1. Find three definitions of AI and give a brief comparative discussion of the definitions.

Solution -

Definition 1

The capability of a machine to imitate intelligent human behavior.

Defination 2

Artificial intelligence (AI) is the simulation of human intelligence processes by machines, especially computer systems

Defination 3

A branch of computer science dealing with the simulation of intelligent behavior in computers.

Comparative Discussion - All these definitions points out the capability of a computer machine to be intelligent or mimic human intelligence.

2. Find five topics of AI and give a brief description of each.

Solution -

AI in Finance - Artificial Intelligence is used in Finance for Algorithm trading, marketing analysis, data mining and much more. In this, AI uses its capability to analyze the market and stock and predict the possible outcomes in upcoming future and figuring out what’s best for the client based on current savings for investment.

Deepfake - The term Deepfake comes from Deep learning and Neural networks which allows AI to create an animated version of anyone including their facial expression and voice. Deepfake AI is capable of producing audio and video of a person without the person.

Aviation - Artificial Intelligence is used in Aviation and flying as it can help pilots navigate better and distribute workload. It helps in flying, combat fighting with unmanned planes and flying surveillance planes.

Robotics - AI in Robotics plays a vital role in production lines and industries to carry out the human task by AI robots. This involves looking at how any physically constructed technology system can perform a task or play a role in any interface.

Internet of Things

Integrated devices in a network or digital machine talking to each other with unique identifiers without human involvement is called the internet of things.

3. (10 marks) Translate the following statements into logic expressions:

"Every program has a programmer."

∀x ∃y L(x,y)

"There is a programer who has not written a program."

∃x ∀y L(programmer(x) -> ¬ written(y))

"Every programer has written a short program."

∀x ∃y L(x,y)

"Some integers are even and some are odd."

∃ x [integer( x ) ∧ (even( x) V od(x)]

"If an integer is not even, then it is odd."

∀X (¬even(x) -> odd(x))

"All roads lead to Rome."

∀x Rome(x)

"Grammar A generates all and only well-formed formulae."

∀ X -> well formed(x)

"Everyone loves someone."

∀x ∃y L(x,y)

"Someone loves everyone."

∃x ∀y L(x,y)



