



RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

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An ISO 9001:2015 Certified Institution

VALUE ADDED COURSES

2021-2022

Department of Electronics and Communication Engineering
21ECE01- Smart Industrial Safety Solutions

MARK SHEET

Sl. No	Register Number	Student Name	Mark
1	18TC1201	ABITHA V	88
2	18TC1202	AGALYA B	96
3	18TC1203	ANITHA N	92
4	18TC1204	FOUSIA BEGAM Y	92
5	18TC1205	JOTHILAKSHMI A	96
6	18TC1206	KAMARUNISHA H	96
7	18TC1207	KAVITHA U	84
8	18TC1208	MATHIYARASI S	96
9	18TC1209	NASIRA BANU M	88
10	18TC1210	PAVITHRA S	88
11	18TC1211	PRIYADARSINI D	88
12	18TC1212	RAJALAKSHMI M	88
13	18TC1213	RAJESWARI P	96
14	18TC1214	SANGARI A	92
15	18TC1215	SANGEETHA K	92

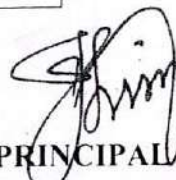


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Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
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VALUE ADDED COURSE
2021-2022

Department of Electronics and communication Engineering

21ECE01-Smart Industrial Safety Solutions

NAME: SANGARI.A

CLASS: IV/ECE

DATE: 20/08/2021

1. Which technology is commonly used for real-time monitoring of industrial equipment?

- A) RFID
- B) IoT
- C) Bluetooth
- D) Wi-Fi

2. What does PPE stand for in industrial safety?

- A) Personal Protection Equipment
- B) Professional Protection Equipment
- C) Personal Protective Equipment
- D) Protective Personal Equipment

3. Which of the following is a common hazard in industrial environments?

- A) Noise
- B) Slippery floors
- C) Chemical exposure
- D) All of the above

4. Which standard is widely used for occupational health and safety management systems?

- A) ISO 9001
- B) ISO 14001
- C) ISO 45001
- D) ISO 50001

5. What does HAZOP stand for?

- A) Hazardous Operations
- B) Hazard and Operability Study
- C) Hazardous Optimization
- D) Hazard Operation Plan

6. Which device is used to detect the presence of toxic gases in an industrial setting?

- A) Smoke detector
- B) Gas analyzer
- C) Carbon monoxide detector
- D) Fire alarm

23
25

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7. What is the main purpose of a safety management system (SMS)?
 - A) To increase production efficiency
 - B) To manage employee schedules
 - C) To systematically manage safety and health risks
 - D) To manage financial accounts
8. Which technology can be used to provide real-time location tracking of employees in hazardous areas?
 - A) GPS
 - B) RFID
 - C) Wi-Fi
 - D) Bluetooth
9. What is the primary benefit of predictive maintenance in industrial safety?
 - A) Reducing energy consumption
 - B) Preventing unexpected equipment failures
 - C) Improving employee morale
 - D) Increasing production speed
10. Which type of PPE would be most appropriate for protecting against airborne particles?
 - A) Hard hat
 - B) Safety goggles
 - C) Respirator
 - D) Ear plugs
11. Which of the following is a key feature of smart PPE?
 - A) Lightweight design
 - B) Connectivity for data monitoring
 - C) Low cost
 - D) Disposable materials
12. What is the role of machine learning in industrial safety?
 - A) To manage financial transactions
 - B) To analyze safety data and predict potential hazards
 - C) To automate production processes
 - D) To provide employee training
13. Which of the following is NOT a component of a safety management system?
 - A) Risk assessment
 - B) Hazard analysis
 - C) Financial auditing
 - D) Incident investigation
14. What is the primary function of an IoT sensor in an industrial setting?
 - A) To improve employee productivity
 - B) To monitor and collect data on equipment and environmental conditions




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- C) To enhance communication between employees
D) To reduce energy consumption
15. Which of the following standards focuses specifically on fire safety?
A) ISO 9001
 B) NFPA 70E
C) OSHA 1910
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16. What does SCADA stand for?
 A) Supervisory Control and Data Acquisition
B) Safety Control and Data Analysis
C) System Control and Data Application
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17. Which type of maintenance involves regular inspections and servicing to prevent equipment failure?
 A) Reactive maintenance
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18. Which wearable device can be used to monitor vital signs of workers in real-time?
 A) Smart helmet
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19. Which technology helps in creating digital twins for industrial safety applications?
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21. What does LOTO stand for in industrial safety?
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23. What is a common use of drones in industrial safety?
- A) Delivering packages
 - B) Aerial inspections and monitoring
 - C) Enhancing employee communication
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24. What does FMEA stand for?
- A) Failure Modes and Effects Analysis
 - B) Fault Management and Equipment Assessment
 - C) Facility Management and Efficiency Analysis
 - D) Failure Management and Efficiency Assessment
25. Which of the following is essential for effective incident investigation?
- A) Blaming the employees involved
 - B) Identifying root causes
 - C) Minimizing documentation
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Department of Electronics and communication Engineering

21ECE01-Smart Industrial Safety Solutions

NAME:

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Multiple-Choice Questions

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Answer: B) IoT

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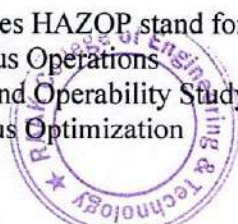
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D) Hazard Operation Plan

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Answer: B) Gas analyser

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12. What is the role of machine learning in industrial safety?
A) To manage financial transactions
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Answer: B) NFPA 70E
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Answer: B) Preventive maintenance




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- Answer: B) Smartwatch

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- Answer: C) Internet of Things (IoT)

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 - D) To enhance employee benefits
- Answer: C) To predict and prevent safety incidents

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- Answer: A) Lockout-Tagout

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- Answer: B) An area with limited entry and exit

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Answer: A) Failure Modes and Effects Analysis

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Answer: B) Identifying root causes




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Certificate of Completion

2021-2022


This is to certify that Mr/Ms **ABITHA V**

Year.....**V**..... Department.....**ECE**..... has successfully Completed the Value added course.

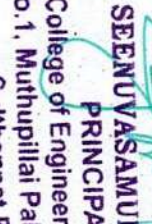
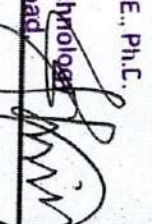
SCORE: **88**

COURSE
SMART INDUSTRIAL
TITLE: **SAFETY SOLUTIONS**

COURSE
DURATION: **9/8/21 to 13/9-21**


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VALUE ADDED COURSES

2021-2022

Department of Electronics and Communication Engineering

21ECE02- MATLAB Programming

MARK SHEET

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1	19TC1101	ABIRAMI S	88
2	19TC1102	BENINAL G	96
3	19TC1103	DINESH KUMAR V	92
4	19TC1104	GAUTHAM S	92
5	19TC1105	GOVINDARAJ K	96
6	19TC1106	I.KARTHESWARAN	96
7	19TC1107	I.MUTHURAMAN	84
8	19TC1108	KALAIVANAN M	96
9	19TC1109	KISHORE RAJAN N	88
10	19TC1110	NARAYANAN B	88
11	19TC1112	RAJALAKSHMI S	88
12	19TC1113	RESMINA FARVIN M	88
13	19TC1114	S.JEEVANANDAM	96
14	19TC1115	SATHISH N	92
15	19TC1116	SOORIYA D	92
16	19TC1117	SUGANYA M	88
17	19TC1118	YOGAA SUPARNA K P	96



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VALUE ADDED COURSE
2021-2022

Department of Electronics and communication Engineering

21ECE02- MAT LAB Programming

NAME:

CLASS:

DATE:

1. What does MATLAB stand for?
A) Matrix Laboratory
B) Mathematics Laboratory
C) Math and Logic Application
D) Matrix and Logic Application
Answer: A) Matrix Laboratory
2. Which command is used to clear all variables from the workspace in MATLAB?
A) clearvars
B) clear
C) clc
D) clf
Answer: B) clear
3. Which function is used to create a 2x2 identity matrix in MATLAB?
A) identity(2)
B) eye(2)
C) id(2)
D) ones(2)
Answer: B) eye(2)
4. How do you comment a single line in MATLAB?
A) //
B) ##
C) %%
D) %
Answer: D) %
5. What is the output of the following code: $A = [1, 2, 3]; B = A';$?
A) [1, 2, 3]
B) [1; 2; 3]
C) [3, 2, 1]
D) [1, 3; 2, 1; 3, 2]




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Answer: B) [1; 2; 3]

6. Which command is used to plot data in MATLAB?

A) plotdata()

B) graph()

C) plot()

D) plotline()

Answer: C) plot()

7. What is the command to read data from a CSV file in MATLAB?

A) readcsv()

B) csvread()

C) read.csv()

D) importcsv()

Answer: B) csvread()

8. Which command is used to find the size of a matrix in MATLAB?

A) length()

B) dim()

C) size()

D) shape()

Answer: C) size()

9. What is the output of `sum([1, 2, 3, 4])` in MATLAB?

A) 10

B) [10]

C) 24

D) [1, 2, 3, 4]

Answer: A) 10

10. Which command generates a 3x3 matrix of random numbers between 0 and 1 in MATLAB?

A) randmatrix(3)

B) rand(3)

C) random(3)

D) randi([0,1],3,3)

Answer: B) rand(3)

11. How do you create a row vector with values from 1 to 10 in steps of 2 in MATLAB?

A) 1:10:2

B) [1, 2, 3, ..., 10]

C) 1:2:10

D) [1 2 3 ... 10]

Answer: C) 1:2:10



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12. What is the command to transpose a matrix in MATLAB?

- A) transpose()
- B) T()
- C) .transpose
- D) .'

Answer: D) .'

13. Which command is used to create a new figure window in MATLAB?

- A) figure()
- B) newfig()
- C) fig()
- D) plotwindow()

Answer: A) figure()

14. What is the purpose of the hold on command in MATLAB plotting?

- A) To clear the current figure
- B) To hold the current plot so that new plots are added to it
- C) To pause the execution
- D) To save the current plot

Answer: B) To hold the current plot so that new plots are added to it

15. Which function is used to solve a system of linear equations in MATLAB?

- A) solve()
- B) linsolve()
- C) lin_equations()
- D) solve_linear()

Answer: B) linsolve()

16. How do you access the element in the second row and third column of matrix A in MATLAB?

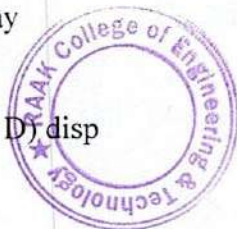
- A) A[2, 3]
- B) A(3, 2)
- C) A(2, 3)
- D) A[3, 2]

Answer: C) A(2, 3)

17. Which command is used to display text in the Command Window in MATLAB?

- A) echo
- B) display
- C) print
- D) disp

Answer: D) disp




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18. What is the result of $A .* B$ where A and B are matrices of the same size in MATLAB?
A) Matrix multiplication
B) Element-wise multiplication
C) Division of matrices
D) Subtraction of matrices
Answer: B) Element-wise multiplication
19. Which command is used to create a 3D plot in MATLAB?
A) plot3()
B) plot_3D()
C) plot()
D) plot3D()
Answer: A) plot3()
20. How do you save a variable A to a file named data.mat in MATLAB?
A) save('data.mat', A)
B) save('data.mat')
C) save A 'data.mat'
D) save('data.mat', 'A')
Answer: D) save('data.mat', 'A')
21. Which function is used to calculate the eigenvalues of a matrix in MATLAB?
A) eig()
B) eigen()
C) evals()
D) eigenvalues()
Answer: A) eig()
22. What does the `clc` command do in MATLAB?
A) Clears the Command Window
B) Clears the workspace
C) Closes all figures
D) Clears the current figure
Answer: A) Clears the Command Window
23. Which command is used to create a script file in MATLAB?
A) newsript
B) script
C) edit
D) createscript
Answer: C) edit



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24. How do you call a function named `myFunction` with input `x` in MATLAB?

- A) `myFunction(x)`
- B) `myFunction x`
- C) `call myFunction(x)`
- D) `myFunction`

Answer: A) `myFunction(x)`

25. Which function is used to create a logarithmic plot in MATLAB?

- A) `logplot()`
- B) `semilogx()`
- C) `loglog()`
- D) `logplotx()`

Answer: C) `loglog()`



S. Seenuvasamurthi
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NAME: GAUTHAM.S

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 - C) id(2)
 - D) ones(2)

4. How do you comment a single line in MATLAB?
- A) //
 - B) ##
 - C) %%
 - D) %

5. What is the output of the following code: $A = [1, 2, 3]; B = A';$?
- A) [1, 2, 3]
 - B) [1; 2; 3]
 - C) [3, 2, 1]
 - D) [1, 3; 2, 1; 3, 2]



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6. Which command is used to plot data in MATLAB?
A) plotdata()
B) graph()
C) plot()
D) plotline()
7. What is the command to read data from a CSV file in MATLAB?
A) readcsv()
B) csvread()
C) read.csv()
D) importcsv()
8. Which command is used to find the size of a matrix in MATLAB?
A) length()
B) dim()
C) size()
D) shape()
9. What is the output of `sum([1, 2, 3, 4])` in MATLAB?
A) 10
B) [10]
C) 24
D) [1, 2, 3, 4]
10. Which command generates a 3x3 matrix of random numbers between 0 and 1 in MATLAB?
A) randmatrix(3)
B) rand(3)
C) random(3)
D) randi([0,1],3,3)
11. How do you create a row vector with values from 1 to 10 in steps of 2 in MATLAB?
A) 1:10:2
B) [1, 2, 3, ..., 10]
C) 1:2:10
D) [1 2 3 ... 10]
12. What is the command to transpose a matrix in MATLAB?
A) transpose()
B) T()
C) transpose
D) '.



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13. Which command is used to create a new figure window in MATLAB?
A) figure()
B) newfig()
C) fig()
D) plotwindow()
14. What is the purpose of the hold on command in MATLAB plotting?
A) To clear the current figure
B) To hold the current plot so that new plots are added to it
C) To pause the execution
D) To save the current plot
15. Which function is used to solve a system of linear equations in MATLAB?
A) solve()
B) linsolve()
C) lin_equations()
D) solve_linear()
16. How do you access the element in the second row and third column of matrix A in MATLAB?
A) A[2, 3]
B) A(3, 2)
C) A(2, 3)
D) A[3, 2]
17. Which command is used to display text in the Command Window in MATLAB?
A) echo
B) display
C) print
D) disp
18. What is the result of $A .* B$ where A and B are matrices of the same size in MATLAB?
A) Matrix multiplication
B) Element-wise multiplication
C) Division of matrices
D) Subtraction of matrices
19. Which command is used to create a 3D plot in MATLAB?
A) plot3()
B) plot_3D()
C) plot()
D) plot3D()



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20. How do you save a variable `A` to a file named `data.mat` in MATLAB?
A) `save('data.mat', A)`
B) `save('data.mat')`
C) `save A 'data.mat'`
D) `save('data.mat', 'A')`
21. Which function is used to calculate the eigenvalues of a matrix in MATLAB?
A) `eig()`
B) `eigen()`
C) `evals()`
D) `eigenvalues()`
22. What does the `clc` command do in MATLAB?
A) Clears the Command Window
B) Clears the workspace
C) Closes all figures
D) Clears the current figure
23. Which command is used to create a script file in MATLAB?
A) `newscrip`
B) `scrip`
C) `edit`
D) `createscrip`
24. How do you call a function named `myFunction` with input `x` in MATLAB?
A) `myFunction(x)`
B) `myFunction x`
C) `call myFunction(x)`
D) `myFunction`
25. Which function is used to create a logarithmic plot in MATLAB?
A) `logplot()`
B) `semilogx()`
C) `loglog()`
D) `logplotx()`




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2021-2022

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Year...**III**... Department... **EC&E**... has successfully Completed the Value added course.


SCORE: **88**

COURSE

TITLE: **MAT. LAB. PROGRAMMING**.....

COURSE


DURATION: **01/8/21 to 13/8/21**.



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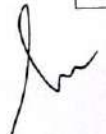
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VALUE ADDED COURSES
2021-2022

Department of Information Technology

21IT03 – ARDUINO PROGRAMMING
MARK SHEET

Sl. No	Register Number	Student Name	Mark
1	20TC0501	AKASH M	88
2	20TC0502	AKASH M	96
3	20TC0503	ANKANI LEELA SAI VARMA	92
4	20TC0504	AYISHA BEEVI H	92
5	20TC0505	BALAJI S	96
6	20TC0506	BHARATHI K	96
7	20TC0507	FARIDH KHAN J	84
8	20TC0508	PRAVIN R	96
9	20TC0509	PURUSHOTHAMAN D	88
10	20TC0510	RAJESWARI R	88
11	20TC0512	SATHEESH KUMAR A	88
12	20TC0513	SHARMILA S	88
13	20TC0514	SRI HARI B	96
14	20TC0515	SWATHI S	92
15	20TC0516	THAYUMANAVAR S	92


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VALUE ADDED COURSE
2021-2022

Department of Electronics and communication Engineering

21ECE03 – ARDUNIO PROGRAMMING

NAME:

CLASS:

DATE:

1. What is Arduino?
A) A type of operating system
B) A single-board microcontroller
C) A programming language
D) A computer hardware manufacturer
Answer: B) A single-board microcontroller
2. Which programming language is primarily used to program Arduino?
A) Python
B) Java
C) C++
D) JavaScript
Answer: C) C++
3. What function must be included in an Arduino sketch to run code repeatedly?
A) setup()
B) loop()
C) start()
D) init()
Answer: B) loop()
4. Which Arduino function is used to set the data rate for serial communication?
A) Serial.begin()
B) Serial.start()
C) Serial.init()
D) Serial.rate()
Answer: A) Serial.begin()
5. Which Arduino board has built-in WiFi capabilities?
A) Arduino Uno
B) Arduino Nano
C) Arduino Mega
D) Arduino MKR1000
Answer: D) Arduino MKR1000




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6. What is the purpose of the setup() function in an Arduino sketch?

- A) To initialize variables and settings
- B) To run code repeatedly
- C) To handle interrupts
- D) To display output on a screen

Answer: A) To initialize variables and settings

7. Which pin on the Arduino Uno is typically used for PWM (Pulse Width Modulation)?

- A) Pin 13
- B) Pin A0
- C) Pin 9
- D) Pin 2

Answer: C) Pin 9

8. What is the typical operating voltage of an Arduino Uno board?

- A) 3.3V
- B) 5V
- C) 9V
- D) 12V

Answer: B) 5V

9. Which function would you use to read an analog input on an Arduino?

- A) analogRead()
- B) digitalRead()
- C) analogWrite()
- D) digitalWrite()

Answer: A) analogRead()

10. Which command is used to turn on an LED connected to pin 13?

- A) digitalWrite(13, LOW)
- B) analogWrite(13, HIGH)
- C) digitalWrite(13, HIGH)
- D) analogWrite(13, LOW)

Answer: C) digitalWrite(13, HIGH)

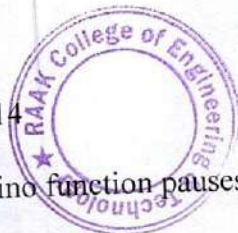
11. How many digital I/O pins are available on the Arduino Uno?

- A) 10
- B) 12
- C) 14
- D) 16

Answer: C) 14

12. Which Arduino function pauses the program for a specified time in milliseconds?

- A) wait()




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- B) pause()
 - C) delay()
 - D) sleep()
- Answer: C) delay()

13. What is the maximum current per I/O pin on the Arduino Uno?

- A) 20mA
- B) 30mA
- C) 40mA
- D) 50mA

Answer: C) 40Ma

14. Which function is used to write a PWM signal to a pin?

- A) pwmWrite()
- B) analogWrite()
- C) digitalWrite()
- D) pwmSignal()

Answer: B) analogWrite()

15. What is the purpose of the pinMode() function?

- A) To set the initial value of a pin
- B) To configure a pin as an input or output
- C) To start serial communication
- D) To read the state of a pin

Answer: B) To configure a pin as an input or output

16. Which of the following is a valid baud rate for serial communication in Arduino?

- A) 115200
- B) 57600
- C) 9600
- D) All of the above

Answer: D) All of the above

17. What is the default baud rate used in most Arduino serial communication examples?

- A) 9600
- B) 4800
- C) 14400
- D) 19200

Answer: A) 9600

18. Which Arduino function is used to write a character or a string to the serial port?

- A) Serial.read()
- B) Serial.println()
- C) Serial.input()
- D) Serial.write()




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Answer: B) Serial.println()

19. What type of memory is used to store Arduino sketches?

- A) SRAM
- B) EEPROM
- C) Flash
- D) DRAM

Answer: C) Flash

20. Which library is commonly used to interface with LCD displays?

- A) Wire
- B) LiquidCrystal
- C) EEPROM
- D) Servo

Answer: B) LiquidCrystal

21. What is the purpose of the Arduino IDE?

- A) To create graphical interfaces
- B) To write, compile, and upload sketches to the Arduino board
- C) To simulate Arduino projects
- D) To design PCB layouts

Answer: B) To write, compile, and upload sketches to the Arduino board

22. Which function would you use to read a digital input on an Arduino?

- A) analogRead()
- B) digitalRead()
- C) analogWrite()
- D) digitalWrite()

Answer: B) digitalRead()

23. Which Arduino library is used for controlling servos?

- A) Servo.h
- B) Motor.h
- C) PWM.h
- D) ServoControl.h

Answer: A) Servo.h

24. What is the maximum number of analog inputs on an Arduino Uno?

- A) 4
- B) 6
- C) 8
- D) 10

Answer: B) 6




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25. Which Arduino function is used to initialize a serial communication at 9600 baud rate?



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- A) Serial.write(9600)
 - B) Serial.init(9600)
 - C) Serial.begin(9600)
 - D) Serial.start(9600)
- Answer: C) Serial.begin(9600)



A handwritten signature in green ink, appearing to read 'S. Seenuvasamurthi'.

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VALUE ADDED COURSE
2021-2022

Department of Electronics and communication Engineering

21ECE03 – ARDUINO PROGRAMMING

NAME: SRIHARI.B

CLASS: II/ECE

DATE: 20/08/2021

1. What is Arduino?
A) A type of operating system
 B) A single-board microcontroller
C) A programming language
D) A computer hardware manufacturer
2. Which programming language is primarily used to program Arduino?
A) Python
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3. What function must be included in an Arduino sketch to run code repeatedly?
A) setup()
 B) loop()
C) start()
D) init()
4. Which Arduino function is used to set the data rate for serial communication?
 A) Serial.begin()
B) Serial.start()
C) Serial.init()
D) Serial.rate()
5. Which Arduino board has built-in WiFi capabilities?
A) Arduino Uno
B) Arduino Nano
C) Arduino Mega
 D) Arduino MKR1000
6. What is the purpose of the setup() function in an Arduino sketch?
 A) To initialize variables and settings
B) To run code repeatedly
C) To handle interrupts
D) To display output on a screen

24
—
25

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7. Which pin on the Arduino Uno is typically used for PWM (Pulse Width Modulation)?
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8. What is the typical operating voltage of an Arduino Uno board?
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11. How many digital I/O pins are available on the Arduino Uno?
A) 10
B) 12
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D) 16

12. Which Arduino function pauses the program for a specified time in milliseconds?
A) wait()
B) pause()
 C) delay()
D) sleep()

13. What is the maximum current per I/O pin on the Arduino Uno?
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14. Which function is used to write a PWM signal to a pin?
A) pwmWrite()
 B) analogWrite()
C) digitalWrite()
D) pwmSignal()
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- C) To simulate Arduino projects
- D) To design PCB layouts

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- B) digitalRead()
- C) analogWrite()
- D) digitalWrite()

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- B) Motor.h
- C) PWM.h
- D) ServoControl.h


24. What is the maximum number of analog inputs on an Arduino Uno?

- A) 4
- B) 6
- C) 8
- D) 10

25. Which Arduino function is used to initialize a serial communication at 9600 baud rate?

- A) Serial.write(9600)
- B) Serial.init(9600)
- C) Serial.begin(9600)
- D) Serial.start(9600)




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2021-2022

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SCORE:.....98.....

COURSE

TITLE: ARDUNIO PROGRAMMING

COURSE

DURATION: 9/8/21 to 13/8-21

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