1. **What is the main purpose of beta testing in the IoT software release process?**
   1. To test software internally by developers
   2. To check performance under extreme conditions
   3. To gather feedback from a limited group of **external** users
   4. To finalize product packaging and branding
2. **Why are phone apps often included as part of an IoT software product?**
   1. To reduce manufacturing costs
   2. To eliminate the need for cloud services
   3. To replace the physical device entirely
   4. To find the product in the app store
3. **Why is a staged rollout important in IoT product deployment?**
   1. Because it improves battery performance
   2. Because it increases manufacturing speed
   3. Because rollback is difficult on IoT edge devices
   4. Because it reduces mobile data usage
4. **What is an advantage of CI/CD release over interval-based release in IoT development?**
   1. Faster delivery of updates and bug fixes
   2. Better support for offline devices
   3. Higher hardware compatibility
   4. Lower energy consumption during operation
5. What does a **major** version change typically indicate in semantic versioning?
   1. Backward-incompatible changes
   2. Bug fixes only
   3. Performance improvements
   4. New features that are backward-compatible
6. **Why is Over-The-Air update often the first functionality implemented in IoT software?**
   1. To enable remote bug fixes and updates after deployment
   2. To improve the battery life of the device
   3. To allow offline operation without cloud support
   4. To reduce the size of the initial firmware
7. **What is a common challenge with manual updates on embedded IoT devices?**
   1. It requires physical access to each device
   2. It increases wireless signal strength
   3. It improves the accuracy of sensors
   4. It simplifies cloud integration
8. **How does Git support interval-based release versioning in IoT software?**
   1. By automatically updating all connected devices
   2. By using tags and release notes to mark specific versions
   3. By auto committing and automatically updating software
   4. By supporting feature branch software releases
9. **Which of the following is a common method used in a staged release for IoT software?**
   1. By location
   2. By feature
   3. By screen resolution
   4. By operating system
10. **What is typically done with every release in an IoT software deployment?**
    1. Optimizing sensor performance
    2. Rewriting firmware code
    3. Monitoring of usage and errors
    4. Updating the mobile app's user interface
11. **What is a challenge in ensuring software is released on time in a production line?**
    1. Managing fixed timelines while balancing hardware and software updates
    2. Ensuring software compatibility with all hardware versions
    3. Reducing firmware size to meet production standards
    4. Removing all sensitive information, such as API keys, passwords, and private keys
12. **Which of the following parameters is typically the easiest to change in an IoT project?**
    1. In time (ask for extension)
    2. In specification (10 feature to 1 feature)
    3. In cost (add budget)
    4. In quality (fix 10% error tickets)
13. Your team is asked to develop IoT-based software for a cargo ship to support its navigation. Please explain one reason in a brief written paragraph why test-driven development (TDD) is critical for user acceptance testing (UAT). Please generalize the reason why TDD is critical for UAT in any real IoT-based software.