Name:_________________________ Student Number: ________________

Choose the single best answer to each question and then indicate your answer to each question by darkening in the appropriate circle.

A  B  C  D

1  o  o  o  o
2  o  o  o  o
3  o  o  o  o
4  o  o  o  o
Assume the acceleration of gravity is 10 m/s^2 and choose the single best answer to each question. Indicate your answer by filling in the appropriate circle on the attached answer sheet.

1) The magnet flux through a coil of wire with 20 loops changes from 2 Tm^2 to 0.5 Tm^2 in a time of 0.5 seconds. What is the average emf induced in the coil during this time?
   A) 15 V  B) 60 V  C) 80 V  D) 120 V

2) A loop of wire lies in the plane of the page. A decreasing magnetic field is directed into the page. The induced current in the loop is:
   A) counterclockwise
   B) clockwise
   C) zero
   D) depends upon whether or not B is decreasing at a steady rate

3) The graph shows the magnitude B of a uniform magnetic field that is perpendicular to the plane of a conducting loop. Rank the five regions indicated on the graph according to the magnitude of the emf induced in the loop, from greatest to least.

   A) 1, 2, 3, 4
   B) 4, 3, 1, 2
   C) 2, 4, 3, 2
   D) 1, 3, 4, 2
4) The following graph shows the induced emf in a conducting loop through which a bar magnet oscillates back and forth, as shown.

Now the frequency of oscillation doubles. Which graph below best represents the new emf vs. time relationship?

A

B

C

D