Data Ethics – Assignment 2 Solutions

True/False & Multiple Choice (Week 3 & Week 4)

(1 Mark each = 29 Marks)

1Q: The idea of using data to make decisions is a new development not found in everyday life.
A: (False)

2Q: One weakness of the 'volume and velocity' view is that...
A: (A) What we consider 'big' or 'fast' depends on our storage and processing capabilities.

3Q: By saying that big data exhibits 'variety' Leonelli means:
A: (C) Big data often involves multiple sources and kinds of data.

4Q: The substantive justice and procedural justice respectively concern:
A: (B) Outcomes and processes.

5Q: Questions about legitimacy are primarily questions about procedural justice.
A: (True)

6Q: The difference between 'Appeals' and 'Recourse' is best described as:
A: (E) The opportunity to have an adverse decision reviewed vs. the opportunity to respond constructively to an adverse decision.

7Q: Decisions based on machine learning don't raise special ethical challenges.
A: (False)

8Q: Automating decision-making by predicting target variables means…
A: (C) Assisting humans by estimating a feature used as a basis for decision-making.

9Q: The 'curse of dimensionality' refers to dealing with data that has many variables per point.
A: (True)

10Q: Interpretability is best described as the ability to…
A: (D) Understand how the inputs to a model affect its outputs.

11Q: Explainability is best described as the ability to…
A: (B) Gain a deep understanding of how a model produces its outputs.

12Q: The Abstraction and Reasoning Corpus is primarily:
A: (B) A benchmark for machine learning models.

13Q: Little or no progress has been made on interpretability in machine learning.
A: (False)

14Q: Ethical approach to privacy is best shown by:
A: (D) A group of policy experts publish guidelines on the retention of personal data by colleges.

15Q: Coherentism and reductionism (about privacy) disagree about:
A: (B) Whether privacy is valuable for its own sake or tied to other values like autonomy.

16Q: Two forms of privacy in US law concern data disclosure and decision autonomy.
A: (True)

17Q: Data privacy is unrelated to personal autonomy.
A: (False)

18Q: Which of the following was NOT a motivation for early medical privacy protections?
A: (E) Protecting the inalienable rights of patients.

19Q: Medical privacy thinking shifted from:
A: (A) Paternalism to individual rights.

20Q: Consent in medical privacy is rooted in optimizing well-being.
A: (True)

21Q: Why data aggregation is problematic:
A: (D) It allows inferences that wouldn't be possible from isolated data.

22Q: 'Context-shifting' is ethically problematic when:
A: (B) Data is used outside its original context.

23Q: NOT a level of consent considered by Tene & Polonetsky:
A: (E) Information can be collected without consent.

24Q: Setting default options does little to influence user choices.
A: (False)

25Q: Asking for consent is an example of 'procedural protections.'
A: (True)

26Q: The 'Transparency Paradox':
A: (A) The more accurate, the less understandable. The more understandable, the less accurate.

27Q: The 'Tyranny of the Minority' refers to:
A: (D) Most people are okay sharing data, but a few make it harder for everyone.

28Q: Well-designed consenting practices are the only tool to protect privacy.
A: (False)

29Q: Borocas & Nissenbaum and Tene & Polonetsky have fundamentally opposing views.
A: (False)

Short Answer Questions (Weeks 3 & 4 – 16 Marks)

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1. Arbitrary Decision-Making Examples (7 Marks)

Example 1 – Inconsistent Decision-Making:
A university is reviewing applicants for a scholarship. One is assessed based on academic scores, while another is evaluated based on community involvement, despite having similar overall qualifications. Applying inconsistent criteria makes the process arbitrary, potentially leading to unfair and subjective results.

Example 2 – No Rational Basis:
A company gives bonuses based on employees' favorite dessert — for example, those who like cake receive a reward, while others don't. This criterion has no logical connection to job performance, making the decision process irrational and arbitrary, and leading to biased outcomes.

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2. Decision-Making with a Target Variable (3 Marks)

Context: A nonprofit is selecting fellows for a leadership program.
Target Variable: Number of awards received in school. This seems helpful as it reflects past academic achievement and leadership potential.
Why It Could Be Unfair: Relying only on awards overlooks qualities like resilience, creativity, or access to opportunities — potentially excluding candidates who show strong potential but lacked institutional recognition.

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3. Consent Levels – Tene & Polonetsky (6 Marks)

1. **Opt-in Consent:**
   Before sharing therapy notes with third-party platforms, users should opt in. This ensures they understand and approve of how sensitive mental health data is being used.

2. **Opt-out Consent:**
   When customers sign up for a bookstore rewards program, they may automatically receive promotional emails unless they opt out. This allows easy access to offers but respects users' ability to unsubscribe.

3. **Mandatory Consent:**
   In elder care job applications, employers must conduct criminal checks with the applicant's mandatory consent. This is necessary to ensure safety and comply with legal and ethical hiring practices.

4. **No Collection Without Consent:**
   Wearable fitness trackers should not collect sleep or movement data unless the user

has given clear consent. This protects personal health privacy and promotes trust in the device provider.