

Practice Exam #2 – ANSWER KEY
Physics 2425

1. (f)
2. (b) and (d)
3. $\vec{r}_{CM} = \left\langle 0, \frac{7}{10} \text{ m} \right\rangle$
4. (a) $m_2 / m_1 = \frac{g - a}{a + \mu g \cos \theta + g \sin \theta}$
(b) $m_2 / m_1 = \frac{1}{\mu \cos \theta + \sin \theta}$
5. 1.1 m/s
6. (a) 43.2 J
(b) -15.2 J
(c) 3.61 m/s
7. -0.104 J
8. 6.55 m/s
9. $-1.1 \times 10^2 \text{ J}$
10. (a) $|\vec{J}_{net}| = 0.81 \text{ kg} \cdot \frac{\text{m}}{\text{s}}$
(b) $|\vec{F}_{av}| = 10 \text{ N}$
11. (a) 2.7 m/s
(b) $v_{si} = 9.97 \text{ m/s}$, $v_{ai} = 2.26 \text{ m/s}$