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Instructor: *Profs. Acosta, Hamlin, Muttalib*

PHYSICS DEPARTMENT

PHY 2048 Exam 1 February 10, 2017

Name (PRINT, last, first): _____ Signature: _____

On my honor, I have neither given nor received unauthorized aid on this examination.

YOUR TEST NUMBER IS THE 5-DIGIT NUMBER AT THE TOP OF EACH PAGE.

DIRECTIONS

(1) **Code your test number on your answer sheet (use 76–80 for the 5-digit number).** Code your name on your answer sheet. **DARKEN CIRCLES COMPLETELY.** Code your student number on your answer sheet.
(2) Print your name on this sheet and sign it also.
(3) Do all scratch work anywhere on this exam that you like. At the end of the test, this exam printout is to be turned in. No credit will be given without both answer sheet and printout with scratch work most questions demand.
(4) **Blacken the circle of your intended answer completely, using a #2 pencil or blue or black ink.** Do not make any stray marks or the answer sheet may not read properly.
(5) The answers are rounded off. Choose the closest to exact. There is no penalty for guessing.

>>>>>>>>**WHEN YOU FINISH** <<<<<<<<
Hand in the answer sheet separately.

Formula-sheet: Exam 1

- *For constant acceleration* $\vec{a}$*:*

$$\vec{v} = \vec{v}_0 + \vec{a}t \qquad v_x^2 = v_{x0}^2 + 2a_x(x - x_0)$$

$$\vec{r} = \vec{r}_0 + \vec{v}_0 t + \frac{1}{2}\vec{a}t^2 \qquad v_y^2 = v_{y0}^2 + 2a_y(y - y_0)$$

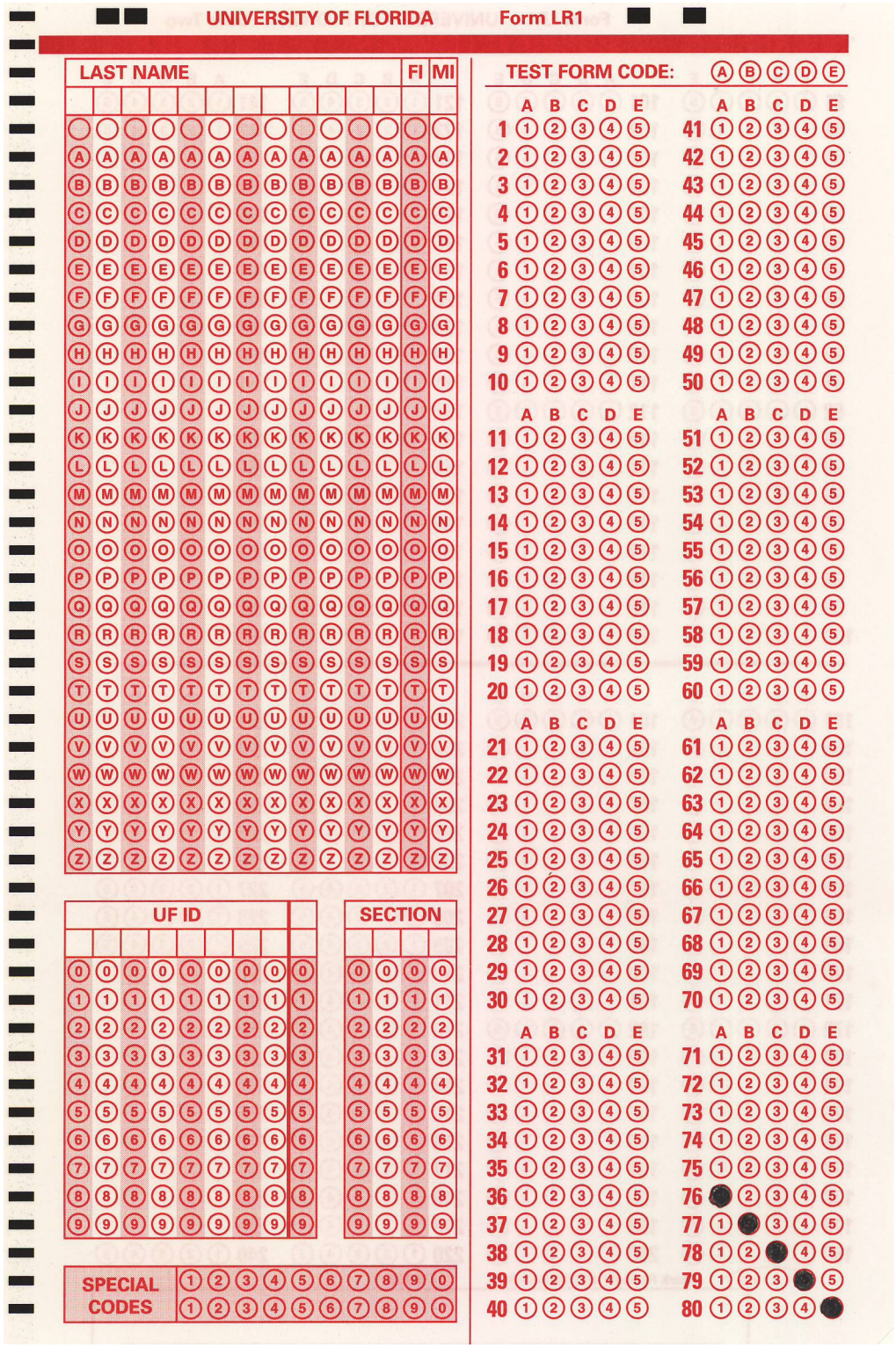
Acceleration due to gravity: $g = 9.8\ \mathrm{m/s^2} = 32\ \mathrm{ft/s^2}$ vertically down.

- *For force acting on a body of mass* m*:* $\vec{F} = m\vec{a}$ 12345
- Frictional forces: $f_{s,max} = \mu_s N$; $f_k = \mu_k N$. N : normal force.
- *For uniform circular motion:* centripetal acceleration is $a_c = \dfrac{v^2}{r}$
- Kinetic energy: $K = \dfrac{1}{2}mv^2$
- Work done by a constant force: $W = \vec{F} \cdot \vec{d} = Fd \cos$ (angle between $\vec{F}$ and $\vec{d}$)
- Work-kinetic energy theorem: $W = K_f - K_i$
- Vectors (2d): $\vec{A} = \hat{i}A_x + \hat{j}A_y$; $A = \sqrt{A_x^2 + A_y^2}$;

$A_x = A \cos$ (angle between $\vec{A}$ and $\hat{i}$); $A_y = A \sin$ (angle between $\vec{A}$ and $\hat{i}$)

Bubble in your scantron, numbers 76-80, this code (see scantron page)

Your exam will NOT be graded if this code is missing, or wrong.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