مجلس الخدمة المدنية
اللجنة الفاحصة

مباراة للتعيين في بعض المراكز الشاغرة
وللتعاقد على بعض المهام لدى وزارة السياحة

لمهام مهندس معلوماتية

مسابقة في إدارة الشبكات Networking

الوقت: ساعتان

Exercise 1:

Assume that you have assigned the 132.45.0.0 network block. You need to establish eight subnets.

A) Determine the Class of this network block.
B) How many binary digits are required to define the eight subnets?
C) Specify the subnet mask (in dotted-decimal notation) which allows the creation of the eight subnets.
D) Specify the eight subnets in dotted-decimal notation.
E) List the range of host addresses that can be assigned to Subnet #3.
F) What is the broadcast address for Subnet #3?

Exercise 2:

What is a :
A) Repeater?
B) Bridge?
C) Gateway?
D) Router?

Determine the OSI layer for each device.

Exercise 3:

A) Trace the pin connections of an Ethernet cable used between two computers only.
B) Trace the pin connections of an Ethernet cable used between a computer and a switch.

Exercise 4:

A) Based on the following routing table from a router, draw a diagram showing the approximate configuration of the Network that the router is a part of.

Destination	Gateway	Genmark	Flags	Metric	Ref	Use	Iface
192.168.5.20	192.168.10.7	255.255.255.255	UGH	1	0	180	eth1
192.168.1.81	192.168.10.5	255.255.255.255	UGH	1	0	187	eth1
192.168.10.0	0.0.0.0	255.255.255.0	U	0	0	63311	eth1
192.168.18.0	0.0.0.0	255.255.254.0	U	0	0	753430	eth0
192.168.64.0	192.168.10.5	255.255.192.0	UG	1	0	47543	eth1
192.168.128.0	192.168.10.7	255.255.192.0	UG	1	0	89011	eth1
127.0.0.0	0.0.0.0	255.0.0.0	U	0	0	564	lo
0.0.0.0	192.168.10.20	0.0.0.0	UG	1	0	183436	eth1

B) Explain what the flags in the routing table above signifies,

1. if a routing table entry has only the U flag, what does that mean?
2. if a routing table entry has UG flags, how does it effects the destination?
3. if a routing table entry has UGH flags, how does it effects the destination?
4. if a routing table entry has UH flags, how does it effects the destination?

Exercise 5:

A V29 modem operates at 9600 bit/s over a channel with bandwidth (BW) 500 to 2900 Hz. It uses an 8-state modulation phase with bivalent amplitude for each phase. calculate:

A) The valence of the modulated signal.
B) The maximum modulation speed and the actual modulation speed.
C) The signal to noise ratio for the proper function of the modem.

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