Module 1:

**1. Explain the Evolution of the Web**

**Web 1.0**

• It is 1st generation of the WWW.

• Web 1.0 is one-way broadcasting, meaning only the site owner can publish information.

• It was the content web, static information.

• coined by Tim Berners-Lee as “read-only” web

• focus was on content delivery rather than interaction and production.

• A system of internet servers that support specially formatted documents using HTML.

• WWW is not synonymous with the internet.

• The Internet is a massive network of networks, a networking infrastructure. While WWW or simply the Web, is a way of accessing information over the medium of the Internet.

• The Internet connects millions of computers globally. WWW is an information-sharing model that is built on top of the browsers

**Web 2.0**

• It is 2nd generation of the www that focuses on the ability for people to collaborate and share information online.

• It signifies a conversation between the original author of the content and all those who can

comment or participate.

• wisdom, people-centric, participative, and read-write web

• It refers to the transition from static HTML web pages to a more dynamic web.

• It is also regarded as the social web. Eg: Wikipedia, Facebook, and youtube.

• Web 2.0 is the business revolution in the computer industry caused by the move to the Internet as a platform

• Recommendation Systems

• But Security was an issue!

**Web 3.0**

• Web 3.0 is an extension of Web 2.0.

• Owning data with Decentralized web

• Non-fungible tokens, or NFTs ( .nft, .crypto, .bitcoin, .x, .blockchain)

• Records in Blockchain

• Need not renew

• Use for website, social media handle

• decentralized hosting (IPFS)/ Serverless hosting

• Introduces Security

• Data on the web are Semantic-based, rather than keyword

• web 3.0 is also known as the “Semantic web”.

• It includes several technologies in order to arrange and structure data you can find on the internet to make it available and usable by programs and software thanks to a metadata system.

• The purpose is to make the web readable by machines and not only by humans.

• It is also about language, or ontology, for recording how the linked data relates to real-world objects, allowing a 'machine' to `understand' the semantic meaning and the difference between Jaguar (car) and Jaguar (animal).

• It starts with the Resource Description Framework (RDF) which gives the specifications of such a metadata data model. It is also the Web Ontology Language (OWL) and notations like RDF Schema (RDFS).

**Web 4.0**

● Here is the addition of more technology rather than only content

● Connect the device to humans

○ Machine Learning

○ VR

○ IOT/ Internet of Everything

○ Artificial Intelligence

● Tools to make it more secure

● Intelligent Web

● Eg: facial recognition, an electronic agent will recognize users by their voice through an Internet-connected device, Personalized search, autosuggestion

• Web 4.0 also known as the Symbiotic web.

• It will aim at the interaction between humans and machines in symbiosis. Humans and machines will have a symbiotic relationship, where machines will be capable of learning from human interactions and providing insights that can assist in decision-making.

• In Web 4.0 services are autonomous, proactive, self-learning, collaborative, and content-generating agents.

• Fully mature semantic and reasoning technologies, as well as AI are the foundation.

• They use and support Web databases through intelligent agents.

• Examples include services that interact with sensors and implants, natural language services, or virtual reality services.

**Web 5.0**

• focus on empowering users to reclaim control and ownership of their data

• Former Twitter CEO Jack Dorsey recently announced his vision for a new decentralized web platform that is being called Web 5.0 and is being built to return “ownership of data and identity” to individuals.

• The Block Head (TBH). Web 5.0 is aimed at “building an extra decentralized web that puts one in control of one’s data and identity”.

• linked, emotive, and symbolic web that communicates with humans.

• It is based on emotional association with humans, paving the way for more personalized experiences, which will attract more people ever.

• Eg: a personal assistant

• think of possibilities with web 5.0 examples

• such as a website that can map the emotions of a person.

• The website can use facial recognition as a tool for mapping the person’s emotions when the user wears a headphone.

• Users can interact with the website, and the website would respond accordingly based on the emotions of the person.

**2. Explain Web Analytics 2.0 in details**

3. Discuss Clickstream Analysis

4. Discuss the strategy to choose a web analytics tool.

5. Explain factors for Measuring the success of a website

6. Explain 3.0 and Semantic Web.

7. Explain the Characteristics of the Semantic Web

8. Explain the Components of the Semantic Web

9. Explain Semantic Web Stack,

10. Discuss N-Triples and Turtle,

11. Discuss Ontology

12. Discuss RDF

13. Discuss SPARQL

Module 2: [CO 2, BTL L1,L2]

14. Explain TypeScript Internal

Architecture

15. Discuss TypeScript Types with

suitable examples

16. Explain variables and operators in

TS

17. Explain decision Making and loops

with suitable examples.

18. Explain TypeScript Functions

19. Explain TypeScript Classes and

Objects

20. Explain TypeScript Modules

21. Explain Inheritance in typescript.

22. Explain function overloading with

suitable examples.

23. Explain features in TS.

24. Typescript v/s Javascript.

25. Var v/s Let

26. Null v/s Undefined.

Module 3: Angular [CO 3 L2, L3]

1. Discuss the Need of AngularJS in

websites.

2. Explain AngularJS modules.

3. Explain AngularJS built-in directives

with example and syntax.

4. Explain AngularJS custom directives

5. Discuss AngularJS expressions with

syntax

Explain Angular JS Data Binding

6. Explain AngularJS filters

7. Explain AngularJS controllers

8. Explain AngularJS scope

9. Explain AngularJS dependency

injection.

10. Explain Angular JS Services

11. Design a registration / Feedback

Form and perform Validation of

fields.

12. Explain Routing using ng-Route,

ng-Repeat, ng-style, ng-view. With

suitable example

13. Discus Built-in Helper Functions