

# CS3640 Written Assignment-4

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Due: May 3, 2022 midnight  
Submit as a single PDF on ICON

This assignment covers the research topics of SDN and cloud computing. The goal is to help students learn to critique and analyze emerging developments in the field of networking. Please remember that copying answers verbatim from the paper/articles earns no points.

## **Part-A** (Software Defined Networking)

A1. Describe SDN's core abstraction of *match-plus-action* in your own words. How would you use this abstraction to implement a firewall? **20 points**

A2. Why did Google transition their networks to SDN? Highlight any two (technical) reasons that made this shift necessary. **20 points**

A3. Imagine you are a maker of high-end networking gear, e.g., Cisco. Give two reasons why you may find it beneficial to embrace the SDN revolution? **20 points**

## **Part-B** (Cloud Computing)

B1. We discussed how cloud computing is revolutionizing data storage and computation. Describe two advantages and two disadvantages of cloud computing. Please keep your answers technical and CS-focused. **20 points**

B2. Datacenters pose many new challenges for the field of networking. Name and describe two such challenges. You don't have to provide any solutions. **20 points**

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