

Problem	1	2	3	4	5	Total
Points:	10	12	24	24	16	86
Score:						

This homework assignment has 5 problems, for a total of 86 points.

1. (10 points) Of the following statements, identify all that hold about the specified work.
 - A. According to Huhns and Singh, implementation dependence is an important desirable trait for e-business settings realized using services
 - B. According to Clark and Waclawsky, an open architecture is characterized by loose coupling
 - C. According to Zachman, a *logistic network* pertains to the network of business relationships in a business model
 - D. According to Eric Yu, modeling the *who* facet is well-understood and over-emphasized in modeling an (Internet-based) information system
 - E. According to Singh et al., *Revert Offer* is a transactional pattern because it helps reverse a business transaction

2. (12 points) Of the following statements, identify all that hold about e-business concepts.
 - A. An open system is one whose executions do not terminate
 - B. Closed systems are used for e-business whenever security becomes a priority of senior managers
 - C. A classic novice error is to treat the business units of an enterprise as if they were autonomous entities
 - D. Achieving the interoperation of software components means getting them to work together: this usually obviates getting them into a single integrated whole
 - E. A TP monitor is a simple way to overcome the problems caused by autonomy
 - F. Although some settings may not exhibit heterogeneity, it is still in our interest to assume heterogeneity as the basis for organizing our system

3. (24 points) Of the following statements, identify all that hold about architecture.
 - A. The exercise of developing an IT architecture should begin by identifying the main uses of the system
 - B. Developing and realizing an open architecture requires at least two distinct steps: one to identify the logical components and their interconnections and one to determine how to realize such logical components and interconnections
 - C. The success or failure in realizing an architecture often depends on how well it is aligned with the skill sets of the available staff
 - D. The primary benefit of an architecture is to specify the details of how its interconnections would be implemented
 - E. A component in one person's architecture may legitimately be an interconnection in another person's architecture
 - F. Including specific roles in (and adopting a specific structure) for an IT organization often influences the kinds of system architectures that organization can effectively implement and administer
 - G. The popular architectural styles are generally supported by products that help realize such styles
 - H. Latency is a key example of a simple nonfunctional requirement that never has any bearing on the functionality delivered by a system
 - I. Because the stakeholders of a system may impose conflicting requirements on it, each robust architecture must include a component that can resolve conflicting requirements

- J. Because of the importance of policies, a policy repository is a key infrastructure module in an enterprise architecture
 - K. It is simpler in most practical cases to choose stakeholders who can work with an IT system rather than try to build a system that would satisfy all of the stakeholders
 - L. Once a system is implemented and deployed with real users, the architecture of the system has little bearing on how it is administered
4. (24 points) Of the following statements, identify all that hold about protocols and specifications.
- A. The three-tier architecture not only specifies the logical components of the presentation, logic, and data tiers and their abstract interconnections, but also commercial protocols such as JDBC through which the interconnections may be realized
 - B. An architectural style limits the variety of protocols that we need to describe architectures that respect that style
 - C. The three-tier architecture involves logical protocols between the presentation tier and the data tier
 - D. The business protocols through which an enterprise interacts with other enterprises do not affect its internal business processes
 - E. Business protocols can be understood as peer-to-peer computing applied at the business level
 - F. A policy-based approach enables expressing the potentially distinct decision-making policies for each stakeholder
 - G. A declarative specification describes, not *what* we need, but *how* we implement it
 - H. Asynchronous communication is avoided in good system design because it causes avoidable coupling of the components
 - I. Protocols can only be correctly and precisely specified using finite state machines or sequence diagrams
 - J. Sequence diagrams (or message sequence charts or MSCs) that describe business protocols should capture the business partners involved and their interactions rather than software objects from the implementation
 - K. Given a statechart with at least two states *A* and *B* where *B* is nested within *A*, *B* conveys additional information about the status of the modeled entity than state *A* does
 - L. Given a statechart, if state *B* is nested within state *A*, any transition from *A* that ends outside state *A* also applies to state *B*
5. (16 points) Of the following statements, identify all that hold about services and contracts.
- A. In many practical cases, a technical service can be viewed as a blackbox because its implementation details are irrelevant
 - B. A business service would involve some value transfer among its participants
 - C. Unlike products or goods, a business service does not involve any coproduction among its participants
 - D. A business service is always intangible whereas products or goods are always tangible
 - E. It is good practice to design and configure a business service engagement before enacting it
 - F. Escalation in a business service engagement arises when a delegatee fails to deliver on a commitment it was delegated
 - G. Reciprocal commitments, such as $C(\text{buyer}, \text{seller}, \text{ship}, \text{pay})$ and $C(\text{seller}, \text{buyer}, \text{pay}, \text{ship})$, always lead to a deadlock
 - H. The only legal way to discharge a commitment $C(\text{buyer}, \text{seller}, \text{ship}, \text{pay})$ is for the seller to ship the goods, whether before or after the buyer pays