FACULTY OF INFORMATION TECHNOLOGY
BACHELOR OF SCIENCE IN INFORMATICS AND COMPUTER SCIENCE
ICS 2203 - Advanced Networking
Takeaway Assignment 1: A Recap of Basic Subnetting-CORRECTED COPY

Instructions:

- *You will handwrite this assignment. Ensure to include group and adm. number on your paper*
- *Submission Deadline:* ***Tuesday 14th August 2018, 5pm****.*

Question

A network administrator has chosen the following class **B** address: 172.16.0.0/24. Assume that he would like create a network with 20 hosts per subnet.

1) How many bits should remain in the chosen address?
2) How many bits should he borrow?
3) How many subnets will be created in total?
4) How many usable host addresses will there be per subnet?
5) Draw a subnet chart to represent the scenario above. The chart's headings are as follows:

Subnet No | Subnet Address | Usable Host Address Range | Broadcast Address

6) Determine the new subnet mask for the subnets in the table above and write down in
   a) Prefix(/slash) format
   b) Binary format
   c) Decimal format
7) Sketch a simple network topology to show how you would connect any two subnets from the scenario above. Use only 2 end devices to represent the **20** per subnet. On your diagram indicate the TCP/IP settings that you would configure on the various interfaces. Assume that you will require a single router and that each subnet will be connected on a single router LAN interface.

   Note: *TCP/IP settings include:*
   IP address
   Subnet Mask
   Default Gateway Address (where applicable)

   Use the symbols below for your sketch.