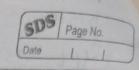
DEEPAK SARAF ARYAN D15B SDS Page No. MPL ASSIGN-2 01) Define Progressive web 1/1 and eschlain is significan in modern web development Discuss the key characteristics that differentiale pins from traditional mobile spipe. A progressive web App (PWA) is a type of web application that works like a mobile app but num in a browser. It can be installed on a device, work offlire and provides a fast and smooth user experience. Aignificance of PWA is Modern with development: Jose Matform compatibility: - works or bost mobile and desktop with a single codebase. 2] offine support: - Non function without
the internet using cached data.

3] Fast Performe: - loads quickly, even on
slow networks. 2) NO App Store Required: - Uters can install
it directly from browser.

5) lower Development Cost: - One PWA can
replace reparate Android and ios appe. Mobile Apps:



1	
	Feature PWA Indditional Mobile XX
	Installation Direct from Download App browses From App store
	Internet works offline Usually requires Required with racking internet
	Required with racking internet
	Renformance fast with Faster but service worker reeds installation.
	was a second to the second present and the second s
	updates sutomatic, no Manual explates
	Emplicance of 160A is MORENA 1865
	Development lower (one Higher (separate cost codebuse for all) apple for
	Development lower (one Higher (separate cost codebase for all) apply for each platform)
)	Define outhonsine work davis de 115
	Define ousponsine web design and explain its jumportance in context of Progre-
	some well Apps. Compare and constract yesponsine fluid, and adaptive wet
	design approaches.
	Definition of Responsive web Designs.
	Responsive alle Design (RWD) is technique that makes well pages adjust automatically
	to different sorem sizes and devices. It
	endevies a good use experience on
	mobiles, tabless and desktops without

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reeding separate versions of website. Importance of Responsive Design in PWAS:
Better User Experience: - PWAS work smoothly

on any device:

27 Faster load time: - optimized design improves

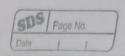
speed

27 SEO Benefits: - Google nanks responsive

sites higher. comparison of well well Design Approaches: How It works Pros cons Approach ulorks on can de Uses Flexible Responsive grids and CSS all devices complex media queries improved to design SEO. to adjust · layou! Uses percent-Huid works well less conho based widths or different over scalle sizes layout instead of fixed piscels, so or large easy to elements implement feeleng. ocesize smoothly More efforts uses fixed layout optimize d Adaptive for known

SSIDDHII

Page No. Acraen sizes to design screen size. Key Differences: · Responsine adapts dynamically to all · Huid resizes smoothly but may not be of fully optimized. · Adaptive louds different layouts based on device type. 9.3] escribe the lifecycle of service workers including registration installation and activation phases. lifecycle of Service Workers A service worker is a sweight that of runs in background and helps a web app work offline load faster and send push notifications. The lifecycle has three mair phases: three mair phases :-The browser siegisters the service worker using Jawascrift.



if ('service Worker' in navigator) {

navigator. service Worker. register ('(sw.js')

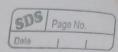
then() => console.log ('service Worker

Registered'))

rater (error => ronsole.log ('Registeration

failed:', evror)); rode Example: · This telly the browser to install and activate the Service Worker. 2] Installation Phase · The Lewise Worker downloads necessary
files (HTML, CSS, JS) and stores them
in cache.

· 9f successful, it moves to the activation
those. lode Example: self. add Event Listener ("install", event => { event. wait until ratches open ('app cache') then (cache => { here seturn cache add AU (['1', 'I index html', - '1 styles (55']); 1/styles.css']); · This ensures the app loads even without the internet.

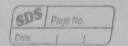


3] Activation Phase . The old service Worker is replaced with the new one. · Unused cache files from previous version are deleted. code Example: self. add Event listener ('activate', event => { event wait Until (ratches keys (). then (keys => ? return Promise-all (keys map (key => {

if (key! = = 'app-rache') {

return caches delete (key);

4 · The service worker is now fully active of and nontrole network orequest. Jinal step: Fetch & synce Once activated, the service worker intercepts network neguests, serves cathed files and synce data when the internet is available.



Explain the use of Indexed DB in the Service worker for Data Storage. 9.4] for Data Storage Indexed DB is a browser database that =7 stores large amounts of structured data like JSON objects. It nepps AWAS work offine by saving and oretrieving data efficiently. Why Use Indexed DB in Service Workers?

I offline support: - stores data when offline
and syncs it later. 2] Efficient storage: - saves stoructured data
like user settings, cont items or form
inputs:
3] Faster Access: - Retrieves data quickly without
reeding a network orequest:
a) Persistent Data: - Data remains saved even
alter the Jurantes is closed. after the browser is closed. How service workey Use Indexed DB? Opening the Database let db; let request = index DB. open ('My Database', '); request. onsuccess = function (event) {
 db = event. target result;
}

coreating a store & Adding Data

request orupgerade needed = function (event) {

let db = event target result;

let store = db . create Object store ('Users'

{ key Path: 'id' 4);

store add (fid: 1, name: 'John Doe', age:15

3);

Let transaction = db. transaction ("'Ubers', 'readonly')

let store = transaction object store ("'Users');

let get User = store get (1);

getyper. onsuccess: function() {
console.log (getyper./result);