EXAM 3 PRACTICE PROBLEMS

PUBPOL 2130 / INFO 3130
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The test will have around 15-20 multiple choice questions. If you spend 2-3 minutes on each, you'll be done in well under an hour. Here are some sample questions.

(1) In Healy's chapter on organ donations, he mentions that the life insurance market was "initially controversial." We discussed this in class. Why was it controversial?
   (a) It seems suspiciously or excessively altruistic.
   (b) It was thought to commodify something spiritual.
   (c) The initial market was wildly mis-priced, in discriminatory ways.

As we discussed, it seemed morbid to pay into a scheme that would produce money after your death. Almost like betting on your own life. Another example was domestic labor (maids and so on), which were thought to monetize women's family duties and brought a risk of alienating women from their so-called proper role.

(2) In Rodden's interview, he says "The Democrats didn't clearly become the party of urban workers until around the New Deal." What is the relevance of the New Deal for his argument about density and politics?
   (a) The New Deal included a boom in the kinds of construction projects that both created jobs and created dense housing in cities.
   (b) It was a time of hyper-inflation, and higher prices led to increased power for labor unions.
   (c) The New Deal began the shift of the Solid South along racial lines.

The Rodden reading accompanied the topic of elections, but the New Deal was discussed in more depth later, in Lecture 18 (Housing and segregation). Many federal programs were launched in the 1930s that included huge building projects. This dovetails perfectly with Rodden's argument that urban areas are characterized by dense housing and by alignment with labor.

(3) Donald Shoup writes that "Free curb parking presents a classic 'commons' problem," referring to the concept of *the tragedy of the commons.* Which of these best describes the concept?
   (a) People don't value things that are free.
   (b) Public spaces decline rapidly when government funding is cut, resulting in the deterioration of shared neighborhood resources.
   (c) Policymakers make bad decisions when under pressure to look effective.
   (d) Shared resources need collective restraint, but individual incentives drive selfish behavior.

Aristotle's version is "What is common to the greatest number has the least care bestowed upon it. Every one thinks chiefly of his own, hardly at all of the common interest."
As Shoup puts it, "Where many people want to use a scarce public resource, self-restraint does not produce any individual reward. Free curb parking thus presents the perfect commons problem—no one owns it, and everyone can use it."

(4) True or false? In *Crabgrass Frontier*, Kenneth Jackson argues that U.S. cities follow patterns that are typical around the world.
(a) True, mainly driven by uncontrolled gentrification.
(b) True, because the suburbs vote for conservatives.
(c) False, because they don't have sharp edges and their urban characteristics drop off slowly.
(d) False, because they are much smaller than mega-cities of Asia and Latin America.

If you read this chapter (or attended Lecture 21, where we discussed it) it should be very clear that Jackson thinks the U.S. is highly anomalous when it comes to city structure! He describes cities across Europe and Asia as having outer boundaries that "abruptly terminate," while by contrast U.S. cities just have a creeping sprawl that is not explained by population growth.

(5) In his law review piece on the long-term effects of redlining, Rothstein describes an experiment by *Long Island Newsday*. What did they do?
(a) Studied the relationship between school districts and home prices.
(b) Conducted "paired testing" of realtors using undercover actors.
(c) Called in complaints about hazardous road conditions in different parts of Suffolk County to measure the response time.
(d) Invented the "social vulnerability index" and tested the hypothesis that its variance is largely explained by redlining.

The paired testing work is described in great detail in this short piece – one White and one Black actor with identical credentials and backgrounds, and even handbags! Using hidden body cameras, they track how they're treated differently by realtors.

(6) True or false? Census blocks can be totally made up of water, and can have zero population.
(a) True, but this is very rare and over 90% of census blocks have 100-500 people.
(b) True, and different states have different standards about how to draw their blocks, so the properties can vary strongly from state to state.
(c) False, since they are used as precincts for voting.
(d) False, since there are legal upper and lower limits on the population of a block.

See Lecture 5. In the 2010 Census, fully 40% of census blocks had zero population. The "Nobody Lives Here" map highlights that you can sometimes see state boundaries, because the meaning of a block changes when you cross the state line. (You can also see major rivers and mountain ranges, but that's another story!)

(7) Which of these things is true about the ACS? *Choose all that apply.*
(a) It is based on an annual survey.
(b) It includes variables about household details, like language spoken at home and whether the house has wireless internet.
(c) Raw microdata is publicly available.
(d) It includes mobility data for moves from county to county.

These points are well covered in the notebooks for this course! It's the American Community *Survey*, and its focus is socio-economic data about the public. And in particular, Week7 is the migration notebook and uses ACS data in exactly this way (county-to-county mobility).

(8) Which of these is reasonably represented as a network? *Choose all that apply.*

(a) A map of connections between social media users.

(b) A linear program to solve for the fastest transit route from point A to point B.

(c) The street grid in a city.

(d) The entropy of a redistricting plan.

Networks are a name for graphs when we're thinking about them as describing connections. They're made up of nodes/vertices and edges that represent the connections. So a social media connectivity network is a key example, and we worked with the street grid example as well. In the former, nodes are people and edges are links between them; in the latter, nodes are intersections and edges are street segments between them.

(9) Here is a line from the Python notebook on redlining.

```
queens_bronx_areas_gdf["score"] = queens_bronx_areas_gdf["grade"].map("A":3, "B":2, "C":1, "D":0)
```

Which of these is true?

(a) This creates a new `score` column by using a dictionary to transform the `grade` column.

(b) This modifies the `score` column by appending letter grades.

(c) This plots a map of several areas of New York City that is color-coded by HOLC classification.

It's setting the values of a dataframe column (`score`) by telling you what it equals. It pulls values from `grade` and then transforms them using the given dictionary that maps letters to numbers. (What makes it a dictionary is that it is formatted in pairs of the form X:Y, which are called key:value pairs. In this case the letters are the keys and the numbers are the values.)

(10) In the notebook on evictions, one code block includes the following.

```
cmap="YlOrRd",
#cmap="PuOr",
```

By changing which one is commented out, this lets you toggle back and forth between a **sequential** and a **divergent** colormap. What kind of data is most suitable for a divergent colormap?

(a) Choropleth data that can take both positive and negative values.

(b) Scatterplot data with high variance in the y coordinate.

(c) Data where you want to visualize uncertainty.

(d) Values that grow exponentially.

If you're dealing with data that can be positive or negative, often those have a different meaning (like increase vs decrease) and it's helpful to show where 0 is (like by making it white) and have one color for positive and the other for negative. This is how it showed up in the Week12 notebook on evictions.