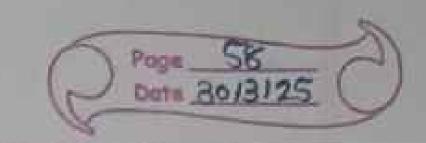
# Tot Belimils Popes



(Q-I)

1960s: The Concept of interconnected computers began with the ARPANET, funded by DARPA in 1969 1980s :- Fisst connected Devices one of the fisst tot devices was a cocol-cola vending machine at Connegic Mellon to university, connected to the integrat in the easty 1980s 1990 :- The "Internet Toasten" John Romkey connected a toughted to the integret for the first time, enobling remote Control 1993 :- First WebCam Engineers at the University of cambaidge caed the first integret-Connected comesci to monitos a Coffee pot 1998: - IPV6 Development IPV6 was intoduced, allowing to an enormous increase in the number of devices that could be connected to the momet 1999: - Team Tot The teem "Intermet of Things" was coined by kevin Ashrom a Bainkeh technology planeer, duaing his wax at TITT'S Auto-ID Lobs With the said the said of the said to the said to

# modern Evolution and Applications

2000 !- Consumes and Industrial Adoption The easy 2000s

Saw the rise of Consumes devices like Smart

thermostats and Indistrial applications Such as

RFID for Supply chain Management I Cognited.

2010 - IoT Boolifesonion This decade witnessed a

Messive Osowth in IoT devices, with applications

expanding to Smast homes health case,

Tobskulture, and industry.

2020 - IoT and Emerging Technologies. The integration of ioT with AI, methine leading, and SG networks has further expanded its capabilities, leading to more advanced application like Smart Cities autonomous vehicles and Real life time date analytics

#### 2. Sensons

• Devices that collect data from the envisonment Such as temperatuse, humidity, motion, or light.
• A to the momenter, measuring room temperatuse.

#### Aroctuatos s

Devices that tack action based on data received oftem making physical adjustments.

A theomograph changing the room temperature

### Connectivity

. The methods through with sensoss devices, and systems Communitate with each other.

wifi, Bluetooth, zigbee, Lora WAN, Cellulas, networks.

## pota Processing

systems and algorithms tot that analyze the dutal collected from iot devices.

. Analyzing temperature dated to control HUAC system

# Edge computing

Processing detal close to the source of data steneshation to reduce tothermy and bandwidth use

THE BUTTON THE PROPERTY OF THE PARTY OF THE

A smart comesso processing video tookuse boally before Semling relevent dutil to the

LAS LASTANCE LESSONS PROPERTY PROPERTY CONTINUES DE LA CONTINUE DE

## Calaud Computing

Using remote servers to store, morage and process detal affering subility and reduced costs.

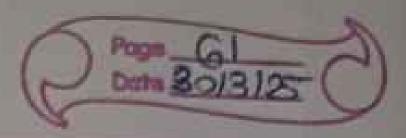
storing and oralyzing large detasets from multiple for devices in the Cloud

# sacrains and policey

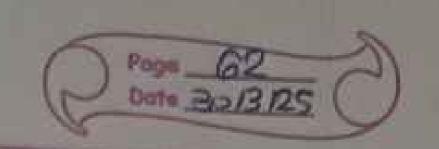
Measures to protect date and devices from

unauthosized access and brackes

Frangeion, Secuse Communication Bratocols,



Q-ICAL I Smast Homes Home outlo motion system like smast lighting Smart thermostats, smart locks, and sociality compens. Smasst thermo states teasining your schedule to optimize heating and cooling Healthcase TOTAL TELEVISION OF THE PROPERTY OF THE PROPER weapoble filmess thockess remove porkent monistaging and Smast medical devices. weapables toacking physical activity and vital signs. Industrial FOT Psedictive maintanance, asset toacking, and Smost monutactiosing sensoss on fectosy mechines paedicting main-among meds preventing breakdowns Enhanced logistics thoough meal-thing. thacking of goods and assets



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Therest of State will see to

### Aggioultuse

- Psecision farming, smoot irrigation systems, and
- Soil sensons measuring moisture and nutrients optimizing imaged on a featilization.

# Smoost citles

- energy-efficient buildings.
- · Smoot bing signaling when they need to be emptied
- 2. Serveity and Privacy
- iot devices often teams mit sensitive data,
  making them prime teamers for hockers.

  Ensuring that only authorized users con

  across and control devices is critical

# Interoperability

Devices from different manufactures may not communicate efficiently due to varied standards and protocols.

The obsence of a universal standard hinders seamless itemsortion.

### Scalobility

- As the numbers of Connected devices grows, monaging and maintaining them becomes complex
  - The vast amount of date generalted can overwhelm notwork infrastructure and processing capabilities.
  - Implementing efficient networks management System and edger computing to process data locally. The state of the s

to the first the second of the second

### Q-2(A)

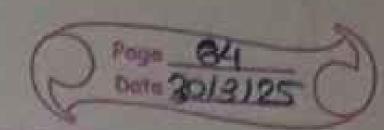
### I. Penception Loyes

· This is the fisist layer, consisting of Sensoss and actuatoss that gathes dotter from the physical envisonment. Sensoss RFID Tags OR codes. Collecting data and convening it into digital

# Network Layes

signals

This loyes facilitates date thansmission between devices ond SEQNE 95



Gotways , fourtoss , protocols. Ensuring reliable data though various communication channels The same to give the same about the Edge / For Computing layers THE THE PERSON OF THE PERSON O often included between the network and processing lates this later handles data processing close to whose it's generated to reduce. otenoy . Edge devices foo rodes · Real-time data processing analysis and stonege CLUMB FOR A PERSON WITH THE Bocessing layes The same that the same of the · This layers involves the computational processes that analysse and monipulate the collected data · Seevers, doud plotforms, dotal centons. Application 10409 The property of the second of This layer where end-usees interact with the IST System. Uses imessaces APIS. Bouiding tailoged services and applications based on the processed daria

The second second second second second

Q-2(A)

The technology behind the 10T encompasses of wide range of components and systems that work To gather to enable the Seamless connectivity.

The train the second district the second

(5) Sensons and Adjustons

onvision such as temperature, humidity is humidity

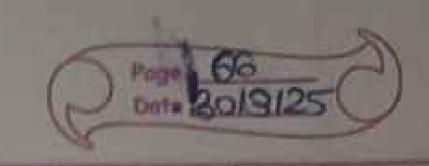
bevices that phonfosm actions based on a commands recived such as thorning on a light, adjusting a thorniostat, as opening a value.

© Compectivity

Technologies lik wi-fi Bhretooth zighee and Lolld enable wiseless communication between devices.

26, 36, 46, and go network provide wide - ased Governage and high - speed add data transmission.

devices too tasks like contactless payments.



- 2. Machine To Mechine (M2M)
- · Mam communication is a key aspect of the
  - . A neless to the disect exchange of information between delices without human invention.

key components of T12M communication.

- These are endpoints equipped with sensors, actuatoss, as other data correction tools.

  They gather and transmit data.
  - \* M2M communication telies on vobious network

    technologies such as wi-fi cellular networks.

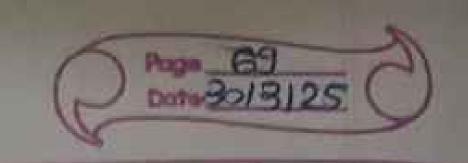
    Bluetooth, zigbee, and Lorawall to transmit

    data.
- · These devices act as intermediaties, aggragating data from multiple devices and from multiple devices and from ding it to the cloud on other system
- · Centrained System that process, store, and analyze the data confected from with M devices
- Softwase applications that provide insights and correspond to the data received the same manual cartion.

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	Q-3cA)	-	
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2.	Ease of Integration		1
9.	Noise Resistance		9
4.	Compact size		
	Common Type of Digital Gensons		
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	Proximity Sensoss		
	Light Sengobs		
46	Pressure Senanos		
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	Conterol system.		
	Contino) Bysiam.		



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Hydraunc Hancal Advators	
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RFID Tag: Contains a michachil	possive of



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7- --

Healthouse

Retail.