Reg. No.



MANIPAL INSTITUTE OF TECHNOLOGY

(A constituent unit of MAHE, Manipal)

VII SEMESTER B.TECH. (IT/CCE)

END SEM EXAMINATIONS, DECEMBER 2021

SUBJECT: PROGRAM ELECTIVE-VII INTERNET OF THINGS [ICT 4050]

REVISED CREDIT SYSTEM (22/12/2021)

PART B

Time: 75 Minutes

MAX. MARKS: 20

Instructions to Candidates:

- ✤ Answer ALL the questions.
- ✤ Missing data, if any, may be suitably assumed.

1A.	With the help of a neat diagram explain IoT reference model.	5	CLO3	AHEP:1,2,3	BL:2
1B.	Write and explain a python program to gradually decrease and then increase the LED brightness every 0.1second using software PWM signal. Assume that Raspberry Pi Pin3/GPIO2 is configured as output pin and frequency of PWM is set to 500Hz.	3	CLO2	AHEP:1,2,3	BL:2
1C.	Explain any four vulnerabilities in smart grid.	2	CLO5	AHEP:1,4	BL:2
2A.	Consider the diagram Figure Q2A, represents a feed-forward neural network with one hidden layer. A weight on connection between nodes i and j is denoted by wij, such as w13 is the weight on the connection between nodes 1 and 3. The following table lists all the weights in the network. $ \begin{array}{c} 1 \\ 2 \\ 2 \\ 4 \\ \hline $	5	CLO:4	AHEP: 1, 2, 3	BL:3

	Each of the nodes 3, 4, 5 and 6 uses the following activation function: $\psi(v)=1$ if $v\geq 0$ otherwise 0 Here v denotes the weighted sum of a node. Each of the input nodes (1and 2) can only receive binary values (either 0 or 1). Calculate the output of the network (y5 and y6) for each of the input patterns: $\frac{Pattern P1 P2 P3 P4}{Node 1 0 1 0 1}$										
2B.	List and explain the key identifiers of RPL network.							3	CLO: 3	AHEP:1,2,3	BL:2
2C.	Differentiate between the structured and unstructured data.							2	CLO:4	AHEP: 1, 2, 3	BL:4