

**IT 340 – Network Management**  
**Assignment No. 1**

**Due Date: 20<sup>th</sup> February, 2016 (Saturday, 11:59 pm)**

**Total Marks: 10 (Final mark out of 5)**

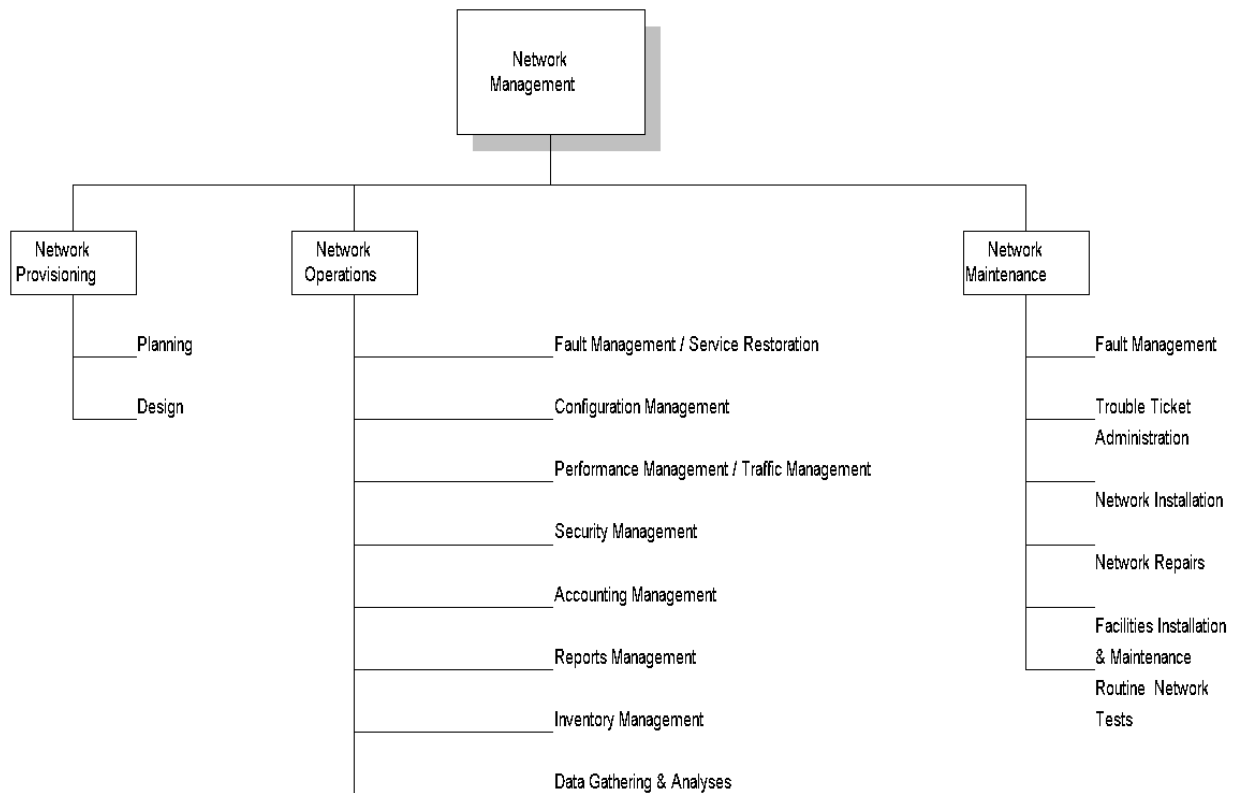
**Question No. 1**

What are the functions of network management?

**[1.5 mark]**

Network management can be defined as OAMP stands for operations, administration, maintenance and provisioning of any network system explains the features of network management.

Below is a top-down view of network management functions.



**Figure 1.22 Network Management Functional Groupings**

### **Question No. 2**

Show in a diagram how a Communication Model addresses the way information is exchanged between systems (agents/managers)? **[2 mark]**

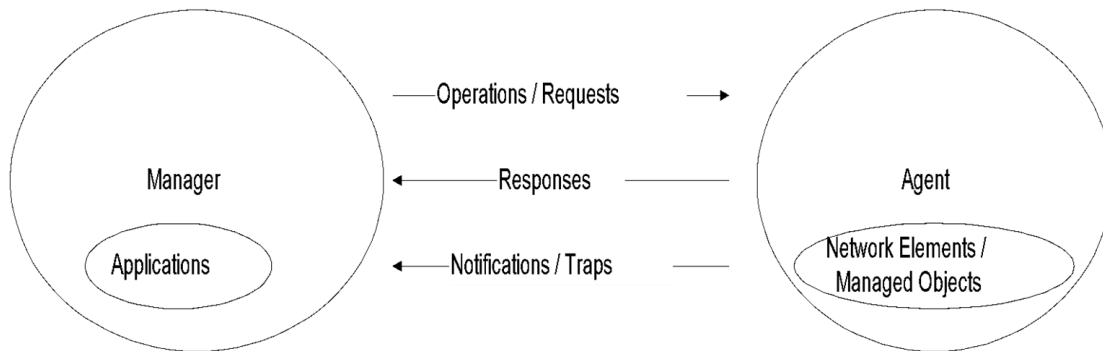


Figure 3.11 Management Message Communication Model

### **Question No. 3**

Discuss about the SNMP model **[3 mark]**

Ans: **Organization Model**

- Relationship between network element, agent, and manager
- Hierarchical architecture

**Information Model**

- Uses ASN.1 syntax
- SMI (Structure of Management Information)
- MIB ( Management Information Base)

**Communication Model**

- Transfer syntax
- SNMP over TCP/IP
- Communication services addressed by messages
- Security framework community-based model

### **Question No. 4**

The following data response information is received by the manager for a get-request with a varBindList.

<b>OBJECT</b>	<b>VALUE</b>
udpInDatagrams	500,000
udpNoPorts	1,000
udpInErrors	5500
udpOutDatagrams	300,000

a) Compose the get-request PDU

[1.25 mark]

PDU Type	Request ID	Error Status	Error Index	VarBind 1 Name	VarBind 1 Value	VarBind 2 Name	VarBind 2 Value	VarBind 3 Name	VarBind 3 Value	VarBind 4 Name	VarBind 4 Value
	1234										

PDU=0, see slide 13 of chapter 5

VarBind1 name = 1.3.6.1.2.1.7.1

VarBind2 name = 1.3.6.1.2.1.7.2

VarBind3 name = 1.3.6.1.2.1.7.3

VarBind4 name = 1.3.6.1.2.1.7.4

b) Compose the get-response PDU

[1.5 mark]

PDU Type	Request ID	Error Status	Error Index	VarBind 1 Name	VarBind 1 Value	VarBind 2 Name	VarBind 2 Value	VarBind 3 Name	VarBind 3 Value	VarBind 4 Name	VarBind 4 Value

PDU=0, see slide 13 of chapter 5

No change in VarBind name

VarBind1 value = 500 000

VarBind2 value = 1000

VarBind3 value = 5500

VarBind4 value = 300 000

c) Suppose that the information received contains the following error.

[0.75 mark]

OBJECT	VALUE
Error Status	Too big
Error Index	udpInErrors

i) What is the value of Error Status?

1, see slide 14 of chapter 5

ii) What is the value of Error Index?

3, the first error in the third var bind

iii) Error Status and Error Index will be filled in the request, the response, or both?

Only in the response