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Subject title – Antifical Intelligence

Ans to the Qus No: 01(a)

Answer : <u>AI:</u>

Artificial intelligence (AI) is a wide-ranging branch of computer science concerned with building smart machines capable of performing tasks that typically require human intellegence. While AI is an interdiscipling science with multiple approaches, advancements in machine learning and deep learning, in particular, are creating a paradism shift in virtually every sector of the tech industry.

Application of AI :

Aritifical intelligence has various applications in todays society. It is becoming essential for today's time because It can ~~sto~~ solve complex problems with an efficient way in multiple industries, such as healthcare, entertainment, finance, education etc. AI is making our daily life more comfortable and fast.

following are some sectors which have the application of Arotificial intelligence:

① AI in Astronomy :

Artifical intelligence can be very useful to solve complex universe problems. AI Technology can be helpful for understanding the universe such as how it works, origin etc.

② AI in Healthcare:

→ In the last, five to ten years, AI becoming more advantageous for the healthcare industry and going to have a significant impact on this industry.

③ AI is Gaming :

AI can be used for gaming purpose. The AI machines can play strategic games like chess; where the machine needs to think of a large number of possible places.

④ AI in Finance:

AI and finance industries are the best matches for each other. The finance industry is implementing automation, chatbot, adaptive intelligence, algorithm trad and machine learning into financial processes.

⑤ AI In Social Media.

⑥ AI in Traval & Transport.

⑦ AI in Automotive industry

⑧ AI in Robotices.

⑨ AI in Entertainment

⑩ AI in Agriculture.

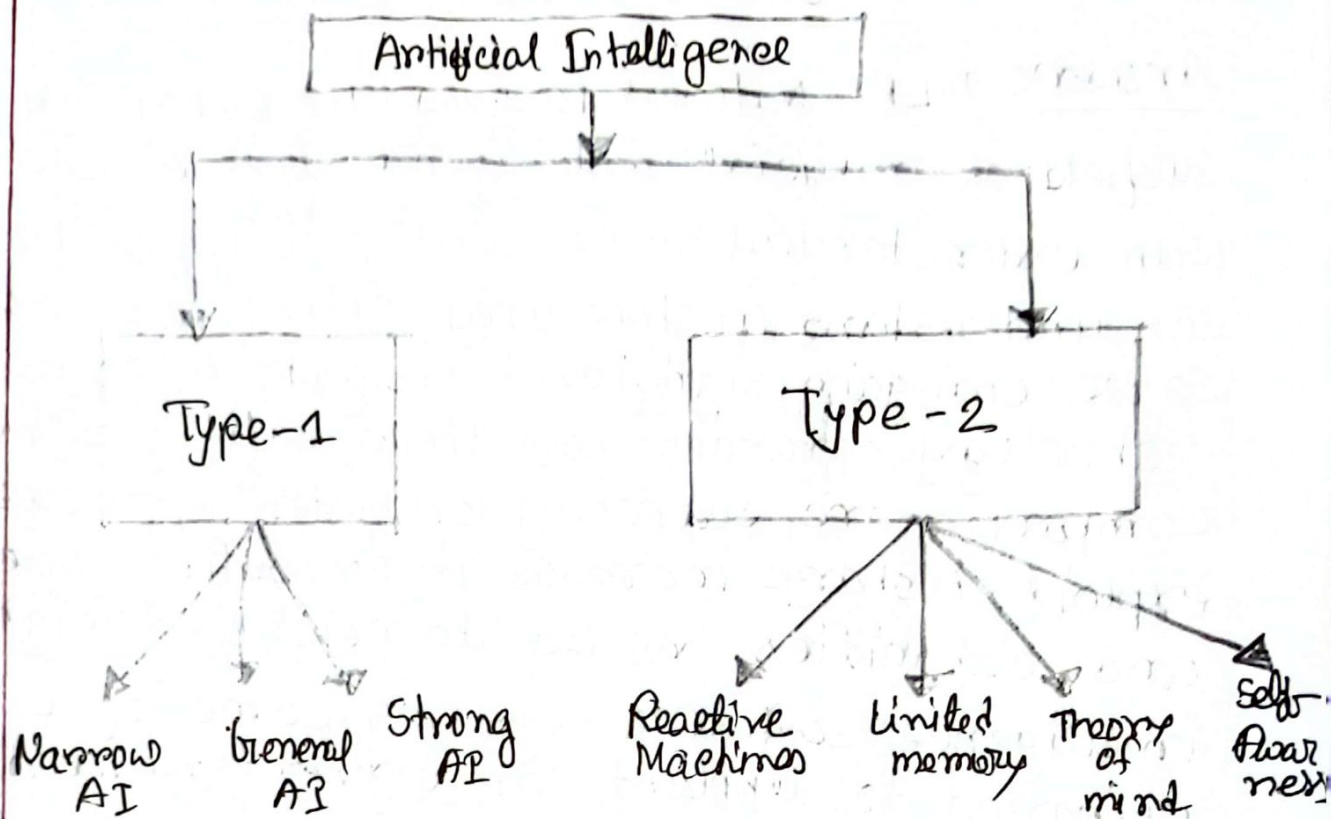⑪ AI in E-commerce.

⑫ AI in education.

Ans to the Qus No : 01 (b)

__Answer:__ __NLP:__ Natural language Processing (NLP) is a subfield of artificial intelligence that assists computers with understanding human language. Utilizing NLP, machines can understand unstructured online information so we can gain significant insights. As computer technology advances past their artificial requirements, companies are searching for better approaches to exploit. A sharp increase in computing speed and capacities has led to new and highly intelligence software systems, some of which are prepared to supplant or augment human services.

The most widely utilized NLP application is machine translation which assists with conquering the language obstructions. As the amount of data accessible online is expanding step by step, the need to access and process it turns out be increasing significant.

Ans to the Qus No : 02 (a)

__Answer:__ Artificial intelligence can be detainded in various types. There are mainly two types of main categorization which are based on capabilites and based on functionally af AI. following is flow diagram which explain the types of AI.

Artificial Intelligence

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                    ┌─────────────────────┐
                    │  Type-1  │          │  Type-2  │
                    └─────────────────────┘
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Narrow AI   General AI   Strong AI   Reactive Machines   Limited memory   Theory of mind   Self-Awareness

Ans to the Qus NO: 02 (b)

Answer: Foundation of AI:

The disciplines that contributed ideas, viewpoints, and techniques to AI. It is forced to concentrate on a small number of people, events and ideas and to ignore others that also were important.

I'll explain and represent it through a series of questions

① Philosophy:

Rationalism, Dualism, materialism, Empiricism. Induction, Logical, Positivism, confirmation –

Theory
→ All takes the following ideas from philosophy.
  * where does knowledge from?
  * How does knowledge lead to action?
  * Can formal rules be used to draw valid conclusion?

② Mathmatices:
  * what are the formal roles to draw valid conclusions?
  * what can be computed?
  * How do we reason with uncertain information?
  * The main three fundamental areas Logic computation and probability.

③ Economics:
  * How should we make decision so as to maximize payoff?
  * How should we do this when others may not go along?
  Lility. Decision Theory, Game theory ; Operations research

④ Neurcoscienee:
  * How do brain process information?

⑤ Phycology:
  * How do humans and animals think and act?
  → Behaviourism, cognitive psycology.

⑥ Computer Engineering:
  * How can we build an efficient, computer?
  → operational computer, and operational programable computer.

⑦ Agents:
  → Human Agent
  → Robotic
  → Software Agent.

Ans to the Qus NO: 04(a)

Ans: Algorithm of "A Rice - Cook agent":

This classic Method.

① Rinse the rice

② Use the right ration of water. Add 2 parts water and 1 part rice to a large pot.

③ Bring the water to a boil. Once Its boiling add a big pinch of salt.

④ Maintain a simmer.

⑤ cook without peeking or stirring.

⑥ Let the rice rest covered.

⑦ Fluff the rice with a fork.

Ans to the Qus NO: 04(b)

Answer: Model - based reflex agent:

→ The model - based reflex agent can work in a partially observable environment, and track the situation.

→ A model based agent has two important factors:

Model: It is knowledge about "how things happen in the world. So it is called a model - based agent.

* Internal state:

It is a representation of the current state based on percept history.
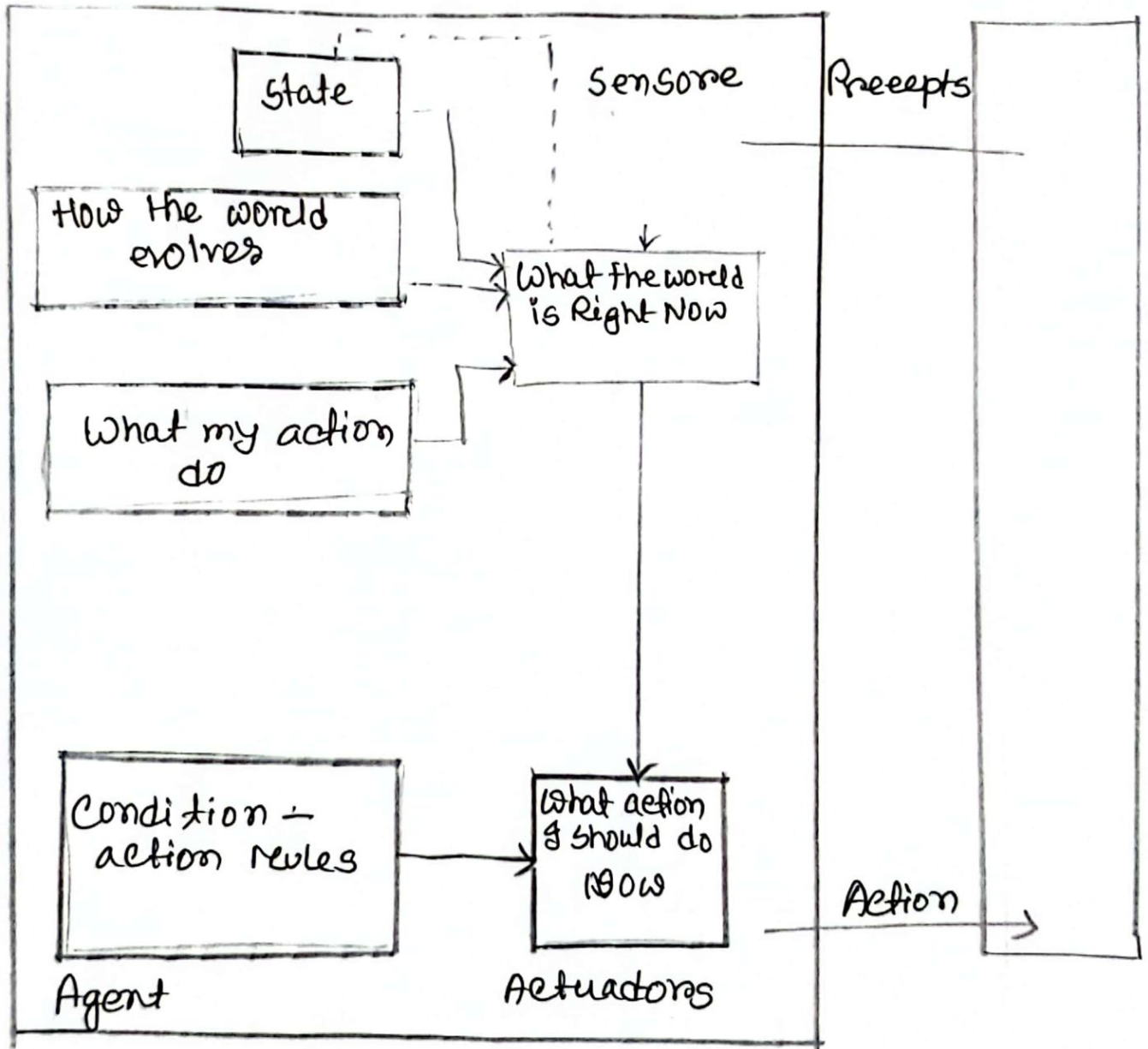
→ Those agents have the model, which is knowledge of the world and based on the model they

performed actions.

→ Updating the agent state requires information about: ⓐ How the world evolves
ⓑ How the agents action affeets the world.

Big Diagram of Model-based Reflex agent.