OSI Definitions

- A typical layer provides a set of services to the entity of the layer above. We say that N-entities in the N-layer provide service to the (N+1)-entities in the (N+1)-layer above. The N-entity is the service provider to the (N+1)-entity, the service user (or consumer).
- The services of layer N to layer (N+1) are provided at the interface between the layers, at the points called N-service access points (N-SAPs).
- The data transferred between peer entities contain both user data, passed on from the layer above, and protocol-control information added (as header) at the layer in question. Protocol data unit (PDU) is the block of data containing both protocol-control information added at the layer in question, and user data, originating at the layer above. The PDUs exchanged between layer X entities are called X-PDUs (eg. in the link (L) layer: L-PDUs, in the transport (T) layer T-PDUs, etc.)
- OSI has standardized on the use of four basic service primitive types at each level in the architecture to provide the interaction between the service user and the service provider. These service primitives provide the basic elements for defining an exchange; the four types are request, indication, response, and confirm. Note that some primitives can contain parameters such as the addresses of nodes, description of quality of information transfer, and pointers to the (N+1)-PDU. Not all of these primitives may be used during an exchange. See the examples below for (1) (confirmed) connection establishment at the transport layer, (2) (unconfirmed) disconnect at the transport layer, and (3) rejection of transport connection-establishment request.

```
SYSTEM A
Session Layer
  T_CONNECT.request
Transport Layer
  T_CONNECT.confirm

SYSTEM B
Session Layer
  T_CONNECT.indication
Transport Layer
  T_CONNECT.response
```

- (1) Connection establishment at the transport layer.
Try to answer the following question:

Consider the TCP/IP reference model. Using the examples and conventions above as a guide, describe, using primitives, the possible interactions between the application layer and the transport layer on two systems for **confirmed** data transfer.

**Reference**