

**UNIVERSITY COLLEGE TATI (UC TATI)****FINAL EXAMINATION ANSWER SCHEME**

COURSE CODE	: BNS 3143
COURSE	: NETWORK ANALYSIS AND DESIGN
SEMESTER/SESSION	: 2-2023/2024
DURATION	: 3 HOURS

Instructions:

1. This booklet contains 5 questions. Answer ALL questions.
3. All answers should be written in answer booklet.
4. Write legibly and draw sketches wherever required.
5. If in doubt, raise your hands and ask the invigilator.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

THIS BOOKLET CONTAINS 4 PRINTED PAGES INCLUDING COVER PAGE

QUESTION 1

- a) Explain Plan Design Implement Operate Optimize (PDIOO) network life cycle. (10 marks)
- b) Briefly explain the importance of network design on business and technical goal. (4 marks)
- c) Determine **THREE (3)** suitable parameters to calculate optimal traffic load. (3 marks)

QUESTION 2

- a) List **FIVE (5)** factors in characterizing current internetwork that are used to support decision in network enhancement. (5 marks)
- b) Briefly explain the importance of hierarchy and modularity for network design. (4 marks)
- c) Describe the benefit of a structured and manageable approach in IP addressing in logical design. (4 marks)
- d) Provide suitable scenario to deploy of static and dynamic addressing. (4 marks)

QUESTION 3

- a) Describe **FOUR (4)** important criteria for selecting an internetworking device in LAN. (8 marks)
- b) Provide **ONE (1)** advantage distributed building-cabling design on two connected 4 storey building shown in Figure 1. (2 marks)

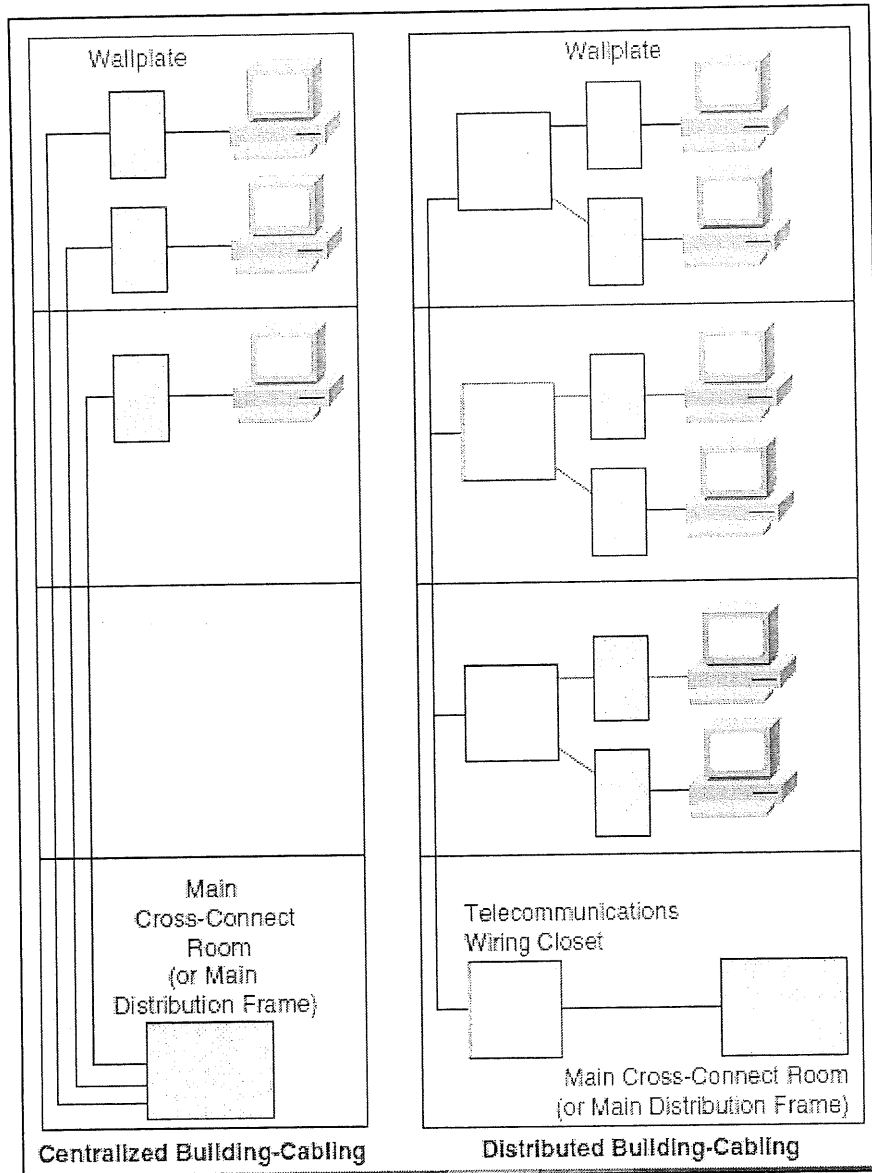


Figure 1

- c) Describe a scenario in a campus network where the requirement for wireless connectivity arises due to geographical considerations. (7 marks)

QUESTION 4

- a) Provide **FOUR (4)** important criteria for selecting a WAN service provider. (8 marks)
- b) List **THREE (3)** common WAN technologies. (3 marks)
- c) Briefly describe **TWO (2)** advantages and **TWO (2)** disadvantages of using Virtual Private Network (VPN) for connecting geographically dispersed locations in a campus network. (8 marks)
- d) Briefly describe **THREE (3)** advantages of using 5G technology in a campus network. (6 marks)

QUESTION 5

- a) Explain **THREE (3)** purpose of network testing. (6 marks)
- b) Explain an advantage and disadvantage of testing a new network design component on a production network during normal business hours. (6 marks)
- c) State **THREE (3)** ways to test a prototype network system and provide your preference on implement the prototype network system in campus network. (4 marks)
- d) Provide **TWO (2)** steps and acceptance criteria in test script according to the following requirement: (8 marks)

Title :	Network Connectivity Test Script	
Objective:	To confirm network connectivity per host at access layer to default gateway.	
Software tool:	Command prompt	
Device:	Computer	
Step ID	Step Description	Acceptance criteria
1		
2		

-----End of question-----