

A-1143

Total Pages : 4

Roll No.

BCA(N)-123

Setting up wireless Networks

Examination, June 2025

Time : 2:00 Hrs.

Max. Marks : 70

Note :- This paper is of Seventy (70) marks divided into two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given therein. *Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.*

Section-A

Long Answer Type Questions (2×19=38)

Note :- Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any *two* (02) questions only.

1. Answer the following :
 - (a) What is an antenna ? Describe any two types of antennas used in wireless communication. **(6 marks)**
 - (b) What is the role of reflectors in antenna systems ? Explain with a diagram. **(5 marks)**
 - (c) Describe the function of amplifiers in wireless communication systems. **(4 marks)**
 - (d) Explain any one practical antenna design used in real-world applications. **(4 marks)**
2. Answer the following :
 - (a) Draw the OSI model diagram and label its layers. **(5 marks)**
 - (b) Describe the role of each layer of the OSI model in simple terms. **(10 marks)**
 - (c) How is the OSI model different from the TCP/IP model ? **(4 marks)**
3. Answer the following :
 - (a) What are the key factors to consider while planning a wireless network ? **(6 marks)**
 - (b) Explain the concept of link budget in simple terms. **(5 marks)**
 - (c) What is the purpose of using repeaters in wireless communication ? **(4 marks)**

- (d) Write any two noise avoidance techniques used during deployment. **(4 marks)**
4. Answer the following :
- (a) Why is security important in wireless networks ? Mention any two common risks. **(5 marks)**
- (b) What is authentication ? Explain the role of 802.1X in wireless authentication. **(5 marks)**
- (c) Describe encryption in wireless networks. Mention any two methods. **(5 marks)**
- (d) What is inter-organisational roaming ? Give one example. **(4 marks)**
5. Answer the following :
- (a) What is a photovoltaic (PV) system ? Describe its basic components. **(6 marks)**
- (b) What is the role of batteries and charge regulators in solar power systems ? **(5 marks)**
- (c) Explain how solar panel orientation affects performance. **(4 marks)**
- (d) What are the basic factors to consider while calculating the cost of a solar installation ? **(4 marks)**

Section–B

Short Answer Type Questions (4×8=32)

Note :– Section ‘B’ contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. What is modulation? Explain any two types of modulation used in wireless communication.
2. Define bandwidth. How does it affect the performance of a wireless network ?
3. What is the role of an Access Point in wireless networks ?
4. Explain mesh networking and write two advantages of using mesh networks.
5. What are the common tools used for network monitoring ? Mention any two with their functions.
6. Describe the function of the TCP/IP model. How is it different from the OSI model ?
7. What is SSID ? What are the important points to consider while placing access points in a building ?
8. Define the term "Fresnel zone." Why is it important in long-distance wireless communication ?
