1. Each part is 7 points for a total of 28 points.

1a. The economic problem is there are limited resources and unlimited wants -- scarcity. Individuals respond to the economic problem by making choices on how to allocate the limited resources among the competing wants and desires.

1b. The productive capability of the economy is determined by the four factors of production -- labor, capital (human & physical), land and entrepreneurial ability.

1c. An economy gives up current consumption when it produces an investment good. An economy gains increased future consumption when it produces an investment good.

1d. The consumer surplus is the difference between the marginal benefit ($MB$) of consuming a good and the price paid for it ($P$), while the producer surplus is the difference between the price received for the good ($P$) and the marginal cost ($MC$) of producing it.

1e. If a price floor is imposed above the equilibrium price, then the quantity supplied would exceed the quantity demanded. This situation is called a surplus.

1f. If the price elasticity of labor supply is elastic, then people will be very responsive to changes in the after-tax wage rate. As a result, the Bush tax cut which raises the after-tax wage rate will cause employment to increase by a lot and tax revenues to fall by a little.

2. Parts a, b, c, d and e are worth 6, 6, 8, 8 and 8, respectively for a total of 36 points.

2a. The demand for beer depends upon the willingness to pay by households. The objective of the household is to maximize utility, which shows up as a willingness to buy so long as the marginal benefit is greater than or equal to the price. So, if the price of beer rises, then the marginal benefit on the last unit consumed is less than the price and households will reduce consumption. Therefore, the quantity demanded for beer decreases when the price rises.

2b. The supply of beer depends upon the willingness to sell by firms. The objective of the firm is to maximize economic profits, which shows up as a willingness to sell so long as the marginal revenue or price is greater than or equal to the marginal cost. So, if the price of beer rises, then the marginal cost on the last unit produced is less than the price and firms will raise production. Therefore, the quantity supplied of beer increases when the price rises.
2c. The picture below shows the effect of a 10-cent increase of the tax on beer.

Since beer makers have to pay a 10-cent tax on each six-pack sold, the price needed to supply each quantity rises by 10 cents. This shows up as a leftward shift in the supply curve. Note that since prices are determined by the interaction of suppliers and demanders beer makers do not raise the price of beer but rather they supply less at each price. This decrease in supply leads to a shortage in the beer market, which in turn raises the price of beer by an amount less than 10 cents.

2d. Price elasticity of demand is ultimately determined by people’s willingness to substitute out of one good into another. Arguments can be put forth that beer consumption is inelastic or elastic.

If the demand for beer is inelastic, then beer drinkers are unresponsive to changes in the price of beer and thus the demand for beer will fall by a little in response to the tax. As a result, tax revenues will increase.

If the demand for beer is elastic, then beer drinkers are responsive to changes in the price of beer and thus the demand for beer will fall by a lot in response to the tax. As a result, tax revenues will decrease.
2e. Pareto efficiency does not hold in the beer market. The reason is that the tax increase leads firms to supply less beer not because costs are higher, but rather because firms must pay a tax to the government. However, since less beer is being consumed, the marginal cost exceeds the marginal benefit on the last unit consumed and thus too little beer is being consumed.

3. Parts a, b, c, d, e and f are worth 3, 3, 8, 8, 8 and 9, respectively for a total of 36 points.

3a. If Oberlin College increases its A&S classes production from 0 to 100, then it must decrease the number of Con classes from 80 to 70. The opportunity cost of one A&S class would thus be a 1/10 Con class.

3b. If Oberlin College increases its A&S classes production from 100 to 200, then it must decrease the number of Con classes from 70 to 0. The opportunity cost of one A&S classes would thus be 7/10 Con class.

3c. The opportunity cost of an A&S class in terms of Con classes increases from part b to part c because the factors of production (land, labor and capital) are not the same at Oberlin College. So, when Oberlin College increased its A&S classes from 100 to 200, it must use those resources less suited for A&S classes (like classrooms and teachers at the Con). As a result, the College must give up more Con classes to produce the last 100 A&S classes. Remember that the opportunity cost has to do with the resources of an individual or an economy and not the preferences or marginal rate of substitution.
3d. The slope of an indifference curve is the marginal rate of substitution of A&S classes in terms of Con classes or the ratio of the marginal utility of A&S classes to the marginal utility of Con classes. Therefore, the slope of a convex indifference curve implies that the marginal utility of an A&S class falls (the marginal utility of a Con class rises) as more A&S classes (and less Con classes) are consumed.

3e. Oberlin College students are happier with the combination of classes at point e rather than point f because they reach a higher indifference curve. This means that the combination of classes at point e is more preferable than those at point f (not that there are more classes at point e versus point f). Therefore, in going from point f to point e, the utility reduction in less Con classes is less than the utility gain in more A&S classes.

3f. At point f, the opportunity cost of an A&S class in terms of Con classes (slope of ppf) is less than the marginal rate of substitution of giving up Con classes for an A&S class (slope of indifference curve). If there were a market with prices, this would show up as a higher price for an A&S class and a lower price for a Con class. However, Oberlin College students reveal their preferences through enrollment. At point f, there would be a shortage of A&S classes and a surplus of Con classes and thus waiting lists in A&S classes. Seeing these waiting lists, President Nancy Dye would shift resources out of Con classes and into A&S classes in order to raise the utility of the students.