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