



Sri Adichunchanagiri Shikshana Trust (R)
SJB Institute of Technology
(Affiliated to Visvesvaraya Technological University, Belagavi & Approved by AICTE,
New Delhi.)

Department of MBA



INTERNAL TEST QUESTION PAPER (2020 scheme)

INTERNAL TEST : FIRST	ACADEMIC YEAR : ODD /2020-21		
SUB:EMERGING EXPONENTIAL TECHNOLOGIES	SUB-CODE : 20MBA301	CLASS : III A&B	
DATE :08.12.2021	TIME:9.00 AM-10.40AM	DUR : 1.40 hr.	MAX MARKS:50
STAFF-INCHARGE : Dr. Roopa Temkar V./ Mrs. Roopa Karnam			

Answer any two questions from Part A section. Part B is compulsory

Question no.	Question	BT level	CO,PO mapping	Marks
PART-A				
1	a What do you mean by Emerging Technology?	L1	CO1,PO1,3	03
	b Outline the historical importance of Industrial Revolution (Technology).	L5	CO1,PO1,3	07
	c Elaborate the role of data for emerging technology.	L2	CO1,PO1,3	10
2	a What is Data Science?	L1	CO2,PO2,4	03
	b Explain the future trends in Emerging Technology.	L6	CO1,PO1,3	07
	c List the differences between Data & Information.	L5	CO2,PO2,4	10
3	a What is HMI? List out its applications.	L4	CO1,PO1,3	03
	b Classify the different types of data.	L5	CO2,PO2,4	07
	c Explain Data Value Chain.	L6	CO2,PO2,4	10
PART - B Industry 4.0 solutions give manufacturers the ability to predict when potential problems are going to arise before they actually happen. Industry 4.0 solutions give businesses greater insight, control, and data visibility across their entire supply chain. Without IoT systems in place at your factory, preventive maintenance happens based on routine or time. In other words, it's a manual task. Industry 4.0 solutions help manufacturers become more efficient with assets at each stage of the supply chain, allowing them to keep a better pulse on inventory, quality, and optimization opportunities relating to logistics.				
1	Explain the impact of Industry 4.0 in Business Application with special reference to Supply chain management, IoT, AI, Asset Tracking.	L3	CO1,PO1,3	10

COMMENT:

OK

Roopa Temkar V.
Signature of Faculty

[Signature]
Scrutinizer

[Signature]
HOD 6/12/21

Sri AdichunchanagiriShikshana Trust®
SJB INSTITUTE OF TECHNOLOGY
BGS Health & Education City, Kengeri, Bangalore
Department of Management Studies

FIRST INTERNAL ASSESMENT TEST – December 2021

SCHEME AND SOLUTION

INTERNAL TEST : FIRST

ACADEMIC YEAR : ODD /2020-21

SUB:EMERGING EXPONENTIAL TECHNOLOGIES SUB-CODE : 20MBA301 CLASS : III A&B

DATE :08.12.2021

TIME :9.00- 10.40AM
DUR : 1.40 hr. MAX MARKS:50

STAFF-INCHARGE : Dr. Roopa Temkar V./ Mrs. Roopa Karnam

Question no	Solution	Marks
1 a	<p>What do you mean by Emerging Technology?</p> <p>Emerging technology is a term generally used to describe a new technology, but it may also refer to the continuing development of an existing technology; it can have slightly different meaning when used in different areas, such as media, business, science, or education. The term commonly refers to technologies that are currently developing, or that are expected to be available within the next five to ten years, and is usually reserved for technologies that are creating, or are expected to create, significant social or economic effects.</p>	3
b	<p>Outline the historical importance of Industrial Revolution (Technology).</p> <p>Before digging too much deeper into the what, why, and how of Industry 4.0, it's beneficial to first understand how exactly manufacturing has evolved since the 1800s. There are four distinct industrial revolutions that the world either has experienced or continues to experience today.</p> <p>The First Industrial Revolution: The first industrial revolution happened between the late 1700s and early 1800s. During this period of time, manufacturing evolved from focusing on manual labor performed by people and aided by work animals to a more optimized form of labor performed by people through the use of water and steam-powered engines and other types of machine tools.</p> <p>The Second Industrial Revolution: In the early part of the 20th century, the world entered a second industrial revolution with the introduction of steel and use of electricity in factories. The introduction of electricity enabled manufacturers to increase efficiency and helped make factory machinery more mobile. It was during this phase that mass production concepts like the assembly line were introduced as a way to boost productivity.</p>	7

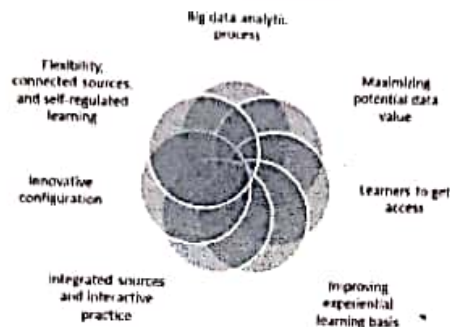
The Third Industrial Revolution

Starting in the late 1950s, a third industrial revolution slowly began to emerge, as manufacturers began incorporating more electronic—and eventually computer—technology into their factories. During this period, manufacturers began experiencing a shift that put less emphasis on analog and mechanical technology and more on digital technology and automation software.

- c Elaborate the role of data for emerging technology.

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Role of data for Emerging technologies



Data technologies are developed to help manage data generated by human or by machines, which will be 200 billion by 2020. Data technologies aim to manage growing data streams, get valuable insights from data and find solutions to integrate the most important data sources for companies and organizations in high demand.

- 2 a . What is Data Science?

3

- Data science is the practice of mining large data sets of raw data, both structured and unstructured, to identify patterns and extract actionable insight from them.

- b Explain the future trends in Emerging Technology.

7

- 5G Technology- A Boon For Businesses in 2021
- Autonomous Driving- An Easy, Safe Driverless Drive
- Edge computing- Bridging the Gap Between Data Storage and Computation
- Democratization- A Democracy in Technology
- Human Augmentation- Enhancing Cognitive Abilities
- Automation- For Advancements in Analytics

- c List the differences between Data & Information.

10

Data	Information
Data is unorganised and unrefined facts.	Information comprises processed, organised data presented in a meaningful context.
Data is an individual unit that contains raw materials which do not carry any specific meaning.	Information is a group of data that collectively carries a logical meaning.
Data doesn't depend on information.	Information depends on data.
It is measured in bits and bytes.	Information is measured in meaningful units like time, quantity, etc.
Raw data alone is insufficient for decision making.	Information is sufficient for decision making.
An example of data is a student's test score.	The average score of a class is the information derived from the given data.

3a

What is HMI? List out its applications.

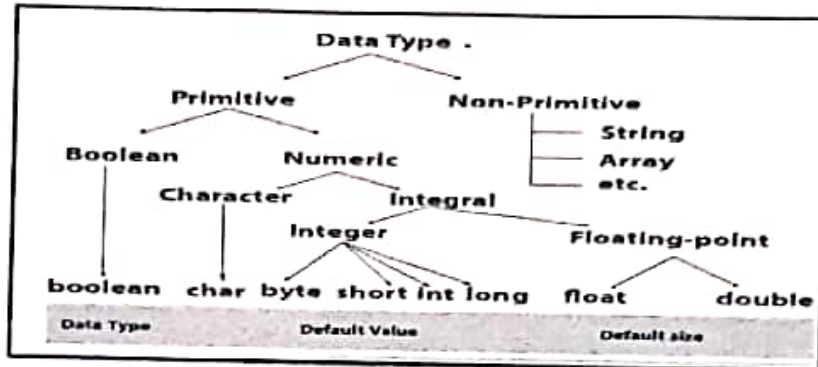
- HMI is all about how people and automated systems interact and communicate with each other. That has long ceased to be confined to just traditional machines in industry and now also relates to computers, digital systems or devices for the Internet of Things (IoT). More and more devices are connected and automatically carry out tasks. Operating all of these machines, systems and devices needs to be intuitive and must not place excessive demands on users.

3

b

Classify the different types of data.

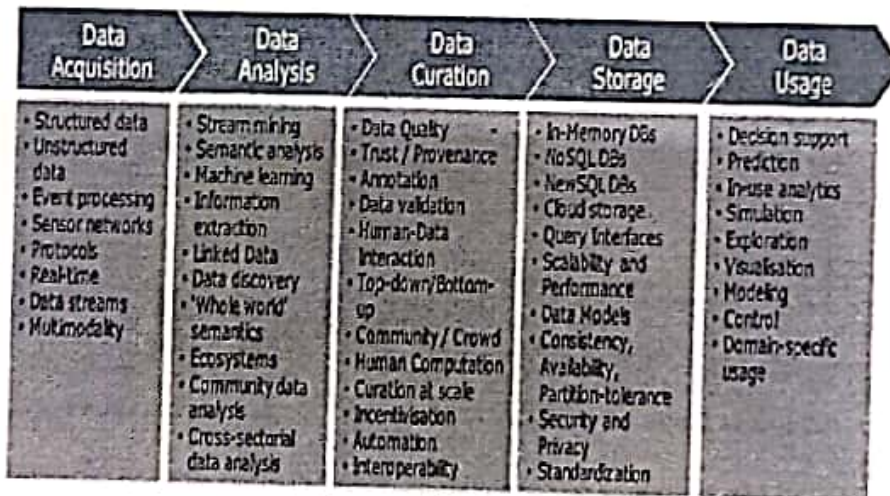
DATA TYPES continued.....



7

c

Explain Data Value Chain



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Technical Working Groups

PART - B

1

Case Study based on Students Analytical and reasoning ability

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COMMENT

Rajendra
Signature of Faculty

[Signature]
Scrutinizer

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HOD 06/12/21



Sri Adichunchanagiri Shikshana Trust (R)
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Department of MBA

INTERNAL TEST QUESTION PAPER (2020 scheme)

INTERNAL TEST : SECOND	ACADEMIC YEAR : ODD /2021-22		
SUB:EMERGING EXPONENTIAL TECHNOLOGIES	SUB-CODE : 20MBA301	CLASS : III A&B	
DATE :28.01.2022	TIME :9.00-10.30AM	DUR : 1.30 hr.	MAX MARKS:50
STAFF-INCHARGE : Dr. Roopa Temkar V./ Mrs. Roopa Karnam			

Answer any two questions from Part A section. Part B is compulsory

Question no.	Question	BT level	CO,PO mapping	Marks
PART-A				
1	a What is Artificial Intelligence? List examples of AI applications in business.	L2	CO3 PO3,5,6	03
	b Illustrate the different levels of AI.	L3	CO3 PO3,5,6	07
	c Discuss the different types of AI based on capabilities and functionalities.	L4	CO3 PO3,5,6	10
2	a List out the role of smart phones in IOT.	L2	CO3 PO3,5,6	03
	b What are the components of Smart Grid? Discuss the advantages and disadvantages of Smart Grid.	L4	CO3 PO3,5,6	07
	c Technology was merely used to automate the most routine and monotonous tasks and cut down on the use of paper through digitization of health records while also aiding in the easy flow of this information among insurance companies, hospitals, and patients. Explain the applications of AI in healthcare sector.	L5	CO3 PO3,5,6	10
3	a What is IOT and IIoT?	L2	CO3 PO3,5,6	03
	b What are the Challenges in Internet of things? Discuss.	L3	CO3 PO3,5,6	07
	c Illustrate with block diagram the IOT working process/Architecture.	L4	CO3 PO3,5,6	10

PART - B			
1	Categorize the examples of different AI enabled devices based on the types of AI as reactive, Limited Memory and Theory of Mind A. Email Spam filters B. Virtual assistants-Alexa C. ATM Machines D. Industry Robots E. Humanoids-Sophia F. Scanning Machine G. Door Sensors H. Automatic Vaccum cleaners I. Drones J. Google Maps	L5	CO3 PO3,5,6 05
2	The Internet of Things (IoT) has fast grown to be a large part of how human beings live, communicate and do business. All across the world, web-enabled devices are turning our global rights into a greater switched-on area to live in. what are the probable security challenges of IOT?	L5	CO3 PO3,5,6 05

COMMENT: NIL

B. S. Roshan Kumar v.
Signature of Faculty

Ofinivasa C
Scrutinizer

Ma. The. J.
HOD 27/11/22

SECOND INTERNAL ASSESMENT TEST – JANUARY 2022

SCHEME AND SOLUTION

INTERNAL TEST : SECOND

ACADEMIC YEAR : ODD /2021-22

SUB:EMERGING EXPONENTIAL TECHNOLOGIES SUB-CODE : 20MBA301

CLASS : III A&B

DATE :28.1.2022

TIME :9.00- DUR : 1.30 hr.

MAX MARKS:50

10.30AM

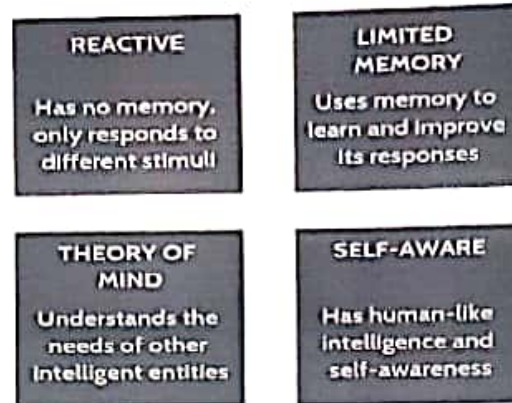
STAFF-INCHARGE : Dr. Roopa Temkar V./ Mrs. Roopa Karnam

Question no	Solution	Marks
1 a	<p>What is Artificial Intelligence? List examples of AI applications in business.</p> <p>Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, speech recognition.</p> <ul style="list-style-type: none">• Industry Robots• Mail classifications• Sensors• ATM machines• Google Maps	3
b	<p>Illustrate the different levels of AI.</p> <ul style="list-style-type: none">• AI is divided broadly into three stages: artificial narrow intelligence (ANI), artificial general intelligence (AGI) and artificial super intelligence (ASI).• Narrow AI has experienced numerous breakthroughs in the last decade, powered by achievements in machine learning and deep learning. For example, AI systems today are used in medicine to diagnose cancer and other diseases with extreme accuracy through replication of human-esque cognition and reasoning.• Artificial general intelligence (AGI), also referred to as strong AI or deep AI, is the concept of a machine with general intelligence that mimics human intelligence and/or behaviours, with the ability to learn and apply its intelligence to solve any problem. AGI can think, understand, and act in a way that is indistinguishable from that of a human in any given situation.• Artificial super intelligence (ASI), is the hypothetical AI that doesn't just mimic or understand human intelligence and behaviour; ASI is where machines become self-aware and surpass the capacity of human intelligence and ability.	7

c

Discuss the different types of AI based on capabilities and functionalities.

TYPES OF AI



10

- This means such machines cannot use previously gained experiences to inform their present actions, i.e., these machines do not have the ability to "learn."

Limited memory machines are machines that, in addition to having the capabilities of purely reactive machines, are also capable of learning from historical data to make decisions. Nearly all existing applications that we know of come under this category of AI.

- While the previous two types of AI have been and are found in abundance, the next two types of AI exist, for now, either as a concept or a work in progress. Theory of mind AI is the next level of AI systems that researchers are currently engaged in innovating.
- Self-aware AI, which, self-explanatorily, is an AI that has evolved to be so akin to the human brain that it has developed self-awareness. Creating this type of AI, which is decades, if not centuries away from materializing, is and will always be the ultimate objective of all AI research.

List out the role of smart phones in IOT.

2 a

- IoT for the average person is the smartphone because it is going to be everywhere and everyone carries a smartphone all day
- We use it for a large number of daily tasks to interact with other smart devices
- Interaction with IoT using a smartphone simply because this is the computing platform that we are most likely to have with us at any point in time
- Concerned that something is not quite right with our IoT-enabled device (e.g. when your own car got a "Check Engine" light), we will be able to run a professional vehicle scan diagnostic tool from our smartphone to read diagnostic trouble codes which is cheaper than bringing it to a professional car mechanic to diagnose the problem
- IoT means that consumers will have more options when it comes to

3

smart devices (interaction with those devices through the smartphone)

- More possibilities like connecting your smartphone with a washing machine to get a graph to see the water usage and electricity over the past few weeks/months
- In all, every IoT device such as washing machines, refrigerators or cars are able to send and receive data to specially configured servers on the Internet – they are able to connect and communicate over the Internet.

7

b

What are the components of Smart Grid? Discuss the advantages and disadvantages of Smart Grid.

Smart Grid components are a group of intelligent appliances and heavy equipment that plays an important role in the generation, transmission, and the distribution of electrical energy. These appliances are smart enough to understand the working and how to utilize them.

Advantages of Smart Grid

A smart grid performs lots of smart work. so Advantages of the smart grid are as mentioned below.

The smart grid provides better power management technologies through its integrated systems. This provides a better user interface.

It has also provided with a better protective management system in case of emergency.

It also provides a better supply and demand management.

It has reduced Carbon emission Technology.

Better Quality power.

Lower cost of operation, maintenance, and management for both utility and consumers.

It provides more efficient and improved security and protection.

It has also provided the convenience of reading meters remotely. Meter readers will not have to appear physically to check the meter readings. It will all be done through IT resources.

Applications of Smart Grid

These are the *Applications of the smart grid*.

Quick recovery after any disturbances in the transmission network.

	<p>Reduction of generation cost.</p> <p>Reduction in peak demands.</p> <p>They improve the adeptness of transmission networks.</p> <p>They possess the ability to integrate other renewable energy sources through distributed generations and microgrids.</p>	10
c	<p>Technology was merely used to automate the most routine and monotonous tasks and cut down on the use of paper through digitization of health records while also aiding in the easy flow of this information among insurance companies, hospitals, and patients. Explain the applications of AI in healthcare sector.</p> <ul style="list-style-type: none"> • AI in healthcare is often used for classification, whether to automate initial evaluation of a CT scan or EKG or to identify high-risk patients for population health. • The breadth of applications is rapidly increasing. As an example, AI is being applied to the high-cost problem of dosage issues—where findings suggested that AI could save \$16 billion. In 2016, a groundbreaking study in California found that a mathematical formula developed with the help of AI correctly determined the accurate dose of immunosuppressant drugs to give to organ patients 	3
3a	<p>What is IOT and IIoT?</p> <p>Internet of Things</p> <p>Industry Internet of Things</p>	
	<p>What are the Challenges in Internet of things? Discuss.</p>	7
b	<p>Security challenges in IoT :</p> <ol style="list-style-type: none"> 1. Lack of encryption – Although encryption is a great way to prevent hackers from accessing data, it is also one of the leading IoT security challenges. These drives like the storage and processing capabilities that would be found on a traditional computer. The result is an increase in attacks where hackers can easily manipulate the algorithms that were designed for protection. 2. Insufficient testing and updating – With the increase in the number of IoT(internet of things) devices, IoT manufacturers are more eager to produce and deliver their device as fast as they can without giving security too much of although. Most of these devices and IoT products do not get enough testing and updates and are prone to hackers and other security issues. 3. Brute forcing and the risk of default passwords – 	

Weak credentials and login details leave nearly all IoT devices vulnerable to password hacking and brute force. Any company that uses factory default credentials on their devices is placing both their business and its assets and the customer and their valuable information at risk of being susceptible to a brute force attack.

4. **IoT Malware and ransomware** –
Increases with increase in devices. Ransomware uses encryption to effectively lock out users from various devices and platforms and still use a user's valuable data and info.

Example

A hacker can hijack a computer camera and take pictures. By using malware access points, the hackers can demand ransom to unlock the device and return the data.

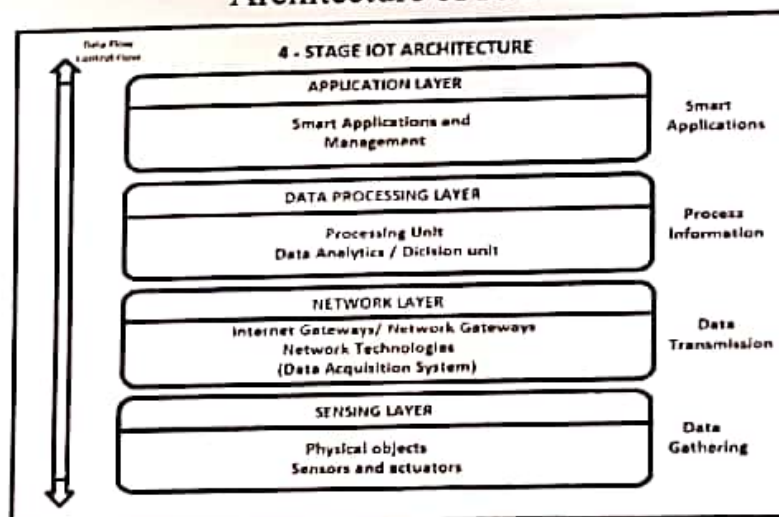
5. **IoT botnet aiming at cryptocurrency** –
IoT botnet workers can manipulate data privacy, which could be massive risks for an open Crypto market. The exact value and creation of cryptocurrencies code face danger from mal-intentioned hackers. The blockchain companies are trying to boost security. Blockchain technology itself is not particularly vulnerable, but the app development process is.

10

Illustrate with block diagram the IOT working process/Architecture.

c

Architecture of IOT



1. **Sensing Layer** –
Sensors, actuators, devices are present in this Sensing layer. These



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Department of MBA

INTERNAL TEST QUESTION PAPER (2020 scheme)

INTERNAL TEST : SECOND- <i>Reset</i>	ACADEMIC YEAR : ODD /2021-22		
SUB:EMERGING EXPONENTIAL TECHNOLOGIES	SUB-CODE : 20MBA301	CLASS : III A&B	
DATE :08.02.2022	TIME :9.00-10.30AM	DUR : 1.30 hr.	MAX MARKS:50
STAFF-INCHARGE : Dr. Roopa Temkar V./ Mrs. Roopa Karnam			

Answer any two questions from Part A section. Part B is compulsory

Question no.	Question	BT level	CO,PO mappin g	Marks
PART-A				
1	a What is Artificial Intelligence?	L2	CO3 PO3,5,6	03
	b Discuss the different types of AI	L3	CO3 PO3,5,6	07
	c Illustrate the different levels of AI along with examples.	L4	CO3 PO3,5,6	10
2	a List out the role of smart phones in IOT.	L2	CO4 PO3,5,6	03
	b Elaborate the applications of IoT at home (smart home).	L4	CO4 PO3,5,6	07
	c Illustrate with block diagram the IOT working process/Architecture.	L5	CO4 PO3,5,6	10
3	a What is IOT	L2	CO4 PO3,5,6	03
	b What are the Challenges in Internet of things? Discuss.	L3	CO3 PO3,5,6	07
	c Explain how smart farming can be adopted using AI.	L4	CO3 PO3,5,6	10
PART – B				
1	Explain in detail the application of AI in business taking into consideration different devices, tools, apps, in marketing, in E-commerce etc.	L5	CO3 PO3,5,6	10

Roopa Temkar V.
 Signature of Faculty

SR
 Scrutinizer

Mr. H. J.
 HOD
 7/2/22

SECOND INTERNAL ASSESMENT TEST – JANUARY 2022

SCHEME AND SOLUTION

INTERNAL TEST : SECOND - *Ref* ACADEMIC YEAR : ODD /2021-22
SUB:EMERGING EXPONENTIAL TECHNOLOGIES SUB-CODE : 20MBA301 CLASS : III A&B
DATE :08.02.2022 TIME :9.00- 10.30AM DUR : 1.30 hr. MAX MARKS:50
STAFF-INCHARGE : Dr. Roopa Temkar V./ Mrs. Roopa Karnam

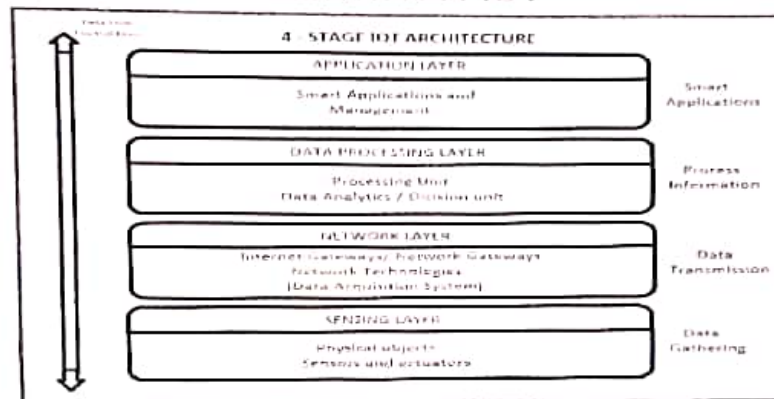
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b	<p>Discuss the different types of AI.</p> <ul style="list-style-type: none"> • This means such machines cannot use previously gained experiences to inform their present actions, i.e., these machines do not have the ability to "learn." <p>Limited memory machines are machines that, in addition to having the capabilities of purely reactive machines, are also capable of learning from historical data to make decisions. Nearly all existing applications that we know of come under this category of AI.</p> <ul style="list-style-type: none"> • While the previous two types of AI have been and are found in abundance, the next two types of AI exist, for now, either as a concept or a work in progress. Theory of mind AI is the next level of AI systems that researchers are currently engaged in innovating. • Self-aware AI, which, self explanatorily, is an AI that has evolved to be so akin to the human brain that it has developed self-awareness. Creating this type of AI, which is decades, if not centuries away from materializing, is and will always be the ultimate objective of all AI research. <p>Illustrate the different levels of AI along with examples.</p> <p>AI is divided broadly into three stages; artificial narrow intelligence (ANI), artificial general intelligence (AGI) and artificial super intelligence (ASI).</p> <ul style="list-style-type: none"> • Narrow AI has experienced numerous breakthroughs in the last decade, powered by achievements in machine learning and deep learning. For example, AI systems today are used in medicine to diagnose cancer and other diseases with extreme accuracy through 	7

c	<p>replication of human-esque cognition and reasoning.</p> <ul style="list-style-type: none"> • Artificial general intelligence (AGI), also referred to as strong AI or deep AI, is the concept of a machine with general intelligence that mimics human intelligence and/or behaviours, with the ability to learn and apply its intelligence to solve any problem. AGI can think, understand, and act in a way that is indistinguishable from that of a human in any given situation. • Artificial super intelligence (ASI), is the hypothetical AI that doesn't just mimic or understand human intelligence and behaviour; ASI is where machines become self-aware and surpass the capacity of human intelligence and ability. 	
	<p>List out the role of smart phones in IOT.</p>	10
2 a	<ul style="list-style-type: none"> • IoT for the average person is the smartphone because it is going to be everywhere and everyone carries a smartphone all day • We use it for a large number of daily tasks to interact with other smart devices • Interaction with IoT using a smartphone simply because this is the computing platform that we are most likely to have with us at any point in time • Concerned that something is not quite right with our IoT-enabled device (e.g. when your own car got a "Check Engine" light), we will be able to run a professional vehicle scan diagnostic tool from our smartphone to read diagnostic trouble codes which is cheaper than bringing it to a professional car mechanic to diagnose the problem • IoT means that consumers will have more options when it comes to smart devices (interaction with those devices through the smartphone) • More possibilities like connecting your smartphone with a washing machine to get a graph to see the water usage and electricity over the past few weeks/months • In all, every IoT device such as washing machines, refrigerators or cars are able to send and receive data to specially configured servers on the Internet – they are able to connect and communicate over the Internet. <p>Elaborate the applications of IoT at home (smart home).</p>	3



Illustrate with block diagram the IOT working process/Architecture.

Architecture of IOT



What is IOT
Internet of Things

What are the Challenges in Internet of things? Discuss.

Security challenges in IoT :

- Lack of encryption** – Although encryption is a great way to prevent hackers from accessing data, it is also one of the leading IoT security challenges. These drives like the storage and processing capabilities that would be found on a traditional computer. The result is an increase in attacks where hackers can easily manipulate the algorithms that were designed for protection.
- Insufficient testing and updating** – With the increase in the number of IoT(internet of things) devices, IoT manufacturers are more eager to produce and deliver their device as fast as they can without giving security too much of although. Most of these devices and IoT products do not get enough testing and updates and are prone to hackers and other security issues.
- Brute forcing and the risk of default passwords** – Weak credentials and login details leave nearly all IoT devices vulnerable to password hacking and brute force. Any company that uses factory default credentials on their devices is placing both their business

c	<p>and its assets and the customer and their valuable information at risk of being susceptible to a brute force attack.</p> <p>4. IoT Malware and ransomware – Increases with increase in devices. Ransomware uses encryption to effectively lock out users from various devices and platforms and still use a user's valuable data and info.</p> <p>Example A hacker can hijack a computer camera and take pictures. By using malware access points, the hackers can demand ransom to unlock the device and return the data.</p> <p>5. IoT botnet aiming at cryptocurrency – IoT botnet workers can manipulate data privacy, which could be massive risks for an open Crypto market. The exact value and creation of cryptocurrencies code face danger from mal-intentioned hackers. The blockchain companies are trying to boost security. Blockchain technology itself is not particularly vulnerable, but the app development process is.</p> <p>Explain how smart farming can be adopted using AI.</p> <ul style="list-style-type: none"> • Precision Farming and Predictive Analytics: AI applications in agriculture have developed applications and tools which help farmers inaccurate and controlled farming by providing them proper guidance to farmers about water management, crop rotation, timely harvesting, type of crop to be grown, optimum planting, pest attacks, nutrition management. • Agricultural Robotics: AI companies are developing robots that can easily perform multiple tasks in farming fields. This type of robot is trained to control weeds and harvest crops at a faster pace with higher volumes compared to humans. • AI-enabled system to detect pests: Pests are one of the worst enemies of the farmers which damages crops. • AI systems use satellite images and compare them with historical data using AI algorithms and detect that if any insect has landed and which type of insect has landed like the locust, grasshopper, etc. And send alerts to farmers to their smartphones so that farmers can take required precautions and use required pest control thus AI helps farmers to fight against pests. 	10
PART – B		
1	Case Study based on Students Analytical and reasoning ability	10

Raj. A. Tanwar
Signature of Faculty

S. S.
Scrutinizer

Ma. the. J.
HOD 7/2/22



Sri Adichunchanagiri Shikshana Trust (R)
SJB Institute of Technology
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 New Delhi.)



Department of MBA

INTERNAL TEST QUESTION PAPER (2020 scheme)

INTERNAL TEST : THIRD	ACADEMIC YEAR : ODD /2021-22		
SUB: EMERGING EXPONENTIAL TECHNOLOGIES	SUB-CODE : 20MBA301	CLASS : III A&B	
DATE :16.02.2022	TIME:9.00-10.30AM	DUR : 1.30 hr.	MAX MARKS:50
STAFF-INCHARGE : Dr. Roopa Temkar V./ Mrs. Roopa Karnam			

Answer any two questions from Part A section. Part B is compulsory

Question no.	Question	BT level	CO,PO mapping	Marks
PART-A				
1	a What is Cloud Computing?	L2	CO3,PO3, 5,6	03
	b Explain the Architecture of AR System.	L3	CO3,PO3, 5,6	07
	c Describe the various ethical challenges in the usage of emerging technologies.	L4	CO4,PO4, 6	10
2	a What is Digital Privacy?	L2	CO4,PO4, 6	03
	b What is Additive Manufacturing? Explain its significance with examples.	L3	CO4,PO4, 6	07
	c Describe the applications of AR and VR	L4	CO3,PO3, 5,6	10
3	a What is Computer Vision?	L2	CO4,PO4, 6	03
	b Define Block Chain Technology and why it is important?	L3	CO4,PO4, 6	07
	c Write short notes on 1. Virtual Reality and its types 2. Quantum Computing 3. Cyber Security 4. Autonomic Computing	L3	CO4,PO4, 6	10

PART - B



Vivek Rajkumar built and offered a full-stack agriculture production management platform called 'AIBONO' - Using AI to Aid Precision Farming' to synchronize demand and supply in the fresh food segment. Using just in time technologies and farm analytics, AIBONO helped farmers grow crops as per market demand, assisted retailers in sourcing fresh fruits and vegetables directly from the farms throughout the year, and provided end consumers with the best of perishable produce. There are myriad issues faced by Indian farmers such as low farm yield, inadequate storage facilities, inadequate transport logistics, and lack of an organized structure. AIBONO's business model, beginning with the pilot stage when Vivek, armed with an engineering degree from IIT Madras, got into farming to solve the problems of farmers using digital technologies. Vivek began by farming paddy and banana on his ancestral land. Though he did not make a profit, he gathered a lot of farm data, including the amount of fertilizer and water used, the types of seeds used, etc., and built a digital platform that could provide real-time precision agriculture services to farmers by processing all the parameters on a farm. AIBONO's initial Farm Management as a Service business model was implemented in the Nilgiris wherein farmers outsourced measurement, production management, and the decision-making processes to AIBONO. The company scaled up operations to launch the 'Smart Farming Collectives' initiative wherein partner farmers shared AIBONO's resources and farmed collaboratively for mutual benefit and eventually emerged as a Seed-to-Plate company. AIBONO transformed its revenue model over the course of its business evolution. The company's future plan is to go for capacity expansion, supplying produce to large organized retail chains, home delivery of perishable produce through last-mile delivery partners, and partnering with more young farmers who are well-versed in using the internet and electronic devices.

1	How digital technologies can help synchronize demand with supply in agriculture?	L5	CO3, PO3, 5, 6	05
2	What are the challenges that fresh food aggregators might face in India.	L4	CO4, PO4, 6	05

COMMENT:

OK

Rupa Kumar
Signature of Faculty

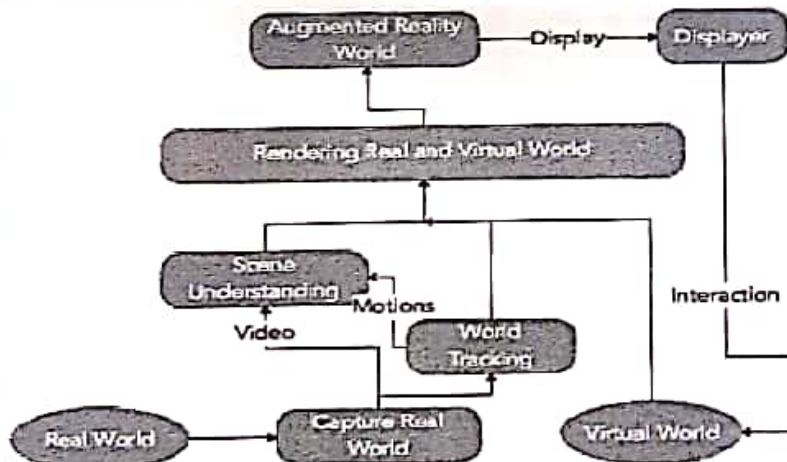
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Scrutinizer

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HOD 15/2/22

Department of MBA


Sub: EMERGING EXPONENTIAL TECHNOLOGIES Subcode: 20MBA301
Sem/Sec: III A,B Date : 16.02.2022 Time: 9.00 – 10.30 AM Max Marks: 50
Duration: 1hr 30min Staff: Roopa Karnam, Dr. Roopa Temkar

THIRD INTERNAL ASSESMENT TEST – FEBRUARY 2022
SCHEME AND SOLUTION

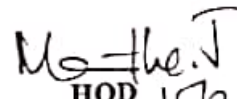
Question no	Solution	Marks
1 a	Cloud computing is the delivery of different services through the Internet, including data storage, servers, databases, networking, and software. Cloud-based storage makes it possible to save files to a remote database and retrieve them on demand.	3
b	<p>Architecture of Augmented Reality</p>  <pre> graph TD RealWorld([Real World]) --> CaptureRealWorld[Capture Real World] VirtualWorld([Virtual World]) --> WorldTracking[World Tracking] CaptureRealWorld --> SceneUnderstanding[Scene Understanding] WorldTracking --> SceneUnderstanding SceneUnderstanding --> Rendering[Rendering Real and Virtual World] Rendering --> ARWorld([Augmented Reality World]) ARWorld --> Display[Display] Display --> Displayer[Displayer] Displayer -- Interaction --> VirtualWorld </pre>	7
c	<p>Various ethical challenges in the usage of emerging technologies:</p> <p>Most Important Ethical Issues in Technology</p> <p>Misuse of Personal Information.</p> <p>Misinformation and Deep Fakes.</p> <p>Lack of Oversight and Acceptance of Responsibility.</p> <p>Use of AI.</p> <p>Autonomous Technology.</p> <p>Respect for Employees and Customers.</p> <p>Moral Use of Data and Resources.</p> <p>Responsible Adoption of Disruptive Tech.</p>	10

2a	Digital privacy refers to the protection of an individual's information that is used or created while using the Internet on a computer or personal device.	3
2b	<p>Additive manufacturing (AM) or additive layer manufacturing (ALM) is the industrial production name for <u>3D printing</u>, a computer controlled process that creates three dimensional objects by depositing materials, usually in layers.</p> <p>Significance:</p> <ol style="list-style-type: none"> 1. Cost of Entry is Becoming More Affordable 2. It Is Easy to Change or Revise Versions of a Product 3. Training Programs Are Becoming Readily Available at All Levels 4. It Reduces Waste Production 5. It Saves on Energy Costs 	7
2c	<p>Applications of AR and VR:</p> <ol style="list-style-type: none"> 1. Classroom Gaming 2. Virtual Exploration 3. Practical Tasks 4. Overcoming Language Barriers 5. Special Learning 	10
3a	Computer vision is a field of artificial intelligence (AI) that enables computers and systems to derive meaningful information from digital images.	3
3b	<p>A blockchain is a distributed database that is shared among the nodes of a computer network. As a database, a blockchain stores information electronically in digital format. Blockchains are best known for their crucial role in cryptocurrency systems, such as <u>Bitcoin</u>, for maintaining a secure and decentralized record of transactions.</p> <ul style="list-style-type: none"> • It is an immutable public digital ledger, which means when a transaction is recorded, it cannot be modified • Due to the encryption feature, Blockchain is always secure • The transactions are done instantly and transparently, as the ledger is updated automatically • As it is a decentralized system, no intermediary fee is required • The authenticity of a transaction is verified and confirmed by participants <ul style="list-style-type: none"> • Blockchain Security • Increasing Government Accountability • Reducing Government Corruption • Public Procurement / Government Contracting • Land Title Registries • Electronic Voting • Beneficial Corporate Ownership Registries • Grant Disbursements 	7

3c	<p>Virtual reality is a fully digital experience that can either simulate or differ completely from the real world. The term virtual reality refers to a computer-generated, three-dimensional environment. In order to experience and interact with virtual reality, you'll need the proper equipment, like a pair of VR glasses or a headset.</p> <p>Types:</p> <p>Non-immersive, semi-immersive, and fully-immersive simulations.</p> <p>Quantum computing is a type of computation that harnesses the collective properties of quantum states, such as superposition, interference, and entanglement, to perform calculations. The devices that perform quantum computations are known as quantum computers.</p> <p>Cyber security is the application of technologies, processes and controls to protect systems, networks, programs, devices and data from cyber attacks. It aims to reduce the risk of cyber attacks and protect against the unauthorised exploitation of systems, networks and technologies.</p> <p>Autonomic computing is a computer's ability to manage itself automatically through adaptive technologies that further computing capabilities and cut down on the time required by computer professionals to resolve system difficulties and other maintenance such as software updates.</p>	10
PART - B		
1 & 2	Students should explain the applications of emerging technologies in agriculture and relate them with the case.	10

 Rajendra Kumar V.
Signature of Faculty


Scrutinizer


HOD 15/2/22



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 New Delhi.)



Department of MBA

INTERNAL TEST QUESTION PAPER (2020 scheme)

INTERNAL TEST : Improvement Test	ACADEMIC YEAR : ODD /2021-22		
SUB:EMERGING EXPONENTIAL TECHNOLOGIES	SUB-CODE : 20MBA301	CLASS : III A&B	
DATE :21.02.2022	TIME :9.00-10.30AM	DUR : 1.30 hr.	MAX MARKS:50
STAFF-INCHARGE : Dr. Roopa Temkar V./ Mrs. Roopa Karnam			

Answer any two questions from Part A section. Part B is compulsory

Question no.	Question	BT level	CO,PO mappin g	Marks
PART-A				
1	a What is Computer Vision?	L2	CO3,PO3, 5,6	03
	b Define Block Chain Technology and why it is important?	L3	CO3,PO3, 5,6	07
	c Describe the various ethical challenges in the usage of emerging technologies.	L4	CO4,PO4, 6	10
2	a What is Digital Privacy?	L2	CO4,PO4, 6	03
	b What is additive manufacturing? Explain its significance with examples.	L3	CO4,PO4, 6	07
	c Describe the applications of AR and VR	L4	CO3,PO3, 5,6	10
3	a What is Cloud Computing?	L2	CO4,PO4, 6	03
	b Explain the architecture of AR System.	L3	CO4,PO4, 6	07
	c Write short notes on 1. Quantum Computing 2. Autonomic Computing 3. Cloud computing	L3	CO4,PO4, 6	10
PART - B				
1	Explain elaborately on cyber security, its types and threats.	L5	CO3,PO3, 5,6	10

COMMENT: OK

Roopa Temkar V.
 Signature of Faculty

Shivara C
 Scrutinizer

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 HOD
 21/2/22

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Sri Adichunchanagiri Shikshana Trust®

SJB Institute of Technology

(Affiliated to Visvesvaraya Technological University, Belagavi & Approved by AICTE, New Delhi)
No. 67, BGS Health & Education City, Dr. Vishnuvardhan Road,
Kengeri, Bengaluru-560060

Web: www.sjbti.edu.in, Email: principal@sjbti.edu.in, Phone: 080-28612445/46, Fax: 080-28612651

Department of Management Studies (MBA)

Assignment Plan: AY-~~2020~~ 2021-22

Subject: Emerging Exponential Technologies

Subject code: 20MBA301

Faculty Name: Dr. Roopa Temkar V

Class: 3rd Sem B

Topic – Application of Technology in different sectors

Objectives:

01. To understand the emerging technologies applicable in field of Management
02. To understand the concept of AI, IOT and AR.

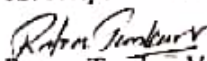
Sl. No	Weekly Planner
1	Identify different emerging technologies
2	Select appropriate technology and tools for a given task
3	Identify necessary inputs for application of emerging technologies
4	Understand the latest developments in the area of technology to support business

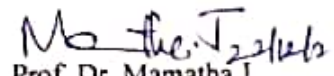
Evaluation Criteria

Sl.No	Parameter	Marks
01	Analysis of different emerging technologies	1
02	Selection of appropriate technology and tools for a given task	1
03	Analysis of necessary inputs for application of emerging technologies	1
04	On time Report submission	1
05	Overall Report	1
TOTAL		5

Outcomes:

01. Analysis of emerging technologies
02. Helps the students to make decisions.


Dr. Roopa Temkar V & Mrs. Roopa Karnam
Faculty in charge


Prof. Dr. Mamatha J
HOD



SJBIT

|| Jai Sri Gurudev ||

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Approved by AICTE and Accredited by NAAC with 'A' Grade, CGPA-3.22 - New Delhi)

#67, BGS Health & Education City, Dr. Vishnuvardhan Road, Kengeri, Bengaluru - 560066.

Website : www.sjbit.edu.in

INTERNAL ASSESSMENT BOOKStudent Name : Sahana VSemester & Section : 3rd Sem 'B' Sec USN : 1JB20BA076Subject : Emerging Exponential Technologies Subject Code : 20MBA301 Branch : MBAName of Faculty in charge : Dr. Roopa Temkar V

Internal Assessment Test - I					Internal Assessment Test - II					Internal Assessment Test - III				
Date : <u>8/12/21</u>					Date : <u>2/02/2022</u>					Date : <u>16/02/2022</u>				
Max. Marks : <u>50</u>					Max. Marks : <u>50</u>					Max. Marks : <u>50</u>				
Q No.	PART - A				Q No.	PART - A				Q No.	PART - A			
	A	B	C	Total		A	B	C	Total		A	B	C	Total
1	3	6 1/2	8 1/2	18	1	1 1/2	2	7	10 1/2	1	2	4	8 1/2	14 1/2
2	-	6 1/2	4 1/2	11	2	0 1/2	5	8	13 1/2	2	2	4 1/2	8 1/2	15
PART - B					PART - B					PART - B				
3	9 1/2	-	-	09 1/2	3					3				
4					4	8			08	4	4 1/2	4 1/2	-	09 1/2
I Test IA Marks Total				39	II Test IA Marks Total				30	III Test IA Marks Total				38
Quiz 1/Assignment etc.,					Quiz 2/Assignment etc.,					Quiz 3/Assignment etc.,				
Student Signature : <u>Sahana V</u>					Student Signature : <u>Sahana V</u>					Student Signature : <u>Sahana V</u>				
Signature of Invigilator <u>[Signature]</u>					Signature of Invigilator <u>[Signature]</u>					Signature of Invigilator <u>[Signature]</u>				
Signature of Faculty in charge <u>[Signature]</u>					Signature of Faculty in charge <u>[Signature]</u>					Signature of Faculty in charge <u>[Signature]</u>				
Avg. IA Marks for <u>25</u> (A) : <u>18</u>					Assignment Marks for <u>5</u> (B) : <u>5</u>					Presentation Marks for <u>5</u> (C) : <u>5</u>				
Subject Viva Voce (D) : <u>5</u>					Final IA Marks for <u>40</u>					(A+B+C+D) : <u>33</u>				

HOD

Principal

Part - B

Introduction -

1. Industry 4.0 takes the emphasis of digital technology ~~with~~^{to} a access of new level with a interconnectivity of Internet of things, real time data access along with the Introduction of Cyber-physical System.

Industry 4.0 helps the business owner to access there ~~what~~ all the daily operations are taking places in Business which helps in future growth.

There are 100's of concepts which deals with Internet of Things (IOT) and Industry 4.0, But here are the few foundations :-

1. Enterprise ~~resource~~ planning (ERP)
2. Internet of ~~things~~ (IOT)
3. Industrial Internet of things (IIOT)
4. Artificial Intelligence (AI)
5. Machine ~~to~~ machine (M2M)
6. Smart Factory
7. ECo System
8. Machine ~~learning~~
9. Cloud Computing
10. Cyber-Physical System.

1. ERP - ERP helps the organization in allocating of resources and utilizing it in a proper way.
2. IOT - ~~Int~~IOT stands for Internet of things which is the advanced technology in Industry 4.0.
3. IIOT - IIOT stands for Industry Internet of things which is used in Industry in the manufacturing process.
4. Artificial Intelligence - AI is the new technology where the interaction b/w the human & machine happens.
5. M2M - M2M is where the interaction between the ~~2~~ two machines happens through wireless or wired mode.
6. Smart Factory - Smart factory is how the machine deals the process without the involvement of human.
7. Eco System - Eco System is where it involves all the living creatures.
8. Cloud Computing - Cloud Computing is ~~not~~ the process all over data will be secured in safer side.
9. Machine learning - Machine learning is the process where the machine itself is operated like a human with a inherent software.
10. Cyber-Physical System - This the process where, ~~that~~ if the data has leaked outside the organization then the cyber physical system will be in charge.

Apart From all these the Industry 4.0 is also used manufacturing Process also known as Smart Factory manufacturing Cases.

1. Search Engine and optimization
2. Predictive analysis
3. Asset tracking and optimization

→ Search Engine and optimization - This the advanced technology in the digital world. Search Engine is much needed because helps to know the value or the position in the business world.

→ Predictive analysis - Business is all about analysing and forecasting the future. Without doing that we cannot run the business and be successful. we should Predict our ~~out~~ future outcome in both Positive and negative way so that we can deal ~~the~~ with results.

→ Asset tracking and optimization - Asset is the important thing which needed to run business. we always make sure that Right amount of assets are used in manufacturing Product's. so tracking of assets is ~~are~~ implemented.

Along with this, the Industry 4.0 is implemented in the present generation in the field's such as:-

1. Artificial Intelligence
2. Augmented reality
3. Simulation
4. Horizontal / Vertical Integration
5. Cloud Computing
6. Cyber Security
7. Industrial Internet.

Conclusion:- All the above statement proves that Industry 4.0 has evolved very fast and it is implemented all the sectors in the present generation.

Part A

1. a) Emerging Technology is the evolving of technology by inventing the tools and techniques which ~~is~~ was a basic need for human in the historical period.

b) Historical Importance of Industrial Revolution (Technology).

§ Introduction - starting from the stone age to the Information period, technology has changed in each and every aspects. lets see one by one.

Stone Age (10,00,000 - 3000 B.C).

During this period, the evolution of fire, tools and techniques took place. Man started to ~~he~~ hunt his food and make his own place or shelter.

Clothes, Food, Shelter, Oil lamps, Communication, hunting started during period.

~~Iron~~^{Bronze} Age (5,00,000 - 10,001 B.C).

During the Iron age man started to cultivate that is the agriculture Period Started from this era. Man started to grow



their own food along with hunting animals. Man started to speak by their own language. Culture was also introduced in the same era. This era gave a link to next development of human needs.

Iron Age

During this Period, the man started updated himself in many ways such as Pen printing, Electricity, Bridge, ice Creams, Trade... etc, these kind of evolution took place during iron age. This is also known as middle age. Railways was invented during Iron age.

Renaissance Era.

Renaissance Era is the generation where the first Helicopter, Telescope, Periscope was invented for the first time. During this time we can see many advanced technology started to evolve. This is one of the most important Era in the advancement of technology. Newspaper, Education was also invented during this Era.

Information Era -

Information Era is the present generation from ~~18~~ 18's or 19's to the current world. During the renaissance period man invented new things to this world, later in the Information period man continued the same thing and developed. Motor vehicles, car, huge machines to produce, Internet... etc all these things got evolved.

62- Conclusion - From using stones as a tool to ~~man~~ manufacturing Robots for human daily needs, the technology got updated in a rocket speed. In the present situation man has everything he wants and he can fulfill his desire within a minutes. That's how technology has played a major role in human's life.

c. Role of data for Emerging technology.

Introduction -

In today's Emerging technology Role of data is has played a major role. From a small kid to a old man has totally depended on technology. Let's see one by one how what all are the Role of data for emerging technology.

1. Big data Analysis
2. Maximizing the real time data
3. learners process data
4. Improving learners access to data
5. Integrated Configuration
6. Improving Process.
7. Implementing Practices
8. Self-regulated Process.

→ Big data Analytics -

Big data analytics can be a structured or unstructured data. Data huge data will not be organized properly but some might be.

→ Maximizing the real time data - Res

Maximize the utilization of time in the Production. So that that saved time can be used for the other process. This can done by implementing the advanced technology's.

→ learners process data

All the new employees will not be familiar with the advanced technology, ~~the~~ so, they should be left to learn the new things in the field. Those software should be added in a company.

→ Improving learners access to data

Day by day new kind of technology start to are evolving in the business field. Those things should be updated to the new learners because they are the main manpower for future growth.

→ Improving Process

~~All~~ Always we have keep updating ourself and improve our process. This should be implemented in all the business organization or the manufacturing unit.

→ Implementing Practices

Implementing the new Practice is really or much needed because all the new technology will be in a advanced version compared to ~~the~~ previous one. So ~~imply~~ This will ~~help~~ the organisation to run business smoothly and quickly.

→ Self-Regulated process

Man has totally depended on Machine for everything, But this will not be a permanent thing. So man should ~~make~~ ensure that without the help of machine or technology he can do some of the basic things by his own.

Q.2
Conclusion: - From stone age to Information Era, technology got evolved ~~in~~ very rapidly. We cannot totally depend on technology itself. The above statements supports how the technology has taken place. ~~in~~ the same way how

2. C.

Data

1. unprocessed facts and figures.
2. It is derived from latin word "datum".
3. Data is not depended on information.
4. Data will be unorganised manner.
5. Data is a unprocessed

Information

1. Processed information
2. Derived from latin word 'Informa'.
3. Information is depended on data.
4. Information will be in a organised manner.
5. ~~Data~~ Information is a Processed.

Q. b.

Future trends in Emerging Technology.

1. 5G-Internet
2. Artificial Intelligence
3. Augmented Reality
4. Block chain
5. Data twin
6. Edge-Case Process

→ 5G Internet -

Starting from 1G, 2G, 3G, 4G we are in 5G which is a boon for a human as human is totally depended on technology and technology requires Internet with high speed.

→ Artificial Intelligence -

A.I is the technology where interaction between the human and some source of machine takes place. For example - Siri, Alexa.

→ Augmented Reality -

Augmented Reality is the process how the man have built the new machine which can do all the works what ~~other~~ a human

being can do. For Example:- Sophia (Robot).

→ Block chain -

Block chain is the process where each and everything is inter connected in all the aspects, because human being is totally depended on technology. For Example, the bank is connected with the online Payment Application. That's how everything is connected or interlinked like a chain.

→ Data twin

All the new data or technology will always have one replica or the similar products. Starting from human needs to advanced technology there's a twin for that. For example, google pay is ~~the~~ similar like phonepay.

→ Edge - Ease Process

Human have developed the technology in such a way that everything can be done in fraction of min. Everything is in human finger tip. That's how today's world is easy to live.

$$\frac{38\frac{1}{2}}{50}$$

$$\frac{38\frac{1}{2}}{50} \quad R$$

Second Internals

Part-A

1. a) Artificial Intelligence is the ~~process~~ technology where human intervention is not required much and everything job will be done by machine.

b) Different types of AI Type?

1. Artificial Narrow Intelligence (ANI)

2. Artificial General Intelligence (AGI)

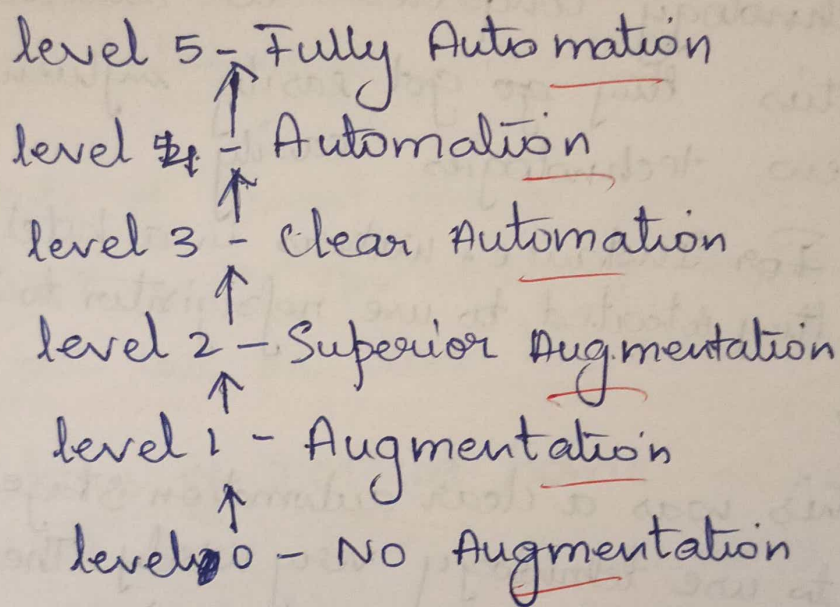
3. Artificial Super Intelligence (ASI)

→ ANI - Narrow Intelligence are mainly used in Industry where only less amount of ~~human~~ machine Intervention is needed. Rest of the work will be done by using man power.

→ AGI - Artificial general Intelligence are used partially in Industry. Only in some case machines are required and they prefer to do most of the work by using man Power.

→ ASI - Artificial Super Intelligence is the advanced technology used by big Production Industries to produce large amount of goods. Through this process Advanced technology is much needed to produce huge amount of goods.

c) Different levels of AI



level 0 - During the level 0 there was no machine or technology were used to produce goods and services. Everything was clearly done by using man Power.

For Example, Cotton textile Industry. laborers used a charaka to produce clothes without using any Advanced technology.

level 1 - After ~~to~~ level zero, slowly globalization started to arise and Manufacturing Industry started to adopt the arising technology.

level 2 - As day passes, people got more advanced using technology compared to ancient times. Through this they ~~go~~ got easily influenced to adopt new technologies easily.

For Instance, workers in a hotel or service Industry, they started to use refrigerator to store foods and goods.

level 3 - This was a clear automation stage, people adopted ~~to~~ use technology very wisely. The usage of Advanced technology was Partial. This is because most of people were not ready of adopt the advancement and few were scared.

level 4 - Automation stage raised rapidly in manufacturing industry. Day by day they started to implement the advancement in their life which made more easy for them ~~to~~ and man Power was not needed much.

level 5 - This stage was a boon to manufacturing Industry, because ~~this~~ this stage involved Zero human Interference i.e no man or labors are required to Produce goods ~~or~~ service. Everything is totally automated by technology

For Instance, Japan are using Robots in hotel to serve customers. This Shows no human intervention is needed.

2. a) Role of Smart phones play a Prominent Role in IOT. with the access of Internet everything or work can be done by one click.

b) Applications of IOT at home

1. Smart door
2. Automated gate or sensor gate
3. Safety Security lockers
4. Security Cameras
5. Model Kitchen
6. Sensor Dustbin

→ Automated gate - Now a days we don't need to open gate and close it. Installing a Automated gate i.e using our finger Print at the entrance automatically the main gate will recognise it

and will open the door.

→ Smart door - Person need not to using bell or bang the door to open it. ~~Door~~ Smart Door will have Retina Sensing Technology. If a Person is stand in front of door, Automatically the door will scan the human retina and door will be opened.

→ Security Camera - NO watchman or guard are needed. Installing a CCTV Camera is in Entrance or inside the home will get to know all the activities happened in home.

→ Modular Kitchen - women who is in kitchen need not to bend & open the door to take the requirements. Easily by standing she can tap the part of shelf and that will be opened automatically.

→ Security lockers - like ancient times people need not to go to bank to deposit their money or valuable things in bank lockers. Installing safety lockers at home will be more easy for them to ~~store~~ protect them.

C.

Block Diagram of IOT working Process

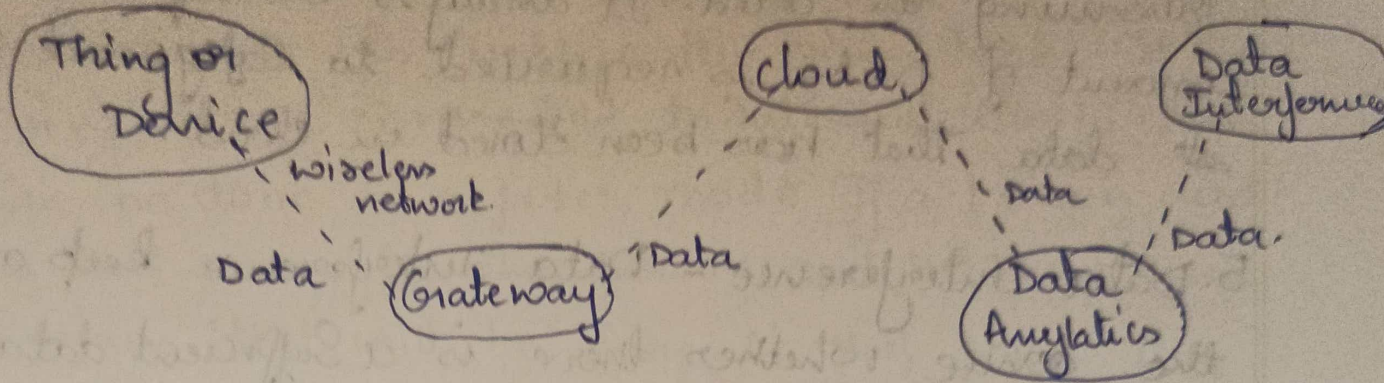


Fig 1.1 - IOT working Process.

From the Block Diagram, we can easily analyse how Internet of thing working process is done. Everything is done by using wireless network mode.

1. There should be device or a thing that should be connected to Internet i.e. a data with a good connection is required.
2. Through this process the device will be connected to gateway. That is through Internet the gateway will be connected to device in a wireless mode.
3. When gateway gets access to device, all the data will be stored in cloud. Cloud is the safest place where all the required data can be easily stored and it will be safe in future too.



4. Data Analytics plays a dominant role in Processing the data. It analyzes the ~~size~~ what amount of data is required to safeguard the data that has been stored in cloud.

5. Data Interference - Data Interference keep alerting the device whether there is a sufficient data or not to manage the data. In case there is no required Internet or space to store them, Data Interference ~~will~~ will help the device to notice or to be aware about it.

Through out this whole Process, Data plays a major Role in the process of Internet of things in a wireless mode.

Part-B

1. Artificial Intelligence in business is considered as a boon because everything will be easily done by using the advanced technology. Everything will be done by getting access through applications, devices, tools, E-Commerce etc.

The main applications of Artificial Intelligence in business using devices, tools, applications, E-Commerce etc are....

• People in manufacturing Industry need not to spend more time on work or need not to use man power to complete the given task. By using device connected to Internet easily work can be done in a faster mode. If a person need to send money to other person and between them Business deal will be there. At that point, they must travel to other city and give them money. By using Advanced Technology they can send money easily by one click to another person.

Manufacturing Industry or Business do not need more man power to produce goods. By installing Advanced machine in the Industry or factory will help them to ~~make~~ produce more products using less time.

8. Still there are many Advanced technology where the Industry can install or implement in their working process which will be more convenient to use and produce more amount of goods.

32
50 Pg



Third Internals

Part-B (Case study)

1. Digital Technologies can help Synchronize demand with Supply in agriculture using just in time technologies and farm analytics. Vivek Rajkumar build a agriculture production management platform called 'AIBONO'. AIBONO helped farmers grow crops as per market demand, assisted retailers in sourcing fresh fruits and vegetables directly from the farms throughout the year, and provided end consumers with the best of Perishable produce. Indian farmers faced issues such as low farm yield, inadequate storage facilities, inadequate transport logistics and lack of an organized structure. The Company scaled up operations to launch the 'Smart farming Collectives' initiative wherein partner farmers shared AIBONO's resources and formed Collaboratively for mutual benefit and eventually emerged as a Seed-to-plate Company.

The Company future plan is to go for Capacity expansion, Supplying produce to large organized retail chains, home delivery of perishable produce through last-mile delivery partners, and partnering with more young farmers who are well versed in using the internet & Electronic devices.

2. Challenges that fresh food aggregators might face in India are farmers are low yield farm, inadequate model, beginning with the pilot stage when vivek, armed with an engineering degree from IIT Madras, got into farming paddy and banana on his ancestral land. Though he did not make a profit, he gathered a lot of farm data, including the amount of fertilizers and water used, the types of seeds used etc.. and built a digital platform that could provide real-time precision agriculture services to farmers by processing all the parameters on a farm.

Initially, farm management as a service business model was implemented in the Nilgiris wherein partner farmer shared AIBON's outsourced measurement, production management, and the decision-making process to AIBONO. The Company scaled by operations to launch the smart farming collectives initiative wherein partner farmers shared AIBON's resources and farmed collaboratively for mutual benefit and eventually emerged as a seed-to-plate company.

Part-A

1.a. Cloud Computing is the process of securing and safeguarding the data and other ~~info~~ information by using Internet is called Cloud Computing.

1.b. Architecture of Augmented Reality System ~~is~~ has grown rapidly in current situation. Everything has been easy to complete the work by using augmented Reality in the field of architecture. People who are in the field of architecture are able to work very easily. They can easily build or ~~form~~ ^{frame} a design using augmented ~~reality~~ reality. Architects can create a duplicate design to check out whether it suits in the future plan or not.

Augmented Reality has been one of the important useful technology in the architecture field which made their path very easy and clean to build their future. Not only

creating ~~and~~ or framing a design even to create graphic also augmented reality made easy path.

Augmented Reality can be used in the field of mathematics also where they can easily measure the height of the building or any calculations related to that field.

-4- In a single word we can say that augmented reality is Boon for architectures which make their path very easy and convenient in all the terms for architectures.

1.C.

Various ethical challenges in the usage of emerging technologies are.

1. Challenges in Infrastructure
2. Challenges in Augmented reality (AR)
3. Challenges in Virtual reality (VR)
4. Challenges in Internet of thing (IOT)
5. Challenges in Data Science (DS)
6. Challenges in Service based Industry.



→ Challenges in Infrastructure - The first ethical challenges in the usage of emerging technologies is Infrastructure. Infrastructure is the main pillar in the development of society. So the people who are implementing the improved technologies in Infrastructure should be very careful and aware about it. One mistake can cause a huge disaster.

→ Challenges in Augmented Reality - Most of the architects use augmented reality in their work. This is because it makes their work very easy and convenient, but this is not as easy as it is. It involves huge risk, people should be more careful while using augmented reality in their work.

→ Challenges in Virtual Reality - Virtual Reality helps the graphic designer and others in many aspects, but this is not for everyone. Some people might feel this as a difficult task to learn and adopt it in their daily life.

→ Challenges in Internet of thing - Internet of thing is kind of easy to use but it can be misused very easily. Most of the innocent people will fall in trap for some ~~at~~ unknown things which they are not aware of. These challenges is kind of risk too for people in future if they are not aware about this.

→ Challenges in Service Based Industry -

In Service Based Industry challenges faced are huge. If the service ^{Provider} ~~giver~~ is not aware about the ~~tech~~ recent technology which is implemented in their Industry then it is quite difficult to ~~serve~~ service there where as the Service receiver is not aware he cannot enjoy the service provided by Industry.

82 Conclusion - These are the few major challenges in the ~~usage~~ of ~~not~~ emerging technology in their ~~field~~ working field such as Infrastructure, Augmented reality, Internet of thing and many more.

2.a. Digital Privacy is the process of securing the data such as files, documents, recordings, images etc ~~in the~~ by using the particular software is known as Digital Privacy.

2b. Additive manufacturing is the process where the manufacturer or a company will use software where they can process the data easily for additional manufacturing purpose.

The significance of Additive manufacturing are:-

1. This process is time consuming for the worker who are working in Additive manufacturing process.
2. Additive manufacturing helps to create new ideas which can be easily done.
3. Huge calculations can be done very quickly in this process.
4. Additive Manufacturing process is very easy to use and it can be used by anyone having a basic knowledge about it.

Examples are -

1. used in graphic and design process
2. used in Mathematical purpose
3. used in Healthcare sectors.

2.C.

Applications of Augmented Reality and Virtual Reality are very similar but hold only few differences in certain field.

1. Both are used in Health and Medical Industry
2. Education Sector
3. Aircraft ~~purpose~~
4. In the field of architecture
5. used in farming
6. Applied in Business field
7. used in I.T Sectors
8. used for Graphic and designing
9. Applied in Mathematics.
10. used in Fashion Industry.

Augmented Reality

- Health and Medical Sector - This advanced technology is used to medical sector too for scanning ~~for~~ X-Ray or other purpose. Through this we will get result very quick and clearly.
- Architecture - Many Architects use Augmented Reality in their daily work which made their task very easy and convenient.
- Field of Agriculture - For farmer, this made their life or work very easy. They can easily calculate their yield or anything related to farming.
- used in Business - Applying Augmented Reality in Business made worker and other people who are in Business very easy.
- Mathematics - Using Augmented Reality in mathematics made them to solve very huge problems very quickly and easily.

Virtual Reality

- Education - we all know that Education is being improved by using Smart class or technology and Virtual Reality plays a major Role in it.
- Aircraft - Aviation Industry can easily adopt Virtual Reality for creating a design of their aircraft.
- For IT Sector this made their work very easy and convenient in all the aspects.
- ~~Graphic~~ designing ~~made~~ became more innovative and improved in trend wise by using Virtual Reality.
- Fashion ~~technology~~ nosed to sky by implementing virtual ~~tech~~ Reality and made their work Very easy and convenient.

38
50/4