Part 1. Multiple choice/quick answers. Answer all 5 questions [3 minutes each]

1. In 1658, it took about 20,000 minutes to travel by stagecoach from London to Edinburgh, a distance of 640 kilometers. By 1840, the minimum time required for the journey
   a. had fallen to 2,250 minutes, using stagecoaches on toll roads (“turnpikes”).
   b. had fallen to 750 minutes, using rail.
   c. had fallen to 2 days, using steamship.
   d. had fallen to 2,800 minutes, on horseback.

2. Which statement is true about the size of linguistic communities?
   a. Most Brazilians speak Portuguese, and most Portuguese speakers are Brazilian.
   b. One billion people speak Spanish as a first language.
   c. All languages require at least 1 million speakers; with fewer, it is a dialect.
   d. The Indo-European language family includes English, Arabic, and Chinese.

3. Under which of the following are strong powers allocated to local governments?
   a. A unitary system
   b. A constitutional system
   c. A federal system
   d. An autocratic system.

4. Which of the following provides the bulk of the protein consumed by humans in less-developed countries?
   a. Soya
   b. Meat
   c. Lentils
   d. Cereals.

5. Which of the following is explained by von Thünen’s model?
   a. The negative effects of farm subsidies on the family farm
   b. The benefits of ranches when sited close to big cities
   c. Farm sizes and the links to multi-generational farming
   d. The importance of proximity to market in the choice of crops on commercial farms.
Part 2. Short questions. Answer any five questions. [6 minutes each]

6. List the three major monotheistic religions in the order in which they were established.

7. List three implications for the layout of cities, and/or the distribution of manufacturing, that result from declining transport costs.

8. List six ways in which countries have sought to forge national identities.

9. What is a public good? Explain, and give two examples of public goods.

10. In his article *The Ecology of Micromotives*, Tom Schelling argues that even in societies where people want to live with some neighbors of different ethnicities, we can end up with segregated neighborhoods. Explain how this can happen.

11. Explain any two of these three items, describe what they are and, where appropriate, give an example.
   a. Primate city.
   b. Gerrymandering.
   c. GDP.

Part 3. Medium questions. Answer any six of the following eight questions. [11 minutes per question]

12. On the separate sheet (bottom of page 5) there is a diagram showing the demand for using a tunnel under Boston Harbor at rush hour. Because of congestion, the marginal cost of going through the tunnel is $2.50 (mainly because each extra car slows everyone else down). Use the diagram to show how many cars will travel through the tunnel if there is
   a. no toll
   b. a toll of $1 per trip
   c. a toll of $2.50 per trip.
   [Note: For a., b., and c., I am not looking for a number, just a point on the diagram.]
   d. Which of these prices would be best? Explain your reasoning.

13. The accompanying diagram (page 4) shows five different types of transportation network.
   a. Label each network appropriately.
   b. Which network imposes the lowest costs on users?
   c. Which network is closest to a “hub and spoke” model, of the type that many airlines use?
   d. Which network minimizes the path length (which would be of interest to, say, an electricity distributor, where transmission costs are low)?

14. Why do cities exist?

15. Suppose, for simplicity, that there are only two countries in the world (“A” and “B”), and they only produce two goods (“cars” and “wheat”). This table shows labor productivity for each good in each country, measured in units of output per worker per year:

<table>
<thead>
<tr>
<th></th>
<th>Country A</th>
<th>Country B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cars</td>
<td>500</td>
<td>300</td>
</tr>
<tr>
<td>Wheat</td>
<td>1,000</td>
<td>400</td>
</tr>
</tbody>
</table>

   a. Which country has the absolute advantage in producing cars? Explain.
   b. Which country has the comparative advantage in producing wheat? Explain.
   c. Which, if any, products will Country A export to Country B? Explain your reasoning.
   d. Why does comparative advantage differ from country to country?
16. The diagram on the separate sheet (top of page 5) shows the economic situation facing a fishery.
   a. Label the curves and axes.
   b. If the fishery is open access, what level of fishing effort will be provided, given the situation in the diagram? Show this level of effort.
   c. If the cost of fishing goes down – for instance due to more efficient boats or nets – what will happen in the long run to the total fish catch, given the situation in the diagram? Show and explain your answer.
   d. Someone suggest that this fishery should be privatized, so only one company would have the right to use this fishery. Suppose that this right can be enforced cheaply. Would the result be more or less fishing? Explain.

17. Easter Island appears to have imploded under ecological stress. To what extent is this a relevant model (or metaphor) for the fate of the planet? In your answer be sure to show your understanding of how Easter Island was settled, and how its economy worked.

18. Explain and illustrate Zipf's Law, and give an example of the type of situation to which it applies.

19. On the right is a graph of “central place” theory.
   a. Explain what each major dot (red, orange, blue) represents.
   b. What sorts of activities would be located at these points?
   c. Under what situations is this model/theory useful or applicable?