BE | Sem- VII | INFT | C-2019 | Dec-2023

Time : [3 hrs] **[80 Marks]**

Note : 1. Question 1 is compulsory

2. Answer any three out of remaining questions

3. Assume suitable data where required

Q1	Solve any 4		
	a)	Explain ZigBee in brief.	5
	b)	Explain the Need of lightweight new communications protocols for IoT.	5
	c)	Explain data retention strategy.	5
	d)	Write a short note on I-IoT	5
	e)	Explain functional blocks of IoT	5
Q2	a)	Elaborate in detail the strategies to organize Data for IoT Analytics.	10
	b)	Illustrate the role of Data refineries in preventing data lakes to turn into data swamps	10
Q3	a)	Describe the communication system and protocols involved in long range communication system of IoT	10
	b)	With neat diagram, elaborate briefly the simplified 3 layered IoT architecture.	10
Q4	a)	Differentiate and give Hierarchy between Edge, Fog, and Cloud computing	10
	b)	Consider Smart Irrigation system. Elaborate its working with block diagram and list down the different types of sensors and actuators required during the deployment scenario.	10
Q5	a)	Elaborate MQTT with its working in details and two advantages over COAP.	10
	b)	Illustrate 3 methods for effective Data Visualization	10
Q6	a)	Define sensor, actuators and their role and classifications in brief.	10
	b)	Explain the following access technologies with applications area of each 1) IEEE 802.15.4 2) RFID	10

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G.P. Code
38114

BE Sem VII | IT | Dec 2023 | C-2019

TIME:03 HRS MAX MARKS:80

N.B. 1. Question No 1 is compulsory.
2. Solve any **three** questions out of the remaining five questions.
3. Assume suitable data if necessary.
4. Figures to the right indicate marks.

Q 1. Solve any **four** out of five. (4*5=20)
a. Explain BIBA and Bell La Padula Model.
b. What is transient and resident Virus? Explain Trojan horse, logic bomb, trapdoor.
c. Which are the different types of mobile security threats?
d. Discuss password policy.
e. Write about types of firewall.

Q 2. a) In which security policy users do not have the authority to override the policies and it totally controlled centrally by the security policy administrator? Justify with example. (10)
b) State the four phases of an incident response? Describe them. (10)

Q 3. a) Explain in detail File protection mechanism. (10)
b) Describe i) Threats in Mobile security ii) VPN Security (10)

Q 4. a) Discuss cross site scripting and buffer overflow attack. (10)
b) Explain Wireless Intrusion detection system. (10)

Q 5. a)What is Cross-Site Request Forgery attack? How to prevent it? (10)
b) Describe benefits of Cloud security as a service model. (10)

Q 6. a). Discuss Trust Boundaries and IAM. (10)
b) Explain the following terms (10)
i) Account Harvesting
ii) SET
iii) SSH
iv) Firewalls
v) Email attacks.

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B.E & Sem VII | LMFT | C-2019 | DEC-2023

Max. Marks: 80

Duration: 3hr.

Instructions:
(1) Question one is Compulsory.
(2) Assume suitable data wherever required but justify it.
(3) Solve any THREE from Question No. 2 to 6.
(4) Figure to the right indicate full marks.

Question No.			Marks
Q.1	(a)	From below given probability distribution find **P (¬ Cavity | Toothache)**	5

	Toothache		¬ Toothache	
	Catch	¬ Catch	Catch	¬ Catch
Cavity	0.108	0.012	0.072	0.008
¬ Cavity	0.016	0.064	0.144	0.576

	(b)	Define defuzzification and State the necessity of the defuzzification process.	5
	(c)	Implement AND function using Mc-Culloch-Pitts neuron. (take binary data) ?	5
	(d)	What is the significance of ROC curves?	5
Q.2	(a)	State Ensemble methods and describe anyone.	10
	(b)	Illustrate usage of taxonomies and ontologies for knowledge representation in cognitive system.	10
Q.3	(a)	Explain the components of CNN architecture.	10
	(b)	Perform a case study on book recommendation system (data science based)	10
Q.4	(a)	Describe the Properties of Fuzzy Sets with an example.	10
	(b)	Illustrate inferencing in Bayesian Belief Network with an example.	10
Q.5	(a)	List and explain the design principles of Cognitive System.	10
	(b)	State and elaborate the applications of deep learning.	10
Q.6	(a)	Calculate Accuracy, Precision, Recall, Sensitivity and Specificity for the following example.	10

Actual Class / Predicted Class	Buys_Computer=yes	Buys_Computer =no
Buys_Computer =yes	6954	46
Buys_Computer =no	412	2588

	(b)	Write a short note on- Data Science for Multi modal applications.	10

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Paper / Subject Code: 42678 / AR - VR (DLOC - IV)

BE | Sem-VII | INFT | C-2019 | Dec-2023

(3 Hours) [Total Marks : 80]

N.B.: (1) **Question No. 1 is compulsory.**
(2) Write any three questions out of remaining.
(3) Assume suitable data if required.
(4) Draw suitable diagrams wherever necessary.

1 (a) Write the algorithm steps of Mixed Reality **5**

(b) What are all Input devices used in VR? How does game controller, joysticks and gloves devices are used in VR **5**

(c) Compare LCD and OLED display devices in ARVR. **5**

(d) Discuss 3D rotation with example. **5**

2 (a) How does homogenous coordinate system simplify geometric transformations in computer graphics. What are the merits of using homogeneous coordinates. Write down the Homogeneous Transformation matrix for scaling, Rotation and Translation with different axis. **10**

(b) Explain in detail calibration and Registration with example. List Advantages of it. **10**

3 (a) List the Requirement of AR Authoring. Explain Elements of Authoring. **10**

(b) Explain Plug in approaches and Web technology in ARVR and list applications of it. **10**

4 a) Explain the terms tangible interfaces, virtual user interfaces on real surfaces, Multiview interfaces with respect to ARVR. **10**

(b) Discuss in detail : multimodal display, optical tracking, Natural Feature Tracking by Detection. **10**

5 (a) Explain the terms Sensor fusion, outdoor tracking, multiple camera infrared tracking **10**

(b) Define Virtual reality. Explain the components of it with diagram **10**

6 Write a short note on - (Solve any two). **20**

(a) VRML

(b) Frame Rate and Display

(c) Gyroscope and accelerometer

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Q.P.code
41866