



*Department of Mathematics
and General Sciences*

**Physics 1 (PHY105)
Second Major Exam**

**Second Semester, Term 132
Date: Mon. 28/04/2014**

Name:	
ID number:	
Section number or time:	
Instructor's name:	

Important instructions:

1. Examination time: 60 minutes.
2. Write your name now before starting with the questions.
3. Switch off your mobile phone and put any books and notes away.
4. Check that you have 6 pages in total, including this cover page and a scratch paper.
5. You may use a calculator but you may *not* borrow one.

Good Luck!

	Mark
Part 1	
Part 2	
Total	

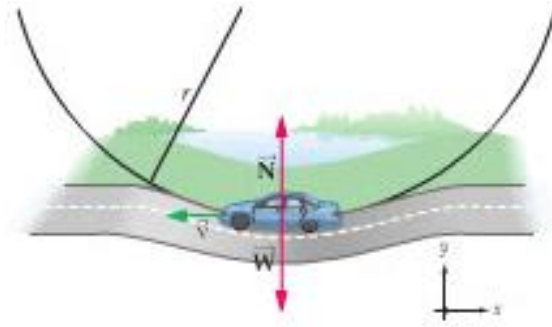
- A) 1.96×10^3 J B) 196 J C) 200J D) None

SCENTION II (9 marks): ANSWER COMPLETELY SHOWING ALL YOUR WORK.

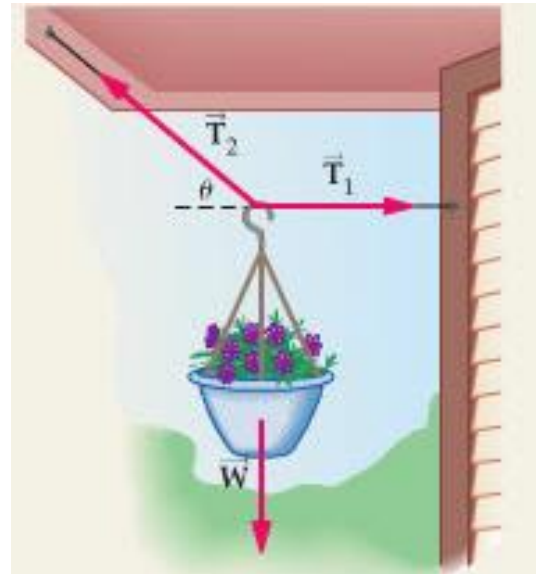
use $g = 9.8 \text{ m/s}^2$.

Q1. A car moving at 90 km/h on a road with dip in the road. The dip is a part of a circle of radius of 60 m. Find the force felt by a 60 kg passenger at the lowest point on the road.

(3 marks)



Q2. A 10 kg pot of flowers hangs by two ropes as shown in the diagram. Angle $\theta = 45^\circ$. What are the tensions T_1 and T_2 in respective wires? (3 marks)



Q.3

(3 marks)

A 1000 kg box made of wood is sliding along an inclined surface. Surface is inclined at 30° . The box moves 20 m along the inclined surface with a constant velocity.

a) What is the coefficient of kinetic friction between wood and the surface?

b) What is the work done by gravity sliding box 20 m along the incline plane?

c) What is the work done against friction?

Scratch paper
DO NOT REMOVE