

**University of Palestine**  
**Faculty of Applied Engineering and Urban Planning**

<b>Course Name</b>	<b>Engineering Dynamics</b>			<b>Course No.</b>	<b>CVL 2204</b>
<b>Academic Year</b>	<b>2018/2019</b>	<b>Semester</b>	<b>2<sup>nd</sup></b>	<b>Exam Type</b>	<b>2<sup>nd</sup> Midterm</b>
<b>Exam Date</b>	<b>14/4/2019</b>			<b>Exam Time</b>	<b>9am – 10am</b>

الرقم الجامعي:	اسم الطالب (بالعربي):		
الرقم المتسلسل:	وقت المحاضرة:	رقم الشعبة:	اسم المدرس:

**Important Instructions**

- *This is a closed-book exam; all related material must be placed away from your desk.*
- *Cell phone use is prohibited for any purpose: Your cell phone must be turned off and placed off of the desk. Cell phones may not be accessed during the exam. Failure to comply may be treated as a violation of the Honor Code.*
- *Headphones of any kind are not permitted.*
- *This exam is 60 minutes long.*
- *Make sure that you have 4 pages including this page.*
- *This exam has 10 essay questions. Read each question carefully before answering.*
- *Calculators can be used but cannot be shared.*
- *When you finish, you must:*
  - *Check that you have written your information in the spaces provided.*
  - *Give the exam package (all papers) to the proctor before you leave.*

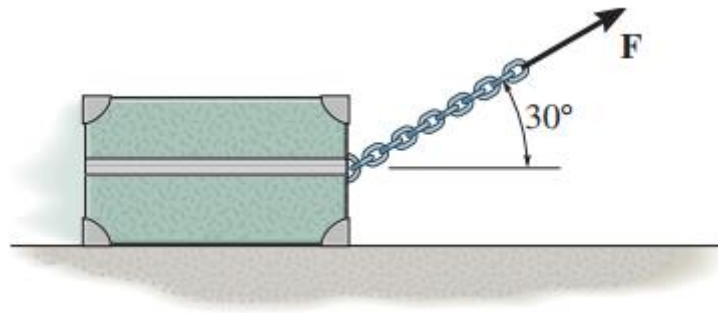
**For Teacher's Use Only****For Proctor's Remarks**

QN	KPI/ILO	SO	DL	Mark	Weight
1	B1				
2	B1				
3	B1				


*KPI: Key Performance Indicator, ILO: Intended Learning Outcomes, SO: ABET Student Objectives, DL: Difficulty Level (1. Very easy, 2. Easy, 3. Moderate, 4. Somewhat hard, 5. Hard, 6. Very Hard)*

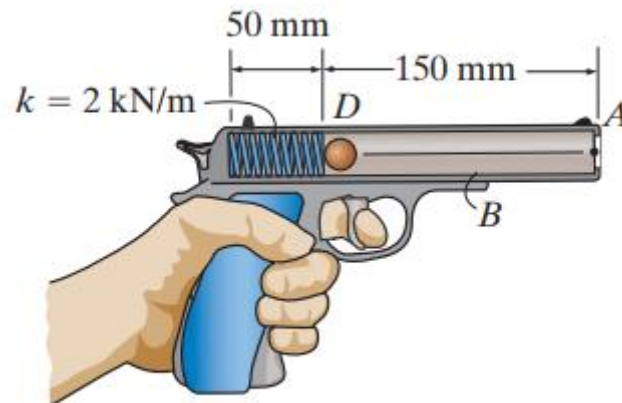
**Q1:**

The 20-kg crate is subjected to a force having a constant direction and a magnitude  $F = 100$  N. When  $s = 15$  m, the crate is moving to the right with a speed of 8 m/s. Determine its speed when  $s = 25$  m. The coefficient of kinetic friction between the crate and the ground is  $\mu_k = 0.25$ .



**Q2:**

The spring in the toy gun has an unstretched length of 100 mm. It is compressed and locked in the position shown. When the trigger is pulled, the spring unstretches 12.5 mm, and the 20-g ball moves along the barrel. Determine the speed of the ball when it leaves the gun. Neglect friction.



**Q3:**

If the 10-lb block passes point *A* on the smooth track with a speed of  $v_A = 5 \text{ ft/s}$ , determine the normal reaction on the block when it reaches point *B*.

