

**Belize High School
Junior Networking
Second Semester EXAM
June 2021**

PROJECT BASED EXAM

**Distribution Date: May 18, 2021
Due Date: June 8, 2021 by 1:00 pm
100 Points**

Instructions:

The exam is project based and requires the use of transparent paper, markers, laptop, (printer - optional) and packet tracer simulation program.

1. Prepare a layered topology for the given scenario. Use transparent paper and permanent markers to create each layer. Color-code each layer for legibility. Secure all five layers neatly.

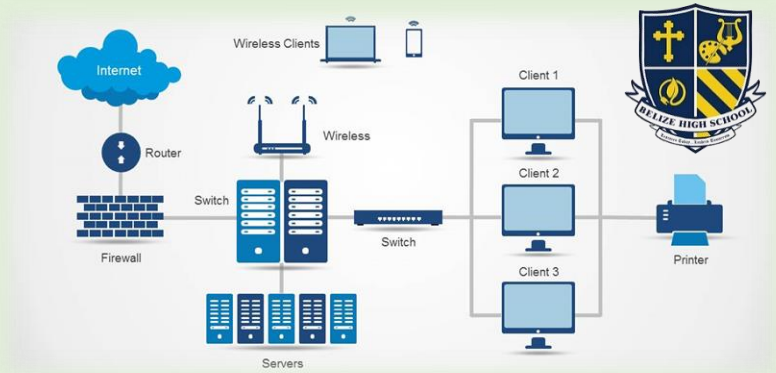
Layer 1	Bottom Layer	Layout of property
Layer 2	Fourth Layer	Physical topology – Ground Floor
Layer 3	Third Layer	Physical topology – Top Floor
Layer 4	Second Layer	Camera Topology
Layer 5	First Layer	Logical Topology

Prepare a legend identifying coded devices, host names, and room code for physical topology

Prepare an addressing table for the logical topology.
[50 points]

2. Using Packet Tracer, recreate the physical and logical topology of your network. Connect all devices in your physical topology and simulate a functioning network by configuring your devices. Ensure that your network has a minimum of the following:
 - a. Server
 - b. Router
 - c. Switch (minimum of three)
 - d. PC's or Laptops (minimum of four)
 - e. Wireless Devices (minimum of two)

[45 points]



Scenario:

Overview of Building:

Two-story rectangular building with 6 rooms on each floor. The ground floor includes a bathroom, server room, a waiting/reception area where the secretary has a desk work area, and three other rooms used as offices. The top floor includes a bathroom, a storage room, a conference room, a manager's office, and two offices.

It has a cabled network allowing various levels of restrictions with access based on personnel authorization. The manager and IT Director has access to all levels of the network, and they are the only two with access to the ADMIN VLAN.

There are two other VLANs on the network, but as the network administrator, you allow scalability by allowing space for many other VLANs and use VTP server and client. The Switch in the server room is the VTP server and all other switches are the clients. Ensure to document the Domain Name and password. The server is also in the server room and has DHCP with a pool size of 100. The other two VLANs are EMPLOYEES and GUESTS.

There are two computers in the waiting/reception area and one in server room that has console connection.

Each office has a PC

All rooms have cameras except for the bathroom.

The secretary area has a computer and printer (on the network), and a photo copier (not on the network)

The conference room, like all other areas in the building, has WIFI access, but it also has a PC for employees to use and a smart TV. This PC should be able to access three of the four VLANs on the network, but not the ADMIN VLAN.

The manager's office has a PC, printer, VOIP phone, and the DVR to monitor all cameras.

There are two laptops in the offices in the top floor (one per office) in addition to the PC. These laptops are also connected to the network.

The building is in the middle of the property and has five parking spaces on two sides of the building. There are cameras monitoring all sides of the property.

Example of layout:





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Note:

Print this grading rubric and submit along with Exam

Submission:

Booklet format:

Front Cover

Grading Rubric

Topologies

Print Screen of Packet Tracer – topologies

Print Screen of VLAN brief

Print Screen of VTP configurations

Print Screen of DHCP configurations

Ensure to secure document. (Spiral Binding or folder; NO staples)

Submit packet tracer document labelled as your first name and exam using the appropriate portal on Google Classroom. Example: JaneEXAM

NO LATE SUBMISSIONS WILL BE ACCEPTED.

Grading Rubric:

Item	Details	Points Allocated
Layered Topology -clearly prepare topologies using indicated materials	Layer 1	8
	Layer 2	8
	Layer 3	8
	Layer 4	8
	Layer 5	8
	Legend	5
	Addressing Table	5
Packet Tracer Simulation	Recreate Physical Topology in Packet Tracer	5
	Recreate Logical Topology in Packet Tracer	5
	Use of required devices	5
	VLAN creation and configuration	10
	VTP creation and configuration	10
	DHCP creation, pool generation and configuration	10
Submission	As indicated above	5
Total:		100