

LOCATION: SWANSEA

LLEOLIAD: ABERTAWE

LEVEL 5

LEFEL 5

EXAMINATION PERIOD
JULY 2016

CYFNOD ARHOLIADAU
GORFFENNAF 2016

MODULE CODE: M5X01045
Wireless Networks

TIME: 2 HOURS

ANSWER THREE QUESTION OUT OF FOUR

Equipment or materials required – Basic Calculator

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ANSWER THREE QUESTIONS

1. First Exam Question

- a. How are WLANs different from LAN?
(5 Marks)
- b. Critically analyse the planning process considerations for WLAN and state why it is important to do such planning. Diagrams may be used.
(20 Marks)

2. Second Exam Question etc.

- a. A WLAN has a path loss at 1m of 40.05dB. Calculate the coverage of the WLAN assuming the distance power gradient, α has been estimated to be 4 for this urban area and the maximum acceptable path loss (link budget) is 104dB. You can assume the relationship between path loss, L_0 and the maximum acceptable path loss, L_p is:
$$L_p = L_0 + 10\alpha \log(d)$$
 where d is the coverage distance.
(8 Marks)
- b. With the aid of appropriate diagrams explain the following:
 - i. Ground-wave propagation (5 Marks)
 - ii. Sky-wave propagation (6 Marks)
 - iii. Line-of-sight propagation (6 Marks)

3. Third Exam Question

In reference to wireless networks:

- a. Draw and clearly label the categories of wireless networks.
(10 Marks)
- b. Explain any Three of the categories
(15 marks)

4. Fourth Exam Question

- a. In reference to IEEE 802.11 logical topologies, describe the following:
 - i. Basic Service Set (BSS) (5 Marks)
 - ii. Independent BSS (IBSS) (5 Marks)
 - iii. Extended Service Set (ESS) (5 Marks)
 - iv. Distribute System (DS) (5 Marks)
 - v. Roaming (5 Marks)

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