Total No. of Printed Pages : 2

SUBJECT CODE NO : H-8226
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE/IT) (CGPA) (Sem-I)
Examination November / December – 2023
Elective-I Internet of Things

[Time : 3:00 Hours] **[Max. Marks : 80]**

Please check whether you have got the right question paper.

N. B 1) Use of non programmable calculator is allowed.
2) Figures to the right indicate full marks.
3) Q. 1 and Q. 6 are compulsory.
4) Attempt any two questions from the remaining questions from each section.
5) Assume suitable data if required

SETION A

Q1 Answer the Questions **10M**

(a) Differentiate with Microprocessor and Micro-controller.

(b) What are lot system Blocks.

Q2 (a) Explain loTWF architecture. **8M**

(b) Explain 6LoWPAN Protocol in details. **7M**

Q3 (a) Explain need for optimizing IP for IOT **8M**

(b) Explain working of application layer protocol MQIT **7M**

Q4 (a) Explain two way communication protocol used for loT. **7M**

(b) Explain any four Sensors used in loT applications. **8M**

Q5 Write short note on following **15M**

1. Arduino Board IDE programming
2. SOAP N/w protocol
3. loT platforms and Integration tools.

SECTION B

Q6 Answer the Questions **10M**

(a) Explain in detail criteria for actuator selection.

(b) Explain various sensors used for Smart Farming IoT applications.

Q7 (a) Explain use of TCP and IMP **8M**

(b) How dynamic data is handled by IOT applications. **7M**

Q8 (a) Explain cloud storage models and communication API's. **8M**

(b) Explain Python web application framework with suitable diagram. **7M**

Q9 (a) Explain SkyNet IoT messaging platform with suitable Diagram. **8M**

(b) Explain Traffic Light application of IoT. **7M**

Q10 (a) What is WAMP-AutoBahn library? Explain with proper Example. **8M**

(b) Explain Home security application in detail. **7M**

Total No. of Printed Pages: 02

SUBJECT CODE NO: - H-8226
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE/IT) (Sem-I)
Examination May / June - 2023
Elective-I Internet of Things

[Time: 03:00 Hours] **[Max. Marks: 80]**

Please check whether you have got the right question paper.

N. B
1) Use of non-programmable calculator is allowed.
2) Figures to the right indicate full marks.
3) Q. 1 and Q. 6 are compulsory.
4) Attempt any two questions from the remaining questions from each section.
5) Assume suitable data if required

SECTION-A

Q1 Answer the Questions 10
a) Write down uses and applications of IOT.
b) Differentiate between Arduino and Raspberry pi.

Q2 a) Explain loTWF architecture. 08
b) Explain light weight M2M communication Protocol. 07

Q3 a) Explain 6Lo protocol in detail. 08
b) Explain working of Application Layer protocol CoAP. 07

Q4 a) Explain Web Socket Application Protocol. 08
b) Explain any four Sensors used in loT applications. 07

Q5 a) Write short note on following 15
1. Raspberry Pi and python programming
2. System on Chips
3. IoT platforms and Integration tools.

SECTION-B

Q6 Answer the Questions 10
a) Explain in detail criteria for sensor selection.
b) Explain various sensors used for Smart Farming IoT applications.

Q7 a) Explain exchanging messages in IoT applications. 08
b) Explain in detail about handling web pages with dynamic data in Iot. 07

Q8	a)	How cloud storage is helpful for IoT Applications.	08
	b)	Explain Python web application framework with suitable diagram.	07
Q9	a)	Explain AWS for IoT.	08
	b)	Explain Home Automation application of IoT.	07
Q10	a)	What is WAMP-AutoBahn library? Explain with proper Example.	08
	b)	Explain Home security application in detail.	07

Total No. of Printed Pages: 2

SUBJECT CODE NO: - 8226

FACULTY OF SCIENCE AND TECHNOLOGY

B.E. (CSE/IT) [CGPA] (Sem-I)

Examination January-2023

Elective-I Internet of Things

[Time: 3:00 Hours] **[Max. Marks: 80]**

Please check whether you have got the right question paper.

N. B 1) Question no.01 and 06 are compulsory.

2) Attempt any two from remaining questions from each sections.

SECTION A

Q1 Attempt any two 8×2=16M

a) Explain with neat diagram request-response model of COAP.

b) Explain IOT protocol stack utilizing 6LOWPAN.

c) Explain features, architecture, application of XMPP.

Q2 a) With neat diagram, explain IOTWF reference IOT architecture. 07M

b) Differentiate cloud and for computing. 05M

Q3 a) Write a program for LED blinking with interval of five seconds. Use Raspberry pi. Explain python Libraries used. Show connection and sample output. 07M

b) Explain any five applications of micro-controller. 05M

Q4 a) Write short note on system-on-Chip. 06M

b) Explain building blocks of IOT. 06M

Q5 a) Write short note on JSON. 06M

b) Compare System on chip vs microcontroller. 06M

SECTION B

Q6 Attempt any one 10×1=10M

a) For smart home system
   i) Draw block diagram & explain
   ii) Use case diagram
   iii) Functional and non-functional requirements

b) Design an IOT system, which serves web pages with monitoring and controlling IOT devices.

Q7 a) Write socket program for message Exchange using UDP. 08M

b) List and explain criterial for actuator selection. 07M

Q8 a) Write short note on Python web application frameworks. 07M

b) Compare block storage vs object storage model. 08M

Q9 a) Draw block diagram and explain smart traffic light system. 08M

b) List functional & non-functional requirements and draw use case diagram for home security system. 07M

Q10 a) Write Ghost note on Autobahn. 07M

b) What is functional and non-functional requirements? List and explain functional and non- functional requirements for smart traffic light system. 08M

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-471
FACULTY OF SCIENCE & TECHNOLOGY
B.E. (CSE/IT)
Elective – I : Internet of things
(Revised)

[Time: Three Hours] **[Max. Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q.No.1 and Q.No.6 are compulsory.
ii) Attempt any two questions from the remaining in each section.

Section – A

Q.1	Solve any two		
	i)	Characteristics of IoT.	05
	ii)	Zigbee	05
	iii)	Data Distribution Service (DDS)	05
Q.2	a)	Explain architecture and building blocks of IoT.	08
	b)	Explain RFID in details.	07
Q.3	a)	Differentiate TCP/IP Vs IoT protocol stack.	08
	b)	Explain cloud computing in IoT.	07
Q.4	a)	Explain XMPP protocol in details.	08
	b)	Explain in details Big data.	07
Q.5	a)	Explain wired and wireless connectivity for IoT.	08
	b)	Explain challenges in WSN.	07

Section – B

Q.6	Solve any two		
	i)	Pillars of Web	05
	ii)	Need of IoT Security	05
	iii)	Smart Grid	05
Q.7	a)	Explain architecture of WoT.	08
	b)	Explain Security challenges for IoT.	07
Q.8	a)	Explain cloud of things architecture.	08
	b)	Explain agility in collaborative production environment.	07
Q.9	a)	Explain clustering principal of IoT.	08
	b)	Explain basic component of sensor network.	07
Q.10	a)	Explain smart health care application of IoT.	08
	b)	Explain agriculture – smart grid application of IoT.	07