Analysis

Assumptions:

1. For calculating work size and productivity rate for Rework subtask of requirement phase, data from only project 2 is used as project 1 has use case related details in the requirement phase.
2. For identifying tasks and calculating work size and productivity rate of Analysis phase, data from only project 1 is used as project 2 does not have Analysis details.
3. Data Model subtask is not included in the WBS even though it is given in both project and project 2, since it is not mentioned in the given WBS for project 3.

Q7. The earliest finish date for project 3 if it starts on 04/04/2016 is 08/11/2016.

Q8. No, project 3 cannot be completed in 2 months after it starts on 04/04/2016.

Resources are being shared across multiple projects and the option pool takes precedence is chosen while sharing the resources, so priority will be given to pool project and then the resources will be allocated to this project based on availability.

Q10.

Project 1:

Start date – 02/15/2016

Finish date – 11/03/2016

Project 2:

Start date – 02/29/2016

Finish date – 08/31/2016

Project 3:

Start date – 04/04/2016

Finish date – 08/11/2016

Comment on WBS:

WBS is a hierarchical and incremental decomposition of the project into phases, deliverables and work packages. It is a tree structure which shows a subdivision of effort required to achieve an objective.

Project 1 is decomposed into below phases:

Project Plan, Risk Mitigation and Contingency plan, Requirement, Analysis, Design, Coding and unit test, Testing and Documentation.

Project 2 is decomposed into below phases:

Project Plan, Requirement, Lab and Environment Setup, Analysis/Design Document, Data Model, Coding and unit test, Testing and Documentation.

Project 3 is decomposed into below phases:

Project Plan, Documented Software Development Process Updates, Requirement, Build the development and testing lab environment, Analysis, Design, Coding, Testing and Documentation.

Each of these phases has different tasks. Write, review and rework tasks are common among these phases with few sub tasks. But a few phases have different tasks and subtasks, for instance lab and environment set up.

Comment on Network Diagram:

Project network diagram is a pictorial representation of the sequence in which the project work can be done.

Network diagram helps in finding the critical path which is the longest duration path in the network diagram.

Comment on network diagram of project 3:

1. Project Plan is the initial phase in the project, hence it does not have any predecessors.
2. Project Plan phase is the predecessor for Documented Software Development Process Updates.
3. Build the 'development and testing lab environment' phase can as start as soon as Project plan is finished. Client environment setup can be done once Server environment set is completed.
4. Documented Software Development Process' Updates phase is the predecessor for Requirements phase.
5. Analysis phase can start as soon as the requirement phase is finished.
6. In order to start the design phase, 'Build the development and testing lab environment' and 'Analysis' phases must be completed.
7. Coding phase can start as soon as Design phase is finished.
8. Write test plan can start as soon as requirement phase is finished but in order to start test can execution, both test plan and coding must be finished.
9. Documentation task can begin as soon as the requirement phase is finished. However, it cannot be finished until testing phase is finished.

Comment on Resource pool utilization:

A resource pool is a set of resources available for assignment to project tasks. Here, the resource pool is being shared between 3 projects. A resource can work on different projects based on availability. Project 1 is the pool project and pool project takes precedence, whereas Project 2 and project 3 are the sharer projects.

Not all available resources were used in project 1, so those resources along with new resources provided for project 2 were allocated in project2. Resources available from project 1 and 2 based on availability along with given resources for project 2 are allocated in project 3.

Comment on resource utilization of project 3:

1. Review preparation and meeting duration will not reduce by adding multiple resources as each individual has to review the entire document.
2. Requirement document must be created by Requirement engineers and must be reviewed by engineers from other technical areas as they need to understand the requirement to work on their respective tasks.

3. Analysis and design document must be created by system engineers and can be reviewed by any engineer.
4. Code must be written by program engineers and can be reviewed by both program and system engineers (author cannot take part in code inspection preparation task).
5. Unit Testing must be done by program engineers as it is a part of development activity.
6. Defects found during unit testing must be tested by program engineers, not testers.
7. Test plan must be created by test engineers and can be reviewed by other engineers.
8. Test execution must be done by test engineers.
9. Defects found during test execution will be fixed by Program engineers and tested by test engineers.
10. User documentation must be done by documentation engineers; however, it can be reviewed by other engineers.