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**Mid-term2**

### **Unit 3**

**1. Psychological Research:**

- (a) The rates of error were higher in studies where the authors did not share data.
- (b) The errors were often in favor of the hypotheses proposed by the original authors.

**2. Behavioral Economics:**

- (a) Groups are often better than individuals at finding errors in reasoning because diverse perspectives challenge assumptions, leading to a more thorough evaluation.
- (b) An example of the wisdom of crowds in our study of Latin American science could be collaborative efforts in expeditions like the Royal Botanical Expedition, where collective expertise identified significant biodiversity.

**3. Cold Fusion:**

- (a) Three facets of the peer review process that went wrong were insufficient replication of results, confirmation bias among reviewers, and the rush to publish sensational findings.
- (b) It took approximately two years for the scientific community to sort out the errors.

**4. Viceregal Engineers:**

- (a) Examples of professions involving modern technical skills in Río de la Plata and Perú include mining engineers, architects, and surveyors.
- (b) The primary profession of modern U.S. leaders, such as those in Congress, tends to be law or business.

**5. José Mariano Mociño and Nootka Island Expedition:**

The purpose of this expedition was to gather scientific and geographic knowledge, particularly concerning the Pacific Northwest's flora, fauna, and Indigenous cultures.

**6. Hipólito Unánue and José Celestino Mutis:**

- (a) Hipólito Unánue contributed to medicine and meteorology, including pioneering work on tropical diseases and climate studies.
- (b) José Celestino Mutis's main contributions included cataloging New Granada's biodiversity and integrating Indigenous knowledge into botanical studies.

## 7. **Wars of Independence:**

- (a) The Latin American wars of independence began around 1810.
  - (b) Examples of scientists and engineers who fought and died include Francisco José de Caldas and other revolutionary figures skilled in cartography and engineering.
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## Unit 4

### 1. **Childbed Fever and Germ Theory:**

Germ theory was introduced approximately 20 years after Semmelweis's solution to childbed fever.

### 2. **Autopsies:**

Autopsies began in Renaissance Europe, fitting with the scientific attitude by promoting empirical observation and understanding of human anatomy.

### 3. **Discovery of Penicillin:**

- (a) The discovery of penicillin was partly accidental but also a result of scientific inquiry and preparedness.
- (b) Louis Pasteur's statement, "Chance favors the prepared mind," means that discoveries often arise when an individual is mentally equipped to recognize opportunities.
- (c) The discovery of cinchona was scientific because it involved the systematic identification of medicinal properties in plants.

### 4. **Establecimiento de Ciencias de Médicas Formation:**

This institution was formed in 1833 due to the convergence of Enlightenment ideals and the need for modern medical education.

### 5. **Medical Reforms in Nueva Granada:**

- (a) Medical reforms were slow in Nueva Granada due to political instability, lack of resources, and resistance from traditionalists.
- (b) José Celestino Mutis led the medical reform process in the 18th century.
- (c) The Facultad de Medicina was reestablished in Bogotá in 1803, leading to more structured medical training.

### 6. **Medical Schools in Brazil:**

- (a) Brazil had no medical schools in the 18th century.
- (b) The Portuguese Crown fled to Brazil in 1807 due to Napoleon's invasion, which led to significant reforms.

(c) This move fostered the establishment of medical institutions and modernization efforts.

7. **Cultural Institutions in Colombia:**

Returning doctors from France established hospitals, medical schools, and professional journals to enhance medical practices.

8. **Triangulation:**

Using the given data, the mountain is approximately 11.46 kilometers away.

9. **Latitude and Longitude:**

(a) Two cities along the same longitude with a 0.5-degree latitude difference are about 55.6 kilometers apart.

(b) Two cities 600 kilometers apart at 45 degrees North correspond to a longitude change of approximately 8 degrees.

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## Unit 5

1. **Medical Journals:**

(a) The first medical journals in Colombia were published in the mid-19th century.

(b) These publications were contemporaneous with Mexico's scientific journals in mining, chemistry, and physics.

(c) They were connected to medical schools through editorial boards and academic collaborations.

2. **Institutions in 1833 Mexico:**

The three institutions merged into the medical school were anatomical theaters, chemical laboratories, and botanical gardens.

3. **Holistic Medicine in Latin America:**

Holistic approaches included Indigenous healing practices, herbal medicine, and public health measures like sanitation systems.

4. **Brazil's Medical Reforms:**

(a) The Portuguese Crown's move to Brazil in 1807 due to Napoleon's invasion catalyzed the creation of medical and surgical schools.

(b) Brazil declared independence in 1822.

(c) Modern medical reforms in Bahia and Rio de Janeiro occurred approximately 20-30 years after independence.

5. **Flexnerian Reforms:**

This term refers to the modernization of medical education, emphasizing laboratory-based training and scientific rigor, influenced by the Flexner Report in the U.S.

6. **Epidemiology in Brazil:**

(a) Epidemics like yellow fever drove modern epidemiology.

(b) The Tropicalist School focused on understanding tropical diseases.

(c) The bubonic plague entered Brazil in the late 19th century, prompting public health campaigns.