

**UNIVERSITY COLLEGE TATI (UC TATI)****FINAL EXAMINATION QUESTION BOOKLET**

COURSE CODE	: DNT 2014
COURSE	: SCALING NETWORKS
SEMESTER/SESSION	: 2-2024/2025
DURATION	: 3 HOURS

**Instructions:**

1. This booklet contains 5 questions. Answer **ALL** question.
2. All answers should be written in answer booklet.
3. Write legibly and draw sketches wherever required.
4. 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 5 PRINTED PAGES INCLUDING COVER PAGE**

**QUESTION 1**

- a) State **TWO (2)** network devices can support layer 3 of OSI model. (2 marks)
- b) List **THREE (3)** layers of hierarchical LAN design. (3 marks)
- c) What are **THREE (3)** benefits of extending access layer connectivity to users through wireless medium? (3 marks)
- d) Define the following terms.
- i. Port density (2 marks)
  - ii. Link aggregation (3 marks)
  - iii. Power Over Ethernet (POE) (2 marks)
- e) State **TWO (2)** example of devices that usually use PoE. (2 marks)
- f) Routers is very important devices in computer network, define **THREE (3)** functions of router. (3 marks)

**QUESTION 2**

- a) There are **THREE (3)** categories of routers. Select and discuss **ONE (1)** of them. (3 marks)
- b) Based on Figure 1, write command on R1 for the following task.

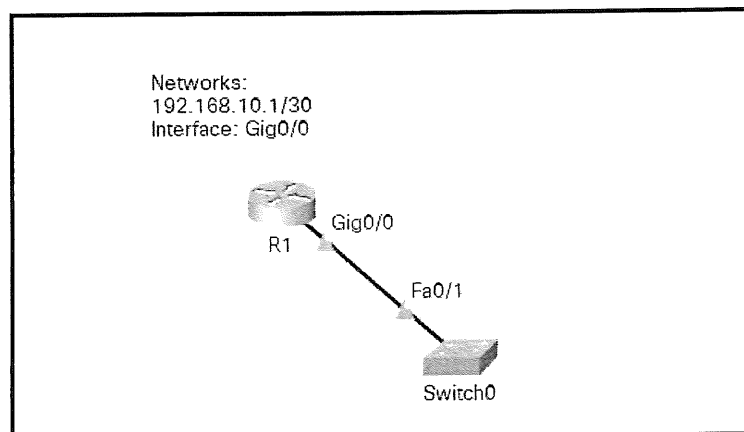
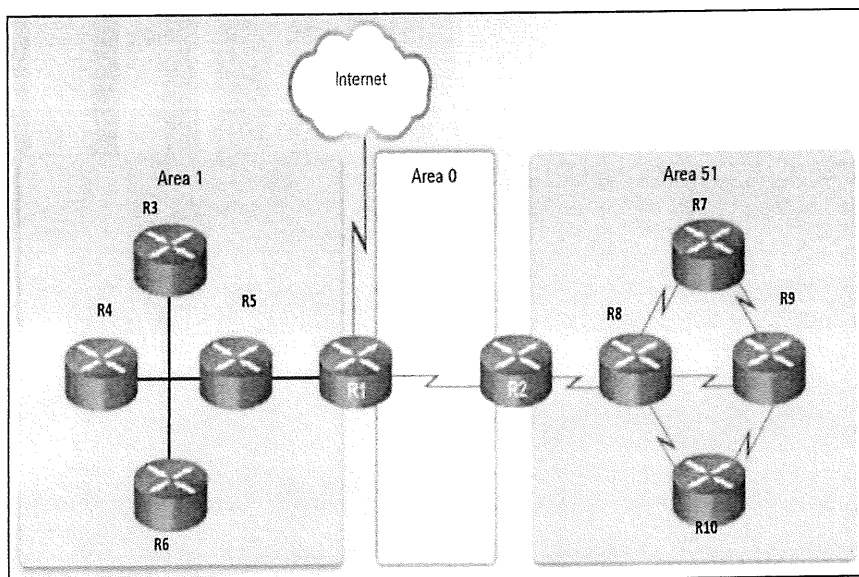


Figure 1: Network Topology 1

- i. Configure hostname for identification (1 mark)
  - ii. Banner MOTD. (1 mark)
  - iii. Set a local password to control access to various privilege level (use any password). (1 mark)
  - iv. Password on Console 0 (3 marks)
  - v. IP address assignment. (3 marks)
- c) Describe **THREE (3)** of wireless technologies. (6 marks)
- d) Identify **TWO (2)** examples device use in WPAN. (2 marks)

**QUESTION 3**

- a) State **THREE (3)** features included in Wireless Home Router. (3 marks)
- b) Illustrate the process of client associate with an AP. (6 marks)
- c) State **THREE (3)** issues in Single area OSPF. (3 marks)
- d) Based on Figure 2 below, identify the following in Multiarea OSPF.



**Figure 2: OSPF Network Topology**

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- i. Backbone area (1 mark)
  - ii. Regular area (2 marks)
  - iii. Describe non-backbone area of OSPF (2 marks)
  - iv. Area border router (ABR) (2 marks)
  - v. Internal router (2 marks)

**QUESTION 4**

- a) State **FIVE (5)** commands can be used to verify OSPFV2. (5 marks)
- b) Produce **FOUR (4)** things about EIGRP routing protocols. (4 marks)
- c) Describe the following EIGRP metrics.
  - i. Bandwidth (2 marks)
  - ii. Delay (2 marks)
  - iii. Reliability (2 marks)
  - iv. Load (2 marks)
- d) Discover how router creates neighbor table (1 mark)

## QUESTION 5

- a) Explain how EIGRP update packets that are used to routing information propagation? (6 marks)
- b) Answer the following question based on Figure 3 given

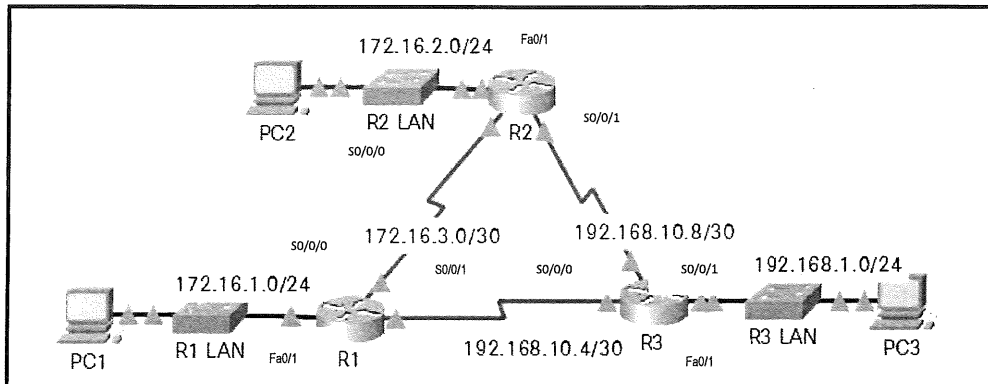


Figure 3: Network Topology 2

- i. Configure routing EIGRP with process ID 2 for R2. (7 marks)
- ii. Enable passive interface in R3. (1 mark)
- c) List **FIVE (5)** EIGRP IP packets. (5 marks)
- d) Describe about Autonomous System (AS) (2 marks)

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

