

# AI Exam Questions

## AI Introduction

- **What is AI?**
  - A branch of computer science dealing with the simulation of intelligent behaviour in computers
  - The capability of a machine to imitate intelligent human behaviour
  - The ability of a digital computer or computer controlled robot to perform tasks commonly associated with intelligent beings.
  - The study of how to make computers do things at which, at the moment, people are better.
- **What is difference between AI and Machine Learning (ML)?**
  - AI generally stands for programs with the ability to reason and learn like humans. ML is a discipline of AI and the field of study that gives computers the ability to learn without being explicitly programmed.
- **Provide some applications of AI?**
  - Image recognition
  - Speech translation
  - Autonomous driving
  - Generating images, speech, text
  - Spam & Fraud detection
  - ChatGPT and similar tools
- **What is difference between Connectionism and Symbolic AI?**
  - **Connectionism AI:**

A branch of AI that is inspired by the way the brain works. The basic idea is that the brain is made up of a large number of simple processing units, or neurons, that are interconnected. This interconnected network of neurons is able to learn and perform complex tasks by adjusting the strength of the connections between the neurons (→ Artificial Neural Networks).
  - **Symbolic AI:**

A branch of AI that focuses on the processing and manipulation of symbols or concepts, rather than numerical data. The goal of Symbolic AI is to build intelligent systems that can reason and think like humans by representing and manipulating knowledge and reasoning based on logical rules.
- **Which are important events in the history of neural networks?**
  - 1956: Dartmouth Conference – “Birth of AI”
  - 1997: Deep Blue (chess computer) from IBM beat human champion
  - 2003: Neural networks with deep learning ability
  - 2013: Breakthrough of voice and visual identification
- **What is difference between “strong” and “weak” AI?**
  - **Strong AI** emulates humans and provides general solutions for different tasks
  - **Weak AI** provides special solutions for specific task
- **What is an intelligent agent?**
  - Anything that perceives its environment, takes actions autonomously to achieve goals, and may improve its performance with learning or use of knowledge.
  - May be simple or complex, a thermostat is considered an IA, as is a human being.