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தமிழ் நாடு அரசு

தொழில்நுட்பக் கல்வித் துறை. சென்னை 600 025 – வாரியத் தேர்வுகள்

அடுத்தப் பக்கத்தில் கொடுக்கப்பட்டுள்ள குறிப்புகளை படிக்கவும் (Read the instructions given in the next page)

Q. No.	A	B	C	Q. No.	A	B	C	Q. No.	A	B	C	Q. No.	A	B	C
1.				9.				17.				25.			
2.				10.				18.				26.			
3.				11.				19.				27.			
4.				12.				20.				28.			
5.				13.				21.				29.			
6.				14.				22.				30.			
7.				15.				23.				31.			
8.				16.				24.				Total Marks			

For Revaluation

For Central Valuation

Q. No.	A	B	C	Q. No.	A	B	C	Q. No.	A	B	C	Q. No.	A	B	C
1.	2			9.	0			17.				25.			
2.	2			10.	2			18.				26.			
3.	2			11.				19.				27.			
4.	0			12.		14		20.				28.			
5.	0			13.		14		21.				29.			
6.	1			14.		7+5		22.				30.			
7.	1			15.	14			23.							
8.				16.				24.							

65

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Question Paper Code No. 1684
வினாத்தாளின் குறியீட்டு எண்

No. of Pages 21
எழுதப்பட்ட ப

Date of Examination : 14.11.2024
தேர்வு நாள்

Subject Name : CLOUD COMPUTING AND INTERNET of THINGS
பாடத்தின் பெயர்

Perforations to tear fly slip

Abstraction & -uty delivery

SaaS

Hardware

PaaS

IaaS

Facilities

தேர்வாளர்களுக்கான அறிவுரைகள்
INSTRUCTIONS TO CANDIDATES

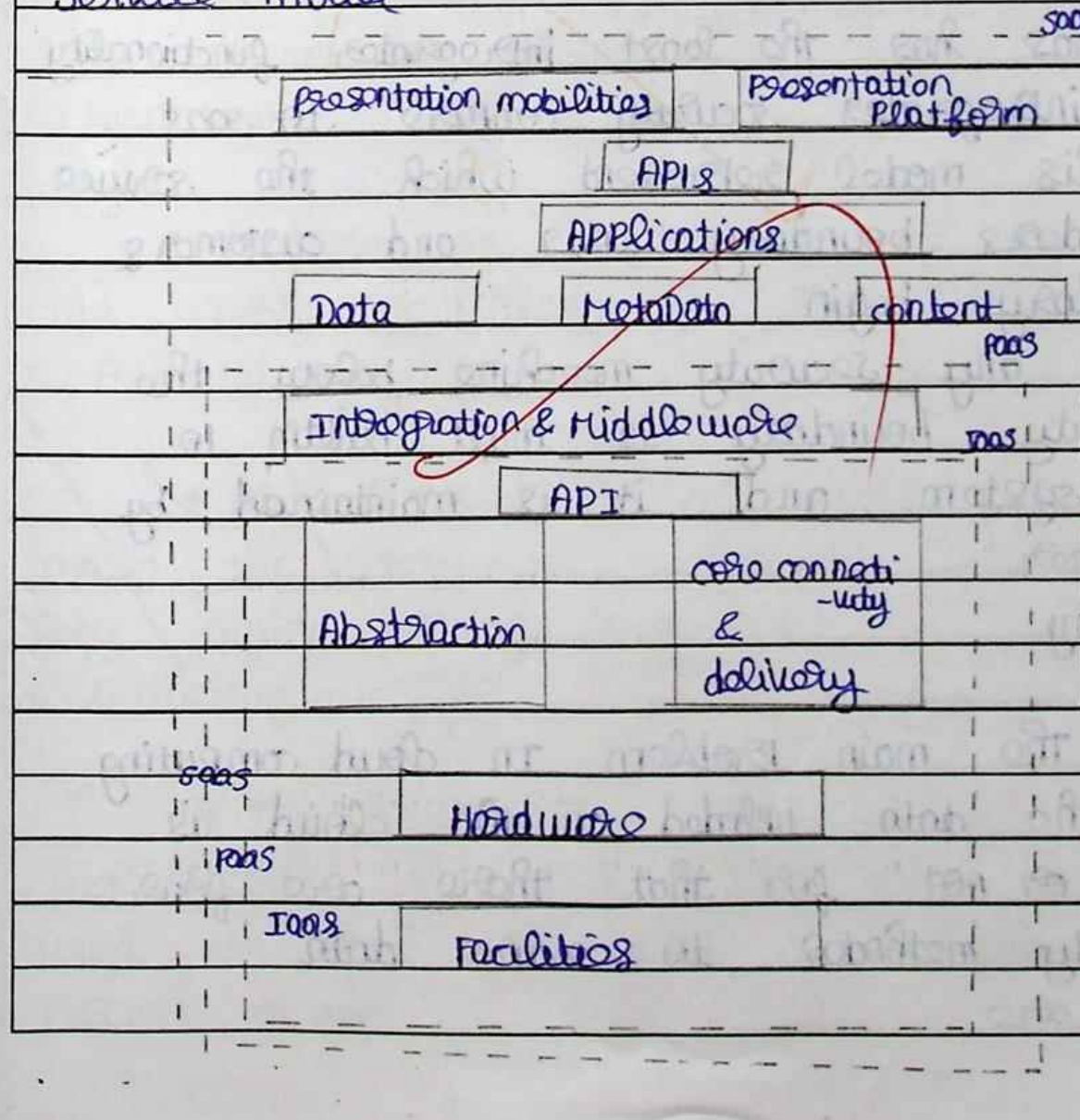
1. விடைத்தாள் மாற்றிப் பெறுவதற்கு.
   Get the answer book replaced, if
   - விடைத்தாள் சரியாக சேர்ந்து பின் செய்யப்படாமல் இருந்தால்.
   - it is not stapled properly
   - விடைத்தாள் புத்தகப் பக்கங்களின் வரிசை எண் விடுபட்டிருந்தாலோ அல்லது வரிசையாக இல்லாமலிருந்தாலோ (மொத்தம் 30 பக்கங்கள்).
   - the page numbers are missing or not in order (there shall be 30 pages continuously numbered)
   - தலைப்பு பக்கத்தில் விடைத்தாள் புத்தகத்தின் கீழ்பகுதியில் வரிசை எண் அச்சிடப்படாமலிருந்தால்.
   - the serial number of the answer book is not printed at the bottom of the title page
2. உங்களுடைய பதிவு எண்ணையும், பெயரையும் அதற்காக கொடுக்கப்பட்டுள்ள தலைப்பு பக்கத்தின் கீழ்பகுதியில் மட்டும் எழுதவும்; அதைத் தவிர்த்து பதிவு எண், பெயர் ஆகியவற்றை விடைத்தாளில் மற்றப் பக்கங்களில் எழுதக்கூடாது. எந்தவிதமான அடையாளக் குறியீட்டையும் விடைத்தாளில் எழுதக்கூடாது.
   You are prohibited from writing your REGISTER NUMBER or NAME in any part of the answer book, other than the space provided at the bottom of the title page. You are prohibited from writing or leaving any distinguishing marks so as to identify your answer book.
3. தலைப்புப் பக்கத்தில் கொடுக்கப்பட்டுள்ள அதற்குரிய கட்டங்களில் விவரங்களை எழுதவும்.
   Fill up all the particulars, in the relevant boxes, in the title page.
4. கேள்விகளுக்கு பதில் எழுதும் போது விடைத்தாளில் இரண்டு பக்கங்களையும் பயன்படுத்த வேண்டும். பக்கங்களில் தொடர்ந்து விடை எழுதாமல் வெற்றிடம் விடக் கூடாது.
   Use both sides of the paper for answering questions, without leaving spaces/ lines in between.
5. இந்த விடைத்தாள் புத்தகம் போதுமான பக்கங்களை கொண்டிருக்கிறது. இதைத் தவிர கூடுதல் விடைத்தாள் அளிக்கப்படமாட்டாது.
   This answer book contains sufficient pages and no additional sheets will be issued.
6. கேள்விக்கு விடையளிக்கும் முன்பு வினாத்தாள் எண், வருடம், மாதம், காலம் இவைகளை சரிபார்க்கவும்.
   Check the Code Number, Month and year of Examination, Duration etc., in the question paper before answering the questions.
7. கொடுக்கப்பட்டுள்ள வரைப்படத்தாள் / கிராப் ஷீட் தவிர வேறு எந்த விடைத்தாளையும் சேர்க்க கூடாது. விடைத்தாள் புத்தகத்திலிருந்து எந்த பக்கத்தையும் கிழிக்கக் கூடாது.
   No extra sheet is to be attached except the drawing/graph sheets supplied and no sheet is to be teared from the answer book.
8. கைபேசி, துண்டுக் காகிதம் மற்றும் தடை செய்யப்பட்ட இதர பொருட்கள் வைத்திருத்தல், தேர்வுக்கு எதிரான முறைகேடுகளில் ஈடுபடுதல் அனைத்தும் தேர்வு வாரிய விதிகளின்படி தண்டனைக்குரிய குற்றமாகும்.
   POSSESSION OF ANY PROHIBITED MATERIAL, CELL PHONE, BITS OF PAPERS, etc., AND INVOLVEMENT IN MALPRACTICE OF ANY NATURE SHALL BE PUNISHABLE AS PER BOARD'S RULES.

PART - B

13) b) CSA cloud reference model

* In normal reference mode set boundary between the client and service Provider

* In CSA (cloud security alliance) reference model set boundary between each service model



* IaaS is basic level of cloud computing
* PAAS and SaaS are the next above two levels
* Moving upward each service inherites the benifites and security of model beniath
* IaaS Provides Infrastructure PaaS Provides Platform environment SaaS Provides software environment
* IaaS has the least integrator functionality and integrator security compare to SaaS
* This model represent which the service Providers boundary ends and customers boundary begin
* If any security machine below the security boundary is must builtin to the system and it is maintained by customer

Security

* The main Problem In cloud computing is the data uploded on the cloud is safe or not. for that there are four security methods to secure data
They are

1) Access control
2) Audation
3) Authentication
4) Authorazion

1) Access control

* Access control is used to check wether the user is authorise person or not and the user has a permission to access the company data or not

2) Audation

* Audation is a process of monitor the users activities

3) Authentication

* Authentication is a process of make the user to authorized person by giving strong password

4) Authorazion

* The additional method of Authentication is called authorization. It is used to check the user is authorized person or not

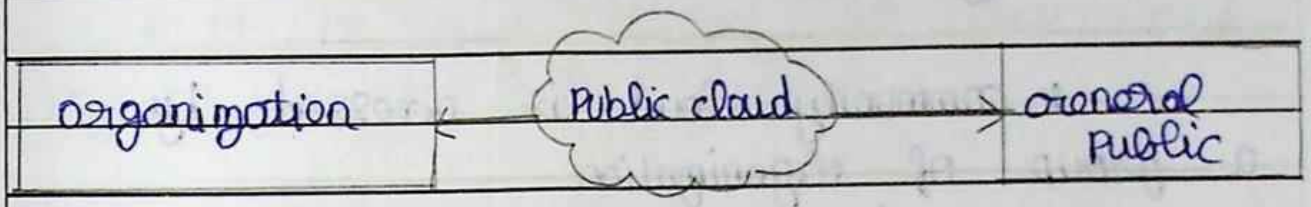
12) b) cloud deployment models

* cloud deployment model is used to identify the cloud in which formate
* There are four types of cloud deployment model they are

1) Public cloud
2) Private cloud
3) community cloud
4) Hybrid cloud

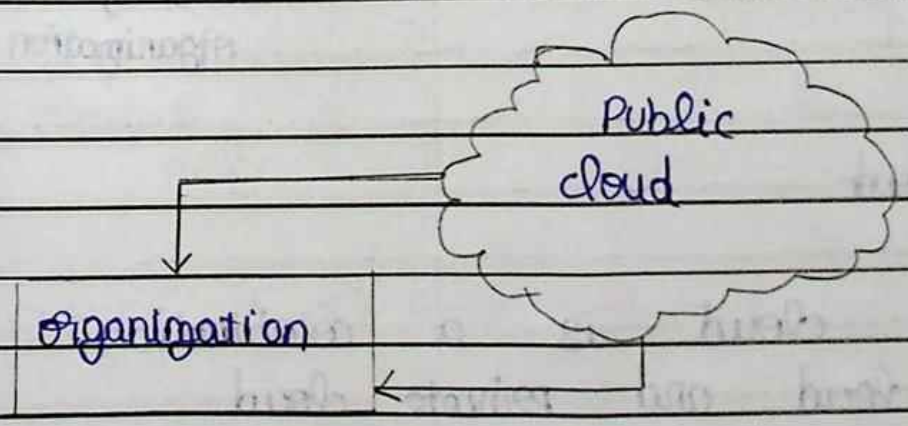
1) Public cloud

* In public cloud the services and Applications are available for General Public through cloud service Provider
* It is less security because any one can access this network
* Publick cloud is free
* It contain some of the services and application
* Access the public cloud through internet



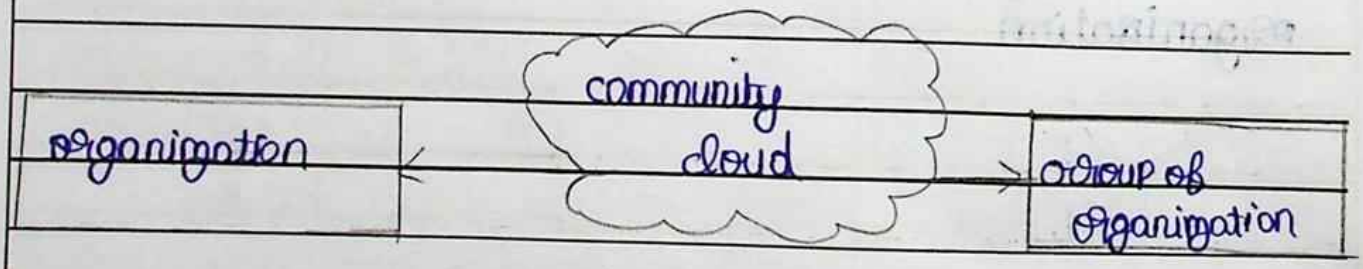
2) Private cloud

* Authorized Persons only access Private cloud
* It Has High security because authorized Persons only access the Private cloud
* No needs to share your Hardware component with any one
* It Provide service in only one organization



3.) community cloud

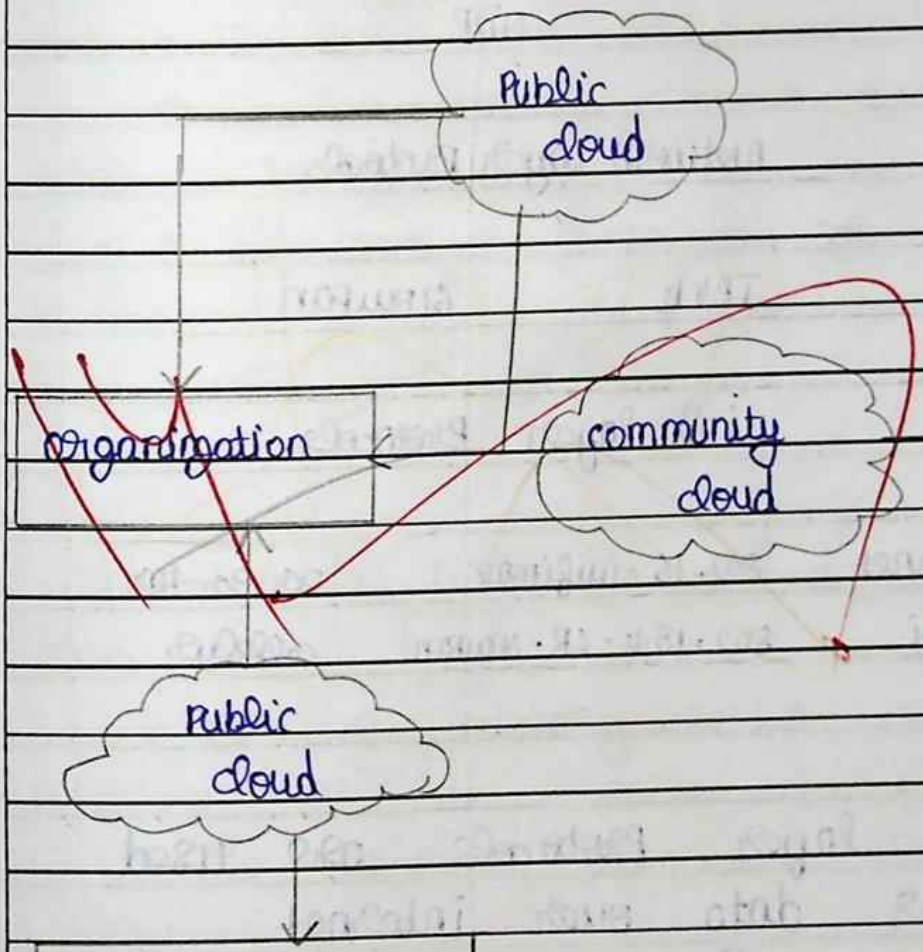
* community cloud is accessed by a group of organization
* It has High security because authorized persons only access the community cloud
* It share services over multiple organization. If the organization needs data it takes the data from other organization
* It is use for pay as use method



4.) Hybrid cloud

* Hybrid cloud is a combination of public cloud and private cloud
* It can perform both private public and communitys performance

* It has High security
* It is used limited for free and Pay-as-you-use billing method



14.) b.i.) network layer protocols

* Network layer protocols are used to transfer the data using protocols

Application layer Protocols

HTTP	COAP	web socket
MQTT	XMPP	DDS	AMQP

Transfer layer Protocols

TCP	UDP

network Layer Protocols

IPV6	IPV4	6LOWPAN

Link layer Protocols

802.3 - ethernet	802.16 - wifimax	2G-3G-4G cellular
802.11 - wifi	802.15.4 - LR - 6LOWPAN	

* network layer Protocols are used to transfer data over internet
* There are three types of network layer Protocols. They are
  1.) IPV4
  2.) IPV6
  3.) 6LOWPAN

1.) IPV4

* This is the most widly used network layer protocols
* It Has High Performance
* It Has memory 32 bit and memory address 2^{32} bit
* The transfer rate of IPV4 1Mbls to 100Mbls

2.) IPV6

* This is the advanced version of IPV4
* It has memory 128 bit and memory address 2^{128} bit
* The transfer rate of IPV6 1Mbls to 100Mbls
* IPV6 stands for Internet Protocols version 6

ii.) wireless sensor network

* wireless sensor is one of the stars in IoT enabeling technoligies

* wireless sensor network consists of collection of distributed devices attached with sensors
* these sensors are used to collect the environment and physical condition
* wireless sensor network consists of endnode, router, coordinator
* Endnode is used to collect the data from the surrounding environment
* router is used to collect the all data from end node and transfer the data to coordinator
* coordinator is used to collect the all data from router and create a connection between the wireless sensor network and internet.

Example :

* wether monitoring is a process of get the temperature, humidity using sensor attached with device and the collected datas are stored in the cloud. the user can see the data using application

15.) a.) Process specification

* Process model specification is one of the method in design methodology
* The following are the IOT design methodlogy

Purpose and requirment

Process model specification

Domain model specification

Information model specification

service specification

IOT Level specification

operational view specification

functional view specification

Device and component integration

Application development

Process specification

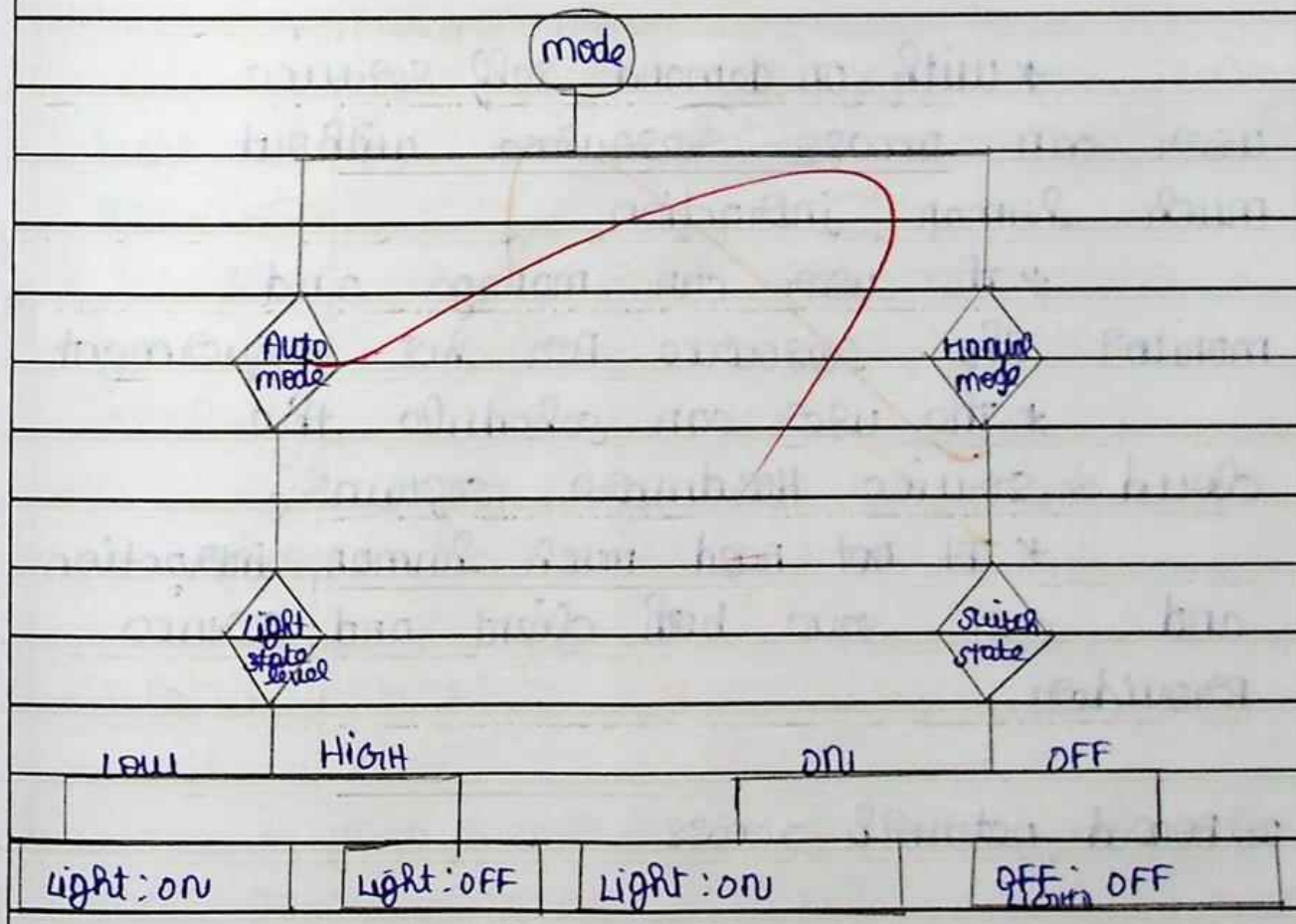
* There are two types of Process specification in home automation switch state, light level, automode and manual mode

Automode

* If the light level is low in the room light on
* If the light level is High in the room light OFF

manual mode

* manual mode based on the switch
* If the switch is in on state light on
* If the switch is in OFF state light OFF



11) a) ii) Essential characteristics

* The following are the essential characteristics of cloud computing

1) on - demand self service
2) Board network access
3) location independent Resource pooling
4) Rapid elastic
5) Measured services

i) on - demand self service

* with on demand self service user can access resource without much human interaction
* The user can manage and monitor the resource for his requirement
* The user can schedule the cloud service Hardware, software
* It not need much human interaction and cost save both client and service provider

2) Board network access

* cloud computing fully depend on the internet. The private cloud services can accessed by anywhere
* cloud computing has high band with communication link available at

low cost

* This link is used to connect the cloud computing and server
* The services are provide over devices such as mobile, laptop, ipad etc.

3) Location Independent resource Pooling

* Location independent resource pooling has large and flexible resource pooling server
* If the client request resource for his execution. It take resource quickly
* The user have no knowledge to to where the datas are stored

4) Rapid elastics

* when require cloud computing expand and give resource quickly and efficently
* when not require cloud computing reduce and give the resource quickly and efiently

5.) Measured services

* cloud computing has autoscaling method
* This method is used to bill the based method the customer pay what - he - use

PART-A

1.) cloud computing

* cloud computing is a Process of Providing services to the customer
* There are three types of services available on cloud computing
* IaaS (Infrastructure as a service) it Provide Hardwares
* PaaS (Platform as a service) it Provides runtime Platform
* SaaS (Software as a service) it Provides operating system

2) security in cloud computing

1) centralization

* This method is used to centralized your data to more security

2) Instance surveyor

* If the client feel like some one Hacking the data on cloud the client can change the data to other device immediately

3) service Provider of Paas

* Paas stands for Platform as a service
* Paas is also known as cloud Platform service
* Paas is directly runs on the operating browser so the user not wants to download the in on local computer

1) Microsoft Azure
3) google
3) Microsoft edge

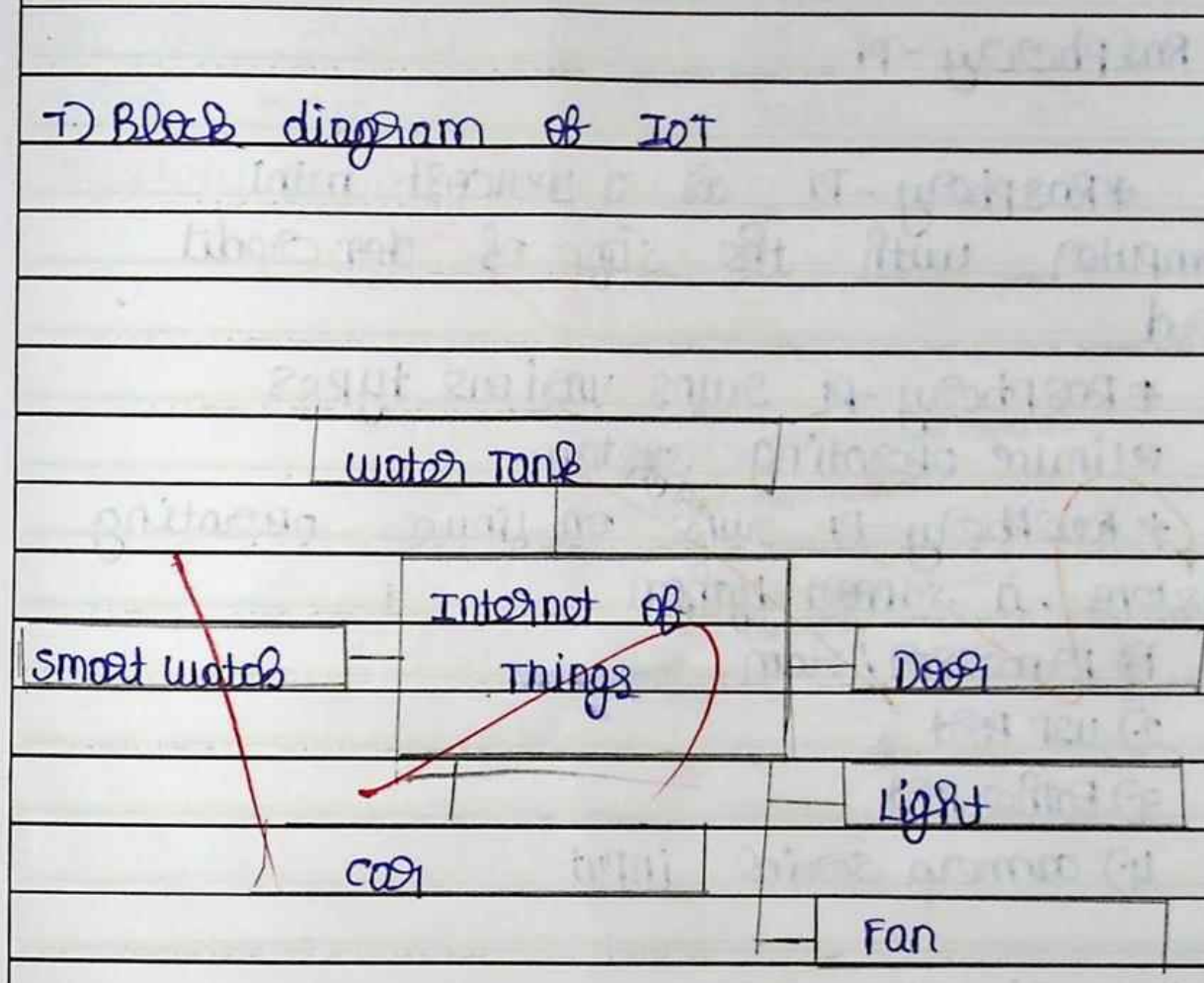
4.) Infrastructure as a service

* Infrastructure as a service is also known as Hardware as a service
* It is used to Provide infrastructure like Hardware and network like: storage, data, RAM etc
* This is used in Pay as you use method

5.) encryption

* Encryption is a Process of converting data from readable to unreadable formate.
* The user sent data over the internet so there is a Posible to hack your data so the user convert the data from readable to unreadable formate
* The service convert the unreadable formate to readable formate using decription

7) Block diagram of IOT



8) IOT Levels

*Level 0
*Level 1
*Level 2
*Level 3
*Level 4
*Level 5
*Level 6

10.) Rasphberry - Pi

* Rasphbery - Pi is a lowcost mini computer with the size of ~~der~~ credit card

* Rasphbery - Pi runs various types of linux operating system

* Rasphbery - Pi runs on linux operating system, it support Python

1.) Processor / ram
2.) USP Port
3.) Father Port
4.) camera serial input

6.) virtualization management

* virtualization is a process of view and monitering the data on the cloud

* This is the best method to secure your data

9.)

* The data you stored in the cloud can be located ~~at the~~ ~~dt~~ any where

in the clients system or Data center or other state or other country in system type architecture

Certified that the Total number of Pages the Candidate has written answers 21 Pages

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