1: Is AL a science, or is it engineering?

ANS 1: **Artificial Intelligence (AI) is a branch of research and engineering** that integrates science and engineering to construct intelligent machines. It draws on work from philosophy, psychology, and computer science, as well as brain science and languages.

ANS 2: Artificial Intelligence (AI) **combines science and engineering** in order to build machines capable of intelligent behaviour. It brings together work from the fields of philosophy, psychology, and computer science (see PHILOSOPHY, PSYCHOLOGY, COMPUTER), and contributes to and has drawn on brain science and linguistics

# 2 : To what extent are the following computer systems instances of artificial intelligence:

# (A) Supermarket bar code scanners. (B) Web search engines. (C) Voice-activated telephone menus. (D) Internet routing algorithms that respond dynamically to the state of the network

# ANS (a)Supermarket bar code scanners are only able to read the code however they are not able to perform any kind of machine learning techniques to be able to learn a sequence from the codes. As machine learning is a important part of artificial intelligence (AI) so they are not instances of AI. Similarly for Voice-activated telephone menus they could only display and cannot perform any intelligent task

# ANS (B) Search Engines are now part of our daily life, whether it be carrying out research for Xmas presents or where is the nearest coffee shop open before 7am or looking for best Steak House in town. People are now becoming more and more dependent on search engines to get the answer for their everyday queries. At Inspire we monitor our search traffic using a variety of analytics. Most of our queries returned are related to what we do and some are simply bizarre. Those we’re interested in relate to the services of what we do e.g improving search ranking, web design, web development,

# ANS (C) Voice-Activated Telephone Menus are in a way, similar to Web Search Engines. The phone is programmed to hear a voice, listen for key words, and perform an action based on those words.

# ANS (D) Internet routing algorithms that respond dynamically to the state of the network respond on their own to what's happening in their environment. If there is too much traffic, it can decided whether or not to open up more space. Internet Routing Algorithms know what ports are accessible and which ones are not

# 3 : Define in your own words ?

# A: intelligence: can be defined as the ability to perceive information and contain it is as knowledge to adapt to an environment.

# B: Artificial intelligence: is a branch of a computer science that is concemed with automation of intelligent behavior.

# C: Agent: one that acts or exerts power

D: Rationality: Rationality means that **an AI agent is assumed to take account of available information and uncertainty, potential costs and benefits, and to act consistently (logically) in choosing the best action**

E: logical reasoning: Logical reasoning is **when the artificial intelligence processes strict rules of logic**. Instead of the flexible intelligence of humans, this is the direct analysis of logical connections, such as if-then statements.

4: List all the fields of AL and explain?

* 1) Machine Learning.
* 2) Deep learning.
* 3) Neural Networks.
* 4) Cognitive Computing.
* 5) Natural Language Processing.
* 6) Computer Vision.

1) Machine Learning:  Machine learning is a subfield of artificial intelligence, which is broadly defined as **the capability of a machine to imitate intelligent human behavior**. Artificial intelligence systems are used to perform complex tasks in a way that is similar to how humans solve problems

2) Deep learning: **Deep learning** is part of a broader family of **machine learning** methods based on artificial neural networks with representation learning

3) Neural Networks: Artificial **neural networks** (ANNs), usually simply called **neural networks** (NNs) or **neural nets**, are computing systems inspired by the biological **neural networks**

**4)** Cognitive Computing: Cognitive computing is **the use of computerized models to simulate the human thought process in complex situations where the answers may be ambiguous and uncertain**. The phrase is closely associated with IBM's cognitive computer system, Watson

5) Natural Language Processing: Natural language processing strives to build machines that understand and respond to text or voice data—and respond with text or speech of their own—in much the same way humans do

* 6) Computer Vision: Computer vision is **a field of artificial intelligence that trains computers to interpret and understand the visual world**. Using digital images from cameras and videos and deep learning models, machines can accurately identify and classify objects — and then react to what they “see.

THANK YOU

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