1. Introduction

Cloud computing is the supply of computing resources like storage, processing power, and software programmes through the internet. With cloud computing, customers can utilise any device and any location to access these services as long as they have an internet connection.

Users can make advantage of the resources of cloud service providers to suit their computing demands rather than buying and maintaining pricey hardware and software. Organizations can utilise cloud computing to scale their computing resources up or down as necessary, pay only for the resources they actually use, and lessen the workload associated with managing their own infrastructure.

1.1 Advantages and factors to be taken into account when using cloud services

High availability - A system becomes available 99.99% of the time when many resources are deployed. To make sure that workloads are available almost constantly, Azure, for instance, provides availability sets for virtual machines.

Scaling – When you can add extra virtual machines as inbound requests increase. Horizontal scaling done by hand is represented here.

Elasticity – Occurs when a rapid increase in traffic causes your App Services web app to automatically seek more computer resources. You can do this as necessary to add and remove resources.

Agility – The capacity to create, test, and launch software products quickly to support corporate expansion. Instead of provisioning and managing the resources, they may concentrate on other issues like security, monitoring, and analysis thanks to cloud agility.

Fault tolerance – Occurs when users are still able to access data that was delivered to a datacenter in that state despite a state-wide power loss in the area. The Azure design includes redundancy such that in the event of an area's failure, a paired region at least 300 miles away will take over.

Disaster recovery – Occurs when data that was lost as a result of an event may be recovered.

Economics of scale – The ability to do tasks more effectively or at a lower cost per unit when operating at a bigger scale is known as economies of scale.

Capital Expenditure (CapEx) – CapEx is the practise of paying for physical infrastructure up front before deducting those costs from future tax liabilities. CapEx is an initial expense whose value declines over time.

Operational Expenditure (OpEx) – OpEx is now paying for services or goods and receiving invoices for them. This cost can be written off against your tax bill for the current tax year.