=== exam2_student5.txt ===

MSc Business Analytics – Exam 2

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Instructions:

Answer ALL questions. Use clear analytical reasoning, cite frameworks where relevant (e.g., network-effects taxonomy, AI adoption S-curve). Time allowed: 120 min.

Question 11:

Answer:

Organizations are living systems that must constantly restructure to channel emergent patterns of innovation. Analogous to resilience engineering, firms deploy decentralized teams and dynamic governance to absorb “floods” of change and camper-like market entrants. Crucially, leveraging cross-functional feedback loops ensures continuous learning and adaptation. Thus, structural fluidity is not optional but foundational for survival.

Question 12:

Answer:

Reputation management network effects hinge on aggregating trust signals into a currency of credibility. Social proof—endorsements, ratings—serves as an assurance mechanism in digital platforms, driving user acquisition and retention. Empirical studies (e.g., Ritz et al., 2020) show that reputation metrics increase transaction volumes by up to 30%. Therefore, reputation is both an outcome and a driver of network growth.

Question 13:

Answer:

First-movers illuminate market pathways but often lack scalability expertise, opening doors for fast followers. The Diffusion of Innovations model illustrates that after innovators, early adopters and pragmatists prefer proven solutions with refined feature sets. Later entrants capitalize on lessons learned, optimized monetization, and robust network design to capture the majority. Hence, platform success relies on perpetual iteration, not merely being first.

Question 14:

Answer:

Data becomes a catalyst for progress only when channeled through iterative analytics and decision-making. The Data-Information-Knowledge-Wisdom (DIKW) pyramid encapsulates this journey: raw data → processed information → actionable knowledge → strategic wisdom. Without applying insights to refine models and products, organizations miss the opportunity to evolve to higher wisdom levels. Accordingly, analytics is the bridge that transforms static data into dynamic intelligence.

Question 15:

Answer:

Disruption analysis must integrate two orthogonal dimensions: the pace of technological evolution (e.g., AI performance curves) and the velocity of market adoption (e.g., S-curve parameters). Real options theory suggests that firms treat each inflection as a staged investment, hedging based on both technology maturity and diffusion risk. This dual-lever framework guides capital allocation and timing for scaling or pivot strategies.

Question 16:

Answer:

Abstraction reduces complex realities to conceptual archetypes, enabling rapid pattern recognition and transferability. For example, abstraction in customer segmentation condenses thousands of data points into a few high-value personas. Cognitive load theory underscores that well-crafted abstractions enhance working memory efficiency. Thus, abstraction is indispensable for both analytical rigor and effective communication.

Question 17:

Answer:

Network externalities represent the potential economies of scale latent in a network's connectivity; network effects are the realized utility gains delivered via strategic artifacts. For instance, while a social graph's externality is the raw number of nodes, features like real-time recommendations convert that into engagement metrics. Strategic design of data-products ensures that latent externalities manifest as measurable network effects.

Question 18:

Answer:

Gregory et al. (2019) conceptualized data network effects as a multi-dimensional phenomenon, intertwining technical capabilities (prediction speed, accuracy) with governance (data stewardship) and user-centric design. Platforms that excel across these dimensions engender higher trust, richer data flows, and accelerated learning loops. Consequently, network effects evolve from simple growth mechanics to complex socio-technical systems.

Question 19:

Answer:

Afuah's reconceptualization highlights that each incremental user multiplies the network graph's density, unlocking new interaction pathways and data synergies. In practice, this translates into better forecasting in marketplaces and more effective content recommendations. High-frequency platforms like TikTok exploit this by coupling scale with advanced ML, exponentially enhancing user engagement. Thus, value arises from both headcount and interaction richness.

Question 20:

Answer:

Effective platforms marry macro-level network expansion with micro-level personalization to achieve sustainable growth. While scale attracts attention, individualized features—custom dashboards, loyalty tiers—foster deep user commitment. Multi-sided ecosystems

that align collective value creation with individual incentives transform transient trial into long-term advocacy. This synergy between shared and tailored benefits is the hallmark of resilient platform strategies.