reference(s) in the Student Book (English Version)	
		Example/Exercise مثال/تمرين	Page صفحة
1	(1) Define centripetal acceleration. (2) Relate the centripetal acceleration to the object's speed and the radius of the circular path $a_c = \frac{v^2}{r}$.	Student Textbook Term 1	11,12
2	(1) Define the centripetal/central force. (2) Identify forces like tension, gravity, and friction that cause centripetal acceleration	Student Textbook Term 1	13
3	Relate the centripetal acceleration and the speed of an object in uniform circular motion to its period of revolution and use this relation to find unknown parameters. ($v = \frac{2\pi r}{T}$, $a_c = \frac{4\pi^2 r}{T^2}$)	Student Textbook Term 1 Q.(23),Q.(58, 60) Q.(9)	12 15,23 27
4	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.	Student Textbook Term 1	31
5	Apply Kepler's third Law to solve problems by finding unknown parameters.	Student Textbook Term 1 Example (1) Q.(6)	32 33
6	(1) Calculate the orbital speed of a satellite. (2) Calculate the orbital period of a satellite.	Student Textbook Example 2 / Q.(15, 17) Q.(21)	39 40 45
7	Calculate the gravitational field strength for an object of mass m at a distance r from its center and specify the units for gravitational field.	Student Textbook Term1 Q.(18.a)	42 45
8	(1) Define angular displacement. (2) Define a radian and convert degrees to radians and vice-versa. (3) Identify that counterclockwise motion is in the positive direction and clockwise motion is in the negative direction	Student Textbook Term1	56-57
9	Relate the linear acceleration (a) to the angular acceleration (α) and the distance (r) from the axis of rotation.	Student Textbook Term1 Q.[3 , 8]	58 59
10	(1) Define the term torque. (2) Identify that a torque on a body involves a force and a lever arm which is the perpendicular distance from the axis of rotation to the point where the force is applied	Student Textbook Term1 Q.(63)	60-61 81
11	(1) State the conditions for an object to be in static equilibrium- both translational and rotational equilibrium. (2) Solve problems related to objects in equilibrium	Student Textbook Term1 Example 2 / Q.(18) Example 5 / Q.(39)	63 , 73 64 / 65 74 / 75
12	(1) Define moment of inertia as the resistance to rotation. (2) Find the total moment of inertia due to many point masses. (3) Determine the moment of inertia of extended objects like the hoop, solid uniform cylinder, uniform sphere, long uniform rod and rectangular plate.	Student Textbook Term1 Example 3 Example 4 Q.(68)	65 - 66 67 69 81
13	(1) State newton's second law for rotational motion which relates the net torque on a body to the body's moment of inertia and rotational acceleration, all calculated relative to a specified axis of rotation. (2) Apply newton's second law for rotation to solve problems.	Student Textbook Term1 Example 4 Q.(29,30,33,66) Q.(66)	68 69 70 81
14	Apply the relationship between power, the work done by a force, and the time interval in which that work is done (P=W/t).	Student Textbook Term2 Example 3 Q.(10,13) / Q.(55)	95 96 96 / 109
15	(1) Apply the work–energy theorem to relate the net work done on a system and the resulting change in kinetic energy. (2) Solve problems related to work and kinetic energy.	Student Textbook Term 2 Q.(11)	94 96
16	❖ Demonstrate that the velocity vector at any time is tangent to the circular path for an object in uniform circular motion. ❖ Show how an object moving with a constant speed along a circle can have acceleration towards the center of the circular path. ❖ Apply the relation of centripetal acceleration, tangential speed, and radius of circular path to calculate unknown parameters. ❖ Apply the expression for centripetal/central force to solve problems on relevant systems.	Student Textbook Term 1 SECTION 2 REVIEW. Q (22.24) STP.MCQ. (2, 3 , 4)	11,12 15 27
17	❖ Apply the law of universal gravitation to calculate the gravitational force or other unknown parameters. ❖ Calculate the orbital period of a satellite.	Student Textbook Term 1 EXAMPLE. (2) SECTION 1 REVIEW. Q (9) CH 2 Assess.Q.[42,43] / Q. [68]	34,39 40 37 48 /50
18	❖ Relate the arc length (x) to the angular displacement (ɵ) and the distance (r) from the axis of rotation. ❖ Apply the relationship between average angular velocity, angular displacement, and the time interval for that displacement. ❖ Solve problems that involve torque.	Student Textbook Term 1 EXAMPLE. (1) APPLICATIONS. Q [12.13] CH 3 Assess.Q.[53,55,64,65]	57-58 60-61 62 81-82
19	❖ Calculate the work done by a force (exerted at an angle to the direction of motion) as a product of the component of the force in the direction of the displacement and the displacement. ❖ Calculate the net work done by multiple forces acting on a system as the sum of the work done by each force.	Student Textbook Term 2 EXAMPLE. (1) EXAMPLE. (2) APPLICATIONS. Q [6,8] CH 4 Assess.Q.[47,48,53]	88-93 92 93 93 108

الأسئلة الموضوعية MCQ (60%)

الأسئلة المقالية FRQ (40%)

* Questions might appear in a different order in the actual exam, or on the exam paper. قد تظهر الأسئلة بترتيب مختلف في الامتحان الفعلي، أو على ورقة/ الامتحان.

** As it appears in the textbook, LMS, and (Main_IP). كما وردت في كتاب الطالب وLMS والخطة الفصلية.