

Engineering & Management: Advanced Scenario-Based Exam

Instructions: Fill in the blanks with the most appropriate terms from the word bank. Some sentences require multiple terms to be logically complete.

Word Bank

Scientific Method, Innovation, Commercialization, Growth, Decline, MVP (Minimum Viable Product), Product-Market Fit, Value Proposition, User Persona, Backlog, Scrum, Sprints, Product Owner, Scrum Master, Developers, Daily Scrum, Sprint Planning, Sprint Review, Sprint Retrospective, Churn Rate, LTV (Lifetime Value), CAC (Customer Acquisition Cost), North Star Metric, Validation, Verification, Unit Testing, Regression Testing, Strategic Plan, SWOT Analysis, External Validity, Internal Validity, Reliability, Non-maleficence, Autonomy, Beneficence, Justice, Labor Law, Notice Period, Severance Pay, Overtime, ETL, Data Transformation, Agile, Waterfall, Constraints, Prototype.

Advanced Questions

1. In the engineering design cycle, after defining the problem and performing research, engineers must identify _____ which are limitations like budget or safety, and then build a _____ to test their initial design ideas.
2. A company is building a medical app. During the QA phase, they perform _____ to ensure the code meets technical specifications (building it right), and conduct _____ by testing with real doctors to ensure it solves the actual clinical problem (building the right thing).
3. When a startup transitions from the _____ stage to the _____ stage of the product life cycle, their primary challenge shifts from creating awareness to managing rapid scaling and intense competition.
4. If a SaaS company notices that their _____ is higher than their _____, it means they are spending more to get a customer than the customer is worth over time, indicating a failed business model.
5. During a _____, the team identifies a major bottleneck in their workflow. They decide to address this issue during the next _____ to ensure that the process improvement is implemented in the upcoming work cycle.
6. A researcher finds that a specific algorithm works perfectly in a controlled lab environment (_____ is high), but fails when applied to diverse real-world datasets, indicating a lack of _____.
7. In the _____ methodology, the _____ is responsible for maintaining the _____, ensuring that the most valuable tasks are always at the top for the team to pull from.

8. When a developer modifies a core library, the QA team must run _____ to ensure that existing functionalities didn't break, followed by _____ on the specific new components.
9. Under Turkish _____, if an employee has worked for 3 years and is terminated without a valid reason, the employer must provide a _____ (or payment in lieu of it) and calculate _____ based on the years of service.
10. In a data warehouse project, the _____ process begins with extracting raw data; however, without proper _____, the data might be inconsistent or in the wrong format for the target system.
11. To achieve _____, a product manager must continuously iterate on the _____ until the target _____ feels the product is indispensable for their daily tasks.
12. While _____ is the act of creating a brand new device or process, _____ is the holistic process of turning that creation into a successful business through _____.
13. In the ethical framework of research, _____ ensures that the researcher does not harm the subject, while _____ requires that the study actually provides a positive contribution to the subject or society.
14. A _____ serves as a long-term roadmap for an organization, often starting with a _____ to identify internal strengths and external threats.
15. If a measurement tool is consistently wrong by the exact same margin every time, it has high _____ but low accuracy or _____.
16. The _____ is an artifact in Scrum that represents a "concrete stepping stone" towards the Product Goal, and it must meet the "Definition of Done" to be considered complete.
17. Unlike the _____ model, which is linear and sequential, _____ frameworks emphasize iterative development and responding to change.
18. In Turkey, work exceeding _____ hours per week is considered _____, and the hourly rate for this work must be increased by 50%.
19. The _____ acts as a servant-leader, facilitating the _____ every morning to help the _____ synchronize their work for the next 24 hours.
20. A company's _____ helps them focus on the single most important value they provide, such as "Daily Active Users" for a social media app or "Total Miles Driven" for an autonomous car company.
21. _____ is an ethical principle that demands participants be given enough information to provide "Informed Consent," thereby respecting their _____.
22. During the _____ stage of the PLC, a company might decide to "harvest" the product by cutting all marketing spend as the market is saturated and sales are starting to _____.

23. _____ are small, time-boxed iterations where a team delivers a usable increment, and the goals for these are set during _____.
24. To define who they are building for, PMs create a _____, and to define what they are building, they write _____ from that person's perspective.
25. The principle of _____ in ethics ensures that the selection of research participants is fair and that the benefits of the research are distributed equally across society.
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Answer Key

1. Constraints / Prototype | 2. Verification / Validation | 3. Introduction / Growth | 4. CAC / LTV | 5. Sprint Retrospective / Sprints (or Sprint Planning) | 6. Internal Validity / External Validity | 7. Scrum / Product Owner / Backlog | 8. Regression Testing / Unit Testing | 9. Labor Law / Notice Period / Severance Pay | 10. ETL / Data Transformation | 11. Product-Market Fit / Value Proposition / User Persona | 12. Invention / Innovation / Commercialization | 13. Non-maleficence / Beneficence | 14. Strategic Plan / SWOT Analysis | 15. Reliability / Validation (or Accuracy) | 16. Increment (Artifact) | 17. Waterfall / Agile (or Scrum) | 18. 45 / Overtime | 19. Scrum Master / Daily Scrum / Developers | 20. North Star Metric | 21. Autonomy (Informed Consent) / Autonomy | 22. Maturity / Decline | 23. Sprints / Sprint Planning | 24. User Persona / User Stories | 25. Justice