Total No. of Questions : 5]

SEAT No. :

PA-1021

[Total No. of Pages : 2

[5902]-45
S.Y. B.Sc. (Computer Science)
ELECTRONICS
ELC - 241 : Embedded System Design
(2019 Pattern) (Semester - IV) (Paper - I) (24321)

Time : 2 Hours] *[Max. Marks : 35*

Instructions to the candidates :

1) ***Q.1 is compulsory.***
2) ***Solve any three questions from Q.2 to Q.5.***
3) ***Figures to the right indicate full marks.***
4) ***Neat diagrams must be drawn wherever necessary.***
5) ***Use of calculator is allowed.***

Q1) Attempt any Five : **[5 × 1 = 5]**

a) State any two characteristics of an embedded system.
b) What is SoC?
c) State any two Features of Raspbian OS.
d) List the logical operators in python.
e) What is the significance of GPIO·cleanup ( ) Function?
f) State applications of PIR sensors.

Q2) Answer the following : **[2 × 5 = 10]**

a) i) Explain time·ctime ( ), time·clock ( ) and time. Striuct_time functions used in python. **[3]**
   ii) Write a python program for the division of two numbers. **[2]**
b) Draw neat block diagram of Single Board Computer and explain any three blocks. **[5]**

Q3) Answer the following : **[2 × 5 = 10]**

a) Write a short on peripherals used in BCM2835. **[5]**
b) Explain the following statements. **[5]**
   i) Break
   ii) Pass
   iii) Continue
   iv) Try
   v) Range

P.T.O.

Q4) Answer the following : **[2 × 5 = 10]**

a) Explain the interfacing of a switch to Raspberry Pi with the help of neat diagram and write a python program for the same. **[5]**

b) List at least four types of Keyboards. Explain membrane and mechanical Keyboard in detail. **[5]**

Q5) Write a short notes on any Four of the following : **[4 × 2.5 = 10]**

a) Types of memories.

b) Branch prediction and folding.

c) Bitwise operators used in python.

d) Operating systems used for Raspberry Pi.

e) CPU pipeling stages.

f) Bluetooth Module.

▽▽▽▽

Total No. of Questions : 5]

SEAT No. :

P5147

[Total No. of Pages : 2

[5823]-405

S.Y. B.Sc. (Computer Science)

ELECTRONICS

ELC-241 : Embedded System Design

(2019 Pattern) (Semester - IV) (Paper - I)

Time : 2 Hours] *[Max. Marks : 35*

Instructions to the candidates:

1) *Q.1 is compulsory.*
2) *Solve any Three questions from Q.2 to Q.5.*
3) *Figures to the right indicates full marks.*
4) *Neat diagrams must be drawn wherever necessary.*
5) *Use of calculator is allowed.*

Q1) Attempt any five. **[5 × 1 = 5]**

a) Define an Embedded system.

b) Which processor is used in Raspberry pi.

c) What is the difference between Lists and Tuples?

d) What is the use of 'time' function?

e) How physical numbering scheme is selected on Raspberry pi?

f) Write the use of GSM module.

Q2) Answer the following : **[2 × 5 = 10]**

a) i) Explain following functions of Python **[3]**

I) eval (str)

II) GPIO.input (channel)

III) GPIO-setup (channel, GPIO.OUT)

ii) Write Python program for LED interfacing to Raspberry pi**[2]**

b) Explain any two types of SBC in detail. List the advantages and disadvantages of SBC. **[5]**

P.T.O.

Q3) Answer the following : **[2 × 5 = 10]**

a) i) Write the functions of following blocks of Raspberry pi **[5]**

I) HDMI

II) Micro SD Card

III) USB ports

IV) Ethernet

V) Processor

b) List different types of operators used in Python. Explain any three operators in detail. **[5]**

Q4) Answer the following : **[2 × 5 = 10]**

a) Draw the neat diagram of architecture of SOC. Explain any three blocks of it. **[5]**

b) Explain different types of Network Access devices used for SBC along with their features. **[5]**

Q5) Write a short note on <u>any four</u> of the following : **[4 × 2.5 = 10]**

a) Raspberry pi and Beagle Bone SBC.

b) ARM 1176JZF-S.

c) GPIO functions.

d) Standard data types used in Python.

e) 'elif' statement.

f) Python Dictionary.