1 -What is the number of USB ports available on the Raspberry Pi 3 Model B?

a) 2

b) 4

c) 6

d) 8

2 -Which wireless communication technology is built into the Raspberry Pi 3 Model B?

a) Bluetooth

b) Zigbee

c) NFC

d) Infrared

3 -How is the operating system typically installed on a Raspberry Pi 3 Model B?

a) Using a DVD drive

b) Downloading from a web browser

c) Flashing a microSD card

d) Connecting an external hard drive

4 -What is the purpose of the GPIO (General Purpose Input/Output) pins on the Raspberry Pi 3 Model B?

a) To connect external monitors

b) To provide power to the device

c) To connect USB devices

d) To interface with external hardware and devices

5 -What is the purpose of the CSI (Camera Serial Interface) connector on the Raspberry Pi 3 Model B?

a) To connect to external monitors

b) To connect USB devices

c) To interface with cameras

d) To provide power to the device

6 -What is the purpose of the DSI (Display Serial Interface) connector on the Raspberry Pi 3 Model B?

a) To connect to external hard drives

b) To interface with displays

c) To provide power to external devices

d) To expand the GPIO capabilities

7 -Which network connectivity option is NOT natively available on the Raspberry Pi 3 Model B?

a) Wi-Fi

b) Ethernet

c) Cellular

d) Bluetooth

8 -Which of the following is a recommended power supply voltage for the Raspberry Pi 3 Model B?

a) 3V

b) 5V

c) 9V

d) 12V

9 -What is the role of the microSD card slot on the Raspberry Pi 3 Model B?

a) To connect to external storage devices

b) To store the operating system and user data

c) To enable PoE (Power over Ethernet) functionality

d) To provide audio output

10 -What is the purpose of the 3.5mm audio jack on the Raspberry Pi 3 Model B?

a) To connect to external displays

b) To connect to external speakers or headphones

c) To interface with sensors

d) To provide additional USB connectivity

11 -What is an electric circuit?

a) A closed loop for the flow of electric current

b) A device used to generate electricity

c) A type of battery

d) A unit for measuring electrical resistance

12 -Which component in a circuit restricts the flow of electric current?

a) Resistor

b) Led

c) Inductor

d) Diode

13 -What is a closed circuit?

a) A circuit with no components

b) A circuit where the current can flow continuously

c) A circuit that is open to the atmosphere

d) A circuit with a single component

14 -What happens if a component in a closed circuit becomes disconnected or fails?

a) The circuit becomes open and current stops flowing

b) The circuit becomes a short circuit

c) The voltage increases

d) The circuit becomes grounded

15 -What is a breadboard commonly used for in electronics?

a) Baking bread

b) Creating prototypes of electronic circuits

c) Charging batteries

d) Storing resistors

16 -How are components connected on a breadboard?

a) Through soldering

b) Using adhesive tape

c) By pressing them into holes in the board

d) By using glue

17 -What is the purpose of the power rails on a breadboard?

a) To display voltage levels

b) To connect components directly

c) To provide power and ground connections to components

d) To hold components in place

18 -Which of the following components is commonly used to bridge connections on different parts of a breadboard?

a) Capacitor

b) Transistor

c) Jumper wire

d) Resistor

19 -What is the advantage of using a breadboard over soldering components directly?

a) It is faster and more permanent

b) It requires fewer components

c) It allows for easy modification and reuse of components

d) It is less expensive

20 -What is the typical arrangement of the component holes in a breadboard?

a) Rows of holes are connected horizontally, and columns of holes are connected vertically

b) Rows of holes are connected vertically, and columns of holes are connected horizontally

c) Rows and columns are not connected in a breadboard

d) Rows and columns are connected in a zigzag pattern

21 -How many GPIO pins are available on the Raspberry Pi 3 Model B?

a) 20

b) 26

c) 32

d) 40

22 -GPIO pins can be configured as either input or output. What does an "input" GPIO pin do?

a) It sends electrical signals to external devices.

b) It receives electrical signals from external devices.

c) It generates PWM signals.

d) It provides power to external components.

23 -What type of devices can be connected to GPIO pins on the Raspberry Pi?

a) Monitors and displays

b) Cameras only

c) External electronic components such as sensors, LEDs, and buttons

d) Only other Raspberry Pi boards

24 -How can GPIO pins be used to control LEDs?

a) By providing internet access to the LEDs

b) By connecting LEDs directly to the HDMI port

c) By sending radio signals to the LEDs

d) By toggling the voltage on GPIO pins to turn LEDs on and off

25 -How can you use GPIO pins to communicate with external devices using the I2C protocol?

a) By physically connecting GPIO pins to the device's power supply

b) By connecting GPIO pins to the device's ground

c) By using GPIO pins as clock SCL and data SDA lines

d) By connecting GPIO pins to the device's audio output

26 -Ultrasonic sensors use which type of waves to measure distance?

a) Infrared waves

b) Radio waves

c) Ultraviolet waves

d) Sound waves

27 -How does an ultrasonic sensor measure distance?

a) By emitting and receiving radio signals

b) By emitting and receiving infrared light

c) By emitting and receiving ultraviolet light

d) By emitting sound waves and measuring the time taken for the waves to bounce back

28 -Ultrasonic sensors can be used for which of the following applications?

a) Detecting light intensity

b) Measuring temperature

c) Detecting motion and presence

d) Transmitting audio signals

29 -In UART communication, which line is responsible for transmitting data from one device to another?

a) RX

b) TX

c) CLK

d) RST

30 -How many data wires are required for communication using UART?

a) 1

b) 2

c) 3

d) 4

31 -What is the primary function of a sensor?

a) To amplify electrical signals

b) To process data

c) To convert physical quantities into electrical signals

d) To generate heat

32 -Which of the following is a contactless sensor used for detecting the presence or absence of

an object?

a) Photodetector

b) Potentiometer

c) Encoder

d) Ultrasonic sensor

33 -Which device converts a non-electrical quantity into an electrical signal?

a) Sensor

b) Actuator

c) Transducer

d) Oscillator

34 -Which of the following is a primary function of a sensor?

a) Amplify electrical signals

b) Convert energy from one form to another

c) Generate power

d) Convert physical quantities into electrical signals

35 -Which of the following converts one form of energy into another, often with the purpose of measurement or communication?

a) Sensor

b) Actuator

c) Transducer

d) Regulator

36 -A device that detects changes in the environment and provides an electrical signal as output is called a:

a) Transducer

b) Sensor

c) Actuator

d) Modulator

37 -What is calibration?

a) Adjusting equipment to make it look new

b) Comparing a measurement device to a known standard

c) cleaning equipment thoroughly

d) Disposing of old equipment

38 -How does temperature influence sensor measurements?

a) It has no effect on sensor measurements.

b) It increases sensor accuracy.

c) It can cause drift and affect sensor accuracy.

d) It only affects digital sensors, not analog sensors.

39 -What is the primary concern when using sensors in corrosive environments?

a) Sensors become more accurate.

b) Sensors become more robust.

c) Sensors become less sensitive.

d) Sensors may degrade or corrode over time.

40 -Which of the following environmental factors can impact the reliability of wireless sensors?

a) Soil composition

b) Bird migration patterns

c) Radio frequency interference

d) Local cuisine

Using git Through Terminal:

41 -What does the command git add . do?

a) Adds all changes in the working directory to the staging area

b) Removes all files from the repository

c) Commits changes directly to the repository

d) Pushes changes to the remote repository

42 -How do you commit your changes to a Git repository after staging them?

a) git commit -m "Commit message"

b) git stage -m "Commit message"

c) git add -m "Commit message"

d) git push -m "Commit message"

43 -What command is used to check the status of your Git repository?

a) git status

b) git check

c) git info

d) git show

44 -Which command is used to create a new branch in a Git repository?

a) git new-branch

b) git create-branch

c) git branch-new

d) git branch

45 -How do you switch to a different branch in Git?

a) git move

b) git checkout

c) git switch

d) git change-branch

46 -How can you view the commit history of a Git repository?

a) git view-history

b) git show-history

c) git history

d) git log

47 -What is the purpose of the git remote command?

a) To create a new branch

b) To list and manage remote repositories

c) To commit changes

d) To merge branches

48 -How do you create a new branch and switch to it in a single command?

a) git switch

b) git create-branch

c) git checkout

d) git checkout -b

49 -What command is used to merge changes from one branch into another in Git?

a) git push

b) git merge

c) git pull

d) git combine

50 -What is a Personal Access Token (PAT) used for in the context of connecting to a repository?

a) Creating a new repository

b) Authenticating and accessing a repository

c) Deleting a repository

d) Changing the repository owner

51 -Which authentication method involves using a PAT to access a private repository?

a) SSH keys

b) Username and password

c) OAuth

d) PAT-based authentication

52 -Why might you use a PAT instead of a password for repository authentication?

a) PATs provide stronger encryption

b) PATs can only be used once, enhancing security

c) PATs can have limited scopes and expiration dates

d) PATs allow direct access to the repository without authentication

53 -How do you typically generate a Personal Access Token (PAT)?

a) It's generated automatically when creating a repository

b) You have to request it from GitHub support

c) It's generated from your username and password

d) You generate it from your GitHub account settings

54 -What permissions can you associate with a Personal Access Token (PAT)?

a) Reading repositories

b) changing account password

c) Sending emails

d) Editing user profiles

55 -When you connect to a repository using a PAT, where do you typically input the token?

a) In the terminal as a command

b) In the URL of the repository

c) In the browser's address bar

d) In your Git client's authentication settings

56 -What is the purpose of the command git remote set-url origin https://<PAT>@github.com/username/repository.git?

a) To change the name of the remote repository

b) To set a new remote URL for the "origin" remote

c) To list all remote repositories

d) To delete a remote repository

57 -What does <PAT> stand for in the command?

a) Private Access Token

b) Public Access Token

c) Personal Access Token

d) Protected Access Token

58 -Why might you use a Personal Access Token (PAT) in the remote URL?

a) To increase the size of the remote repository

b) To replace the username and password for secure authentication

c) To indicate the remote repository owner

d) To make the repository publicly accessible

59 -What happens when you execute this command “git remote set-url origin https://<PAT>@github.com/username/repository.git” with a valid PAT and repository URL?

a) It creates a new repository

b) It deletes the repository

c) It changes the remote URL for the "origin" remote

d) It renames the remote repository

60 -How does using a PAT in the remote URL enhance security?

a) It encrypts the repository files

b) It prevents access to the repository

c) It allows multiple users to access the repository

d) It avoids exposing the username and password

GitHub task from terminal repository link:

GalalMohammed/githubTask_terminal: SIC IoT GitHub terminal task.