**Mobile and Wireless Technology (MWT) Assignment**

**Test Specification Table (TST)**

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| CLO3 | Propose WLAN Infrastructure design for an enterprise network with the usage of site survey tools and techniques (A3,PLO6) |

**Individual Assignment (40%)**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Question No** | **Topic** | **Question Vs Taxonomy** | | | | | | **PLO** |
| **Affective Level** | | | | | |  |
| **1** | **2** | **3** | **4** | **5** | **6** |
| **SQ** | **SQ** | **SQ** | **SQ** | **SQ** | **SQ** |
|  | Deploy a wireless LAN in a SOHO (Small Office/Home Office) environment   1. Site survey and other related considerations for deploying Wireless LAN 2. Hardware and Software requirements, considerations, and justifications |  |  | **50%**  **50%** |  |  |  | **6** |
|  | **Total** |  |  | **100%** |  |  |  |  |

**INTRODUCTION**

Wireless networks are becoming faster, more affordable and easier to adopt than ever. Growing small businesses that have adopted a wireless solution are already reporting immediate paybacks in higher productivity, flexible application mobility and greater worker satisfaction. A wireless infrastructure can make it easier to reconfigure the office space as the company grows and changes. Also, the total cost of a wireless local area network (WLAN) is relatively inexpensive as it has becoming very affordable nowadays.

**SCENARIO**

You have been appointed as a network consultant to deploy a wireless LAN in a SOHO (Small Office/Home Office) environment that houses 10 to 20 employees. The wireless LAN is intended to be used to access the Internet as well as for software such as word processors and spreadsheet.

The first thing to do in designing a wireless LAN (WLAN) is to conduct a wireless site survey and gather the fundamental requirements and considerations for deploying wireless LAN. According to SONICWALL (2019), the ultimate goal of a wireless site survey is to determine if there are any external radio interferences which causing problems and also to minimize the number of Wireless Access Point needed and where to optimally place it for best coverage.

You need to visit the company premise (or small office home office - SOHO) to conduct wireless site survey using appropriate tools and techniques. Refer to industry standard specified by Certified Wireless Networking Professional (CWNP) for the factors addressing wireless LAN site survey. In addition, you also need to produce technical report that document findings of the wireless LAN site survey (with evidences).

Based on the findings from the wireless site survey, propose WLAN Infrastructure design for an enterprise network and draw the infrastructure design using appropriate tool. Justify the WLAN hardware and software requirements for the WLAN infrastructure deployment.

**ASSIGNMENT REQUIREMENTS**

1. You are required to work as **an individual** network consultant.
2. The report should be *typed* and well presented. Submission of reports that are *unprofessional* in its outlook (dirty, disorganized, inconsistent look, varying colored paper and size) will not fare well when marks are allocated.
3. Ensure that the report is printed on standard A4 (210 X 297 mm) sized paper. Paper weight of 80 grams and above is highly recommended.
4. The report should have a one (1”) margin all around the page as illustrated below:



1. Every report must have a *front cover*. A transparent plastic sheet can be placed in front of the report to protect the front cover. The front cover should have the following details:-
   1. Student name.
   2. Intake code.
   3. Subject.
   4. Project Title.
   5. Date Assigned (the date the report was handed out).
   6. Date Completed (the date the report is due to be handed in).
2. **Plagiarism** is a serious offence and will automatically be awarded **zero** (0) marks.
3. **All** information, figures and diagrams obtained from external sources **must** be referenced using the Harvard referencing system accordingly.

*\*IMPORTANT\**

*You have to hand in your assignment hardcopy on time with the Course Work Submission and Feed Back Form.*

**Marking Scheme (based on SLT):**

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| --- | --- | --- | --- | --- | --- | --- |
| CLO3: Propose WLAN Infrastructure design for an enterprise network with the usage of site survey tools and techniques **(PLO6 - Digital Skills)** | | | | | | |
| **Section A (50%)** | | | | | | |
| **Marking Criteria** | **1-7**  **(Fail)** | **8-9**  **(Marginal Fail)** | **10-12**  **(Pass)** | **13-15**  **(Credit)** | **16-20 (Distinction)** | **Marks Awarded** |
| **WLAN Site Survey – Planning**  **(20%)** | Fails to gather business and site-specific requirements, identifying infrastructure connectivity and power requirements | Least attempt to engage in conversations for gathering business and site-specific requirements, identifying infrastructure connectivity and power requirements | Minimally engage in conversations for gathering business and site-specific requirements, identifying infrastructure connectivity and power requirements | Putting good effort to engage in the conversations for gathering business and site-specific requirements, identifying infrastructure connectivity and power requirements | Highly engaged in the conversations for gathering business and site-specific requirements, identifying infrastructure connectivity and power requirements |  |
| **Utilization of Site Survey Tools**  **(20%)** | Hardly able to use any relevant tools in conducting WLAN site survey  No diagrams / screenshot to show the usage of those tools | Least number of relevant tools used in conducting WLAN site survey  Limited diagrams / screenshot to show the usage of those tools | Satisfactory number of relevant tools used in conducting WLAN site survey  Sufficient diagrams / screenshot to show the usage of those tools | Good number of relevant tools used in conducting WLAN site survey  Good diagrams / screenshot to show the usage of those tools | Excellent number of relevant tools used in conducting WLAN site survey  Detailed diagrams / screenshot to show the usage of those tools |  |
| **Marking Criteria** | **0-2**  **(Fail)** | **3-4**  **(Marginal Fail)** | **5-6**  **(Pass)** | **7-8**  **(Credit)** | **9-10**  **(Distinction)** | **Marks Awarded** |
| **Documentation**  **(10%)** | No table of content and page numbering, font size and type are not standardized  Not able to show digital skills in utilizing features in Microsoft Word to produce good formatting standard | Table of content exist but without page numbers, report structure not standardized (including alignment and spacing)  Able to show some digital skills in utilizing features in Microsoft Word but has major issues in formatting standard | Table of content included with proper page numbering, standardized report structure & headings.  Able to show sufficient digital skills in utilizing features in Microsoft Word to produce good formatting standard, with minor issues. | Good structure and flow of documentation with appropriate header & footer  Good digital skills in utilizing features in Microsoft Word to produce good formatting standard without any issue. | Very good structure and flow of documentation, with very good appearance  Very good and proficient digital skills in utilizing features in Microsoft Word to produce outstanding formatting standard |  |
| **Section B (50%)** | | | | | | |
| **Marking Criteria** | **1-7**  **(Fail)** | **8-9**  **(Marginal Fail)** | **10-12**  **(Pass)** | **13-15**  **(Credit)** | **16-20 (Distinction)** | **Marks Awarded** |
| **Analysis and Findings**  **(20%)** | Poor analysis and findings produced as hardly any discussions performed related to the factors specified by Certified Wireless Networking Professional (CWNP) industry standard for WLAN site survey. | Limited analysis and findings produced related to the factors specified by Certified Wireless Networking Professional (CWNP) industry standard for WLAN site survey. | Satisfactory analysis and findings produced related to the factors specified by Certified Wireless Networking Professional (CWNP) industry standard for WLAN site survey. | Good analysis and findings produced related to the factors specified by Certified Wireless Networking Professional (CWNP) industry standard for WLAN site survey. | Excellent analysis and findings produced related to the factors specified by Certified Wireless Networking Professional (CWNP) industry standard for WLAN site survey |  |
| **WLAN Infrastructure Design**  **(20%)** | Hardly able to produce WLAN infrastructure design for the proposed WLAN deployment  Poor justification of hardware and software requirements | Least effort in producing WLAN infrastructure design for the proposed WLAN deployment  Limited justification of hardware and software requirements | Satisfactory effort found in producing WLAN infrastructure design for the proposed WLAN deployment  Satisfactory justification of hardware and software requirements | Good effort found in producing WLAN infrastructure design for the proposed WLAN deployment  Good justification of hardware and software requirements | Excellent effort found in producing WLAN infrastructure design for the proposed WLAN deployment  Excellent justification of hardware and software requirements, with evidence. |  |
| **Marking Criteria** | **0-2**  **(Fail)** | **3-4**  **(Marginal Fail)** | **5-6**  **(Pass)** | **7-8**  **(Credit)** | **9-10**  **(Distinction)** | **Marks Awarded** |
| **Referencing**  **(10%)** | No in-text citation and very minimal references. Major issues in the referencing format.  Referencing were done manually, without using Microsoft Word features | Minimal in-text citation and references used. Minor issues in the referencing format.  Not able to fully utilize the referencing features in Microsoft Word | Sufficient number of references and citation in the report. No issue in the referencing format  Able to fully utilize the referencing features in Microsoft Word | Recent source of references used, with proper reference list. Limited in-text citation in the report  Good utilization of the referencing features in Microsoft Word | Very good quality of references used, with proper citation and reference list for all facts and diagrams used  Proficient in using the referencing features in Microsoft Word, without error |  |
| **Total Marks** | | | | | | **/100** |
| **Additional Comments :** | | | | | | |