

45 Lecture - CS402

Important Mcqs

1. What is a Turing machine?

- a) A type of computer hardware
- b) A theoretical computing machine
- c) A programming language
- d) An operating system

Answer: b

Who invented the Turing machine?

- a) Bill Gates
- b) Steve Jobs
- c) Alan Turing
- d) Charles Babbage

Answer: c

What is the tape in a Turing machine?

- a) A storage device
- b) A memory unit
- c) A type of input device
- d) A linear sequence of cells that can hold symbols

Answer: d

What is the read/write head in a Turing machine?

- a) A sensor that reads data from the tape
- b) A laser that writes data onto the tape
- c) A mechanical arm that moves the tape
- d) A device that can read or write symbols on the tape

Answer: d

What is the finite control in a Turing machine?

- a) A software program that controls the machine
- b) A device that limits the amount of time the machine can run
- c) A set of rules that determine the next action based on the current state and input symbol
- d) A mechanism that prevents the machine from overheating

Answer: c

What are the actions that a Turing machine can take?

- a) Moving the read/write head, writing a symbol, or changing the state
- b) Running a program, opening a file, or sending an email
- c) Printing a document, copying a file, or deleting a folder
- d) None of the above

Answer: a

Can a Turing machine solve any problem that can be solved algorithmically?

- a) Yes

b) No

Answer: a

Are there any problems that cannot be solved by a Turing machine?

a) Yes

b) No

Answer: a

What is the significance of the halting problem in the context of Turing machines?

a) It demonstrates the limitations of computing machines

b) It is an example of an algorithm that cannot be solved by a Turing machine

c) It is a problem that Turing machines can solve easily

d) None of the above

Answer: a

What is the Church-Turing thesis?

a) It states that all problems that can be solved algorithmically can be solved by a Turing machine

b) It is a theorem that proves the existence of Turing machines

c) It is a programming language designed for Turing machines

d) None of the above

Answer: a