Q.1

Question: **A high quality research question can be derived from a pre-scheduled session with potential users where they are asked a series of questions.**
Answer: **True**
Justification: A pre-scheduled session like interviews or user studies helps elicit detailed insights into user needs, pain points, and preferences. These insights can be used to craft high-quality research questions that align with real user challenges.

Q.2

Question: **In the context of software product development, Late Majority outnumbers Laggards, Innovators, and Early Adopters put together.**
Answer: **True**
Justification: According to the Diffusion of Innovation curve, Late Majority represents about 34% of adopters. Innovators (2.5%), Early Adopters (13.5%), and Laggards (16%) together make 32%, which is less than the Late Majority alone.

Q.3

Question: In major organizations, those who will use the finished product have significant say in the choices made in the product development journey.
Answer: **False**
Justification: In many large organizations, product decisions are often driven by business stakeholders, project managers, or product owners. Actual users may be consulted but rarely have decisive authority over key choices.

Q.4

Question: **Analyzing the product usage data of a few users enables the discovery of how a product is used by its audience.**
Answer: **False**
Justification: Data from a few users may provide limited insights and does not represent the broader user base. Generalizations based on such small samples can lead to incorrect assumptions about actual user behavior.

Q.5

Question: **The perception that all members of a category share the same characteristics, is a bias**.
Answer: **True**
Justification: This is known as **stereotyping**. Assuming uniform behavior or needs across all users in a category ignores individual differences and leads to biased product decisions.

Q.6

Question: **The relationship between the fulfilment of user needs and user satisfaction are different for different types of user needs. Is this a valid statement? Justify or refute, mentioning specific types of user needs.**
Answer: **Yes, this is a valid statement.**
Justification: According to the Kano Model:

- **Basic needs** (e.g., login functionality) must be met but do not increase satisfaction when fulfilled.
- **Performance needs** (e.g., speed of transactions) increase satisfaction proportionally to their fulfillment.
- **Excitement needs** (e.g., personalized recommendations) significantly boost satisfaction when met but are not expected.

Q.7

Question: **Between customer misbehavior and developer misbehavior, which is more effective in introducing new features in an existing product? Justify your answer.**
Answer: **Customer misbehavior** is more effective.
Justification: Customer misbehavior (e.g., using a feature in an unintended way) highlights unmet or latent needs. These insights can lead to the discovery of innovative features based on real-world use cases, rather than assumptions made by developers.

Q.8

Question: **Is it beneficial to use startup canvas in comparison with other conventional techniques? If yes, what are the benefits? If no, why not?**
Answer: **Yes, it is beneficial.**
Justification: Startup canvases (e.g., Lean Canvas) provide a quick and visual way to validate assumptions, define customer segments, and refine value propositions. Unlike lengthy traditional documents, canvases encourage iterative thinking, experimentation, and customer feedback early in the process.

Q.9

Question: **In situations where it is acceptable for product requirements not to be written down, how are requirements mainly expressed?**
Answer: **Requirements are expressed through shared understanding and verbal communication.**
Justification: In Agile or collaborative environments, requirements are often discussed in standups, meetings, and user story discussions. Frequent communication ensures alignment, even without formal documentation.

Q.10

(i) Question: **The product development will require 40 person-months of effort. Is this a valid statement?**
Answer: **Yes, it is valid.**
Justification: Person-months estimate total effort, not schedule. 40 person-months could mean 4 people working for 10 months or 10 people for 4 months.

(ii) Question: Why does the cone of uncertainty narrow towards the right?
Answer: **Because uncertainty reduces over time.**
Justification: As more information becomes available and decisions are made, estimation accuracy improves, and the variability in effort or scope estimates reduces.

(iii) Question: What is the significance of "contract" in the context of use cases?
Answer: **It defines mutual expectations between the system and stakeholders.**
Justification: A use case contract specifies what the system will do when triggered, setting clear boundaries and responsibilities between actors and the system.

Q.11

(i) Question: **What are the most important points of divergence of the Agile development philosophy from conventional software development, and why are they important?**
Answer:

- **Iterative delivery vs. waterfall approach**
- **Customer collaboration vs. contract negotiation**
- **Responding to change vs. following a plan**
  These differences allow Agile teams to adapt quickly, deliver value faster, and align more closely with user needs.

(ii) Question: Why is it necessary to have "acceptance criteria" specified in user story cards?
Answer: **To define the conditions under which the story is complete.**
Justification: It ensures clarity, testability, and a shared understanding of what the user story must accomplish.

(iii) Question: Can requirements be changed during a Sprint? Justify your answer.
Answer: **No.**
Justification: Sprint scope is fixed to maintain focus and delivery predictability. Changes should go into the backlog and be considered for future sprints.

Q.12

(i) Question: **What is meant by "evidence" in the context of quantitative testing?**
Answer: **Evidence refers to data-driven validation of hypotheses.**
Justification: This includes user metrics, click-through rates, A/B test results, etc., which help confirm or refute assumptions.

(ii) Question: What are the different types of inferences that can be drawn from evidence, based on the quanta of evidence collected?
Answer:

- **Anecdotal**: Insights from a few cases, not statistically reliable.
- **Indicative**: Shows patterns but not conclusive.
- **Statistically significant**: Data-backed, generalizable insights.

(iii) Question: How do qualitative techniques complement quantitative techniques?
Answer: **Qualitative techniques provide deep insights into user behavior, while quantitative techniques validate those insights with broader data.**
Justification: Together, they help in understanding both the "why" and the "what" of user behavior.
