MCA III semester Question Paper

21P31F0054

Code No: MC2031/R20

ACET

MCA III Semester Regular/Supplementary Examinations, February-2023 2023

MACHINE LEARNING WITH PYTHON

Time: 3 Hours Max. Marks: 70

Answer any FIVE Questions One Question From Each Unit
All Questions Carry Equal Marks

UNIT-I

1.	a)	Discuss about installing scikit-learn.	7M
	b)	Discuss any four examples of machine learning applications.	7M
		(OR)	
2.	a)	Discuss about logical models and concept learning.	7M
	b)	Discuss about matplotlib with example?	7M

UNIT-II

3.	a)	What do you mean by gain and entropy? How it is used to build the decision tree?	7M
	b)	Explain k-Nearest Neighbors algorithm with example.	7M
		(OR)	
4.	a)	Explain Regression with example.	7M
	b)	Discuss about ability of classifier to provide Uncertainty Estimates of prediction.	7M

UNIT-III

5.	a)	Explain how to deal with missing data.	7M
	b)	Discuss about sparse solutions with L1 regularization.	7M
		(OR)	
6.	a)	Explain about PCA inscikit-learn.	7M
	b)	Explain about the inner workings of LDA.	7M

UNIT-IV

7.	a)	Explain the benefits of cross validation.	7M
	b)	Discuss how boosting works.	7M
		(OR)	
8.	a)	Discuss about diagnosing bias and variance problems.	7M
	b)	Explain about optimizing the precision and recall of a classification model.	7M

UNIT-V

9.	a)	Discuss about stop words.	7M
	b)	Explain about Stemming and Lemmatization.	7M
		(OR)	
10.	a)	Discuss about Probabilistic Modeling.	7M
	b)	Write about Investigating Model Coefficients.	7M

*****

21P31F0054

Code No: MC2033/R20

MCA III Semester Regular/Supplementary Examinations, February-2023

WEB TECHNOLOGIES

Time: 3 Hours | Max. Marks: 70

Answer any FIVE Questions One Question From Each Unit
All Questions Carry Equal Marks

UNIT-I

1.	a)	Write about HTML Document structure.	6M
	b)	Write about the following (i)Web Browser (ii)URL (iii)WWW (iv)Web Server	8M
		(OR)	
2.	a)	Explain HTML text formatting tags with example.	7M
	b)	Define frame. Create a HTML page that displays multiple frames in a window.	7M

UNIT-II

3.	a)	Briefly explain the purpose of XML Processor.	7M
	b)	What is Document Type Definition(DTD)? How to declare attributes, entities, elements.	7M
		(OR)	
4.	a)	Write about DOM Parser.	7M
	b)	Explain XSLT style sheet with example.	7M

UNIT-III

5.	a)	How to read servelet parameters? Explain with Example.	7M
	b)	Explain about GET and POST methods.	7M
		(OR)	
6.	a)	Write about servelet life cycle.	7M
	b)	Explain how to connect to database using JDBC.	7M

UNIT-IV

7.	a)	What is client-side scripting? Write a JavaScript program which accepts Nas input and print first N even numbers.	7M
	b)	What are the elements of JSP page? Explain.	7M
		(OR)	
8.	a)	What is an event? What is the difference between onclick and onsubmit?	7M
	b)	How to use beans in JSP pages? Explain.	7M

UNIT-V

9.	a)	What is the significance of cookies in web? How can a cookie be created and destroyed in PHP?	7M
	b)	How the result set of Mysql be handled in PHP? Explain.	7M
		(OR)	
10.	a)	Write a PHP script to count the instances of words in string.	7M
	b)	Discuss about file handling in PHP.	7M

*****

Code No: MIC2034/R20

MCA III Semester Regular/Supplementary Examinations, February-2023

CRYPTOGRAPHY AND NETWORK SECURITY

Time: 3 Hours | Max. Marks: 70

Answer any FIVE Questions One Question From Each Unit
All Questions Carry Equal Marks

UNIT-I

1.	a)	Explain various categories of security services.	7M
	b)	Describe how substitutions will be performed in AES encryption.	7M
		(OR)	
2.	a)	Discuss security mechanisms in detail.	7M
	b)	Explain about differential and linear crypt analysis.	7M

UNIT-II

3.	a)	State and prove Fermat's little theorem.	7M
	b)	Explain Rabin crypto system.	7M
		(OR)	
4.	a)	Write the pseudo code for trial-division factorization.	7M
	b)	In RSA, given p=19, q=23, and e=3. Find n, Φ(n), and d.	7M

UNIT-III

5.	a)	Describe the operation of SHA-3.	7M
	b)	Explain Elgamal digital signature scheme.	7M
		(OR)	
6.	a)	Discuss the applications of cryptographic hash functions.	7M
	b)	Explain Schnorr digital signature scheme.	7M

UNIT-IV

7.	a)	Explain the symmetric key distribution using Diffie- Hellman protocol.	7M
	b)	Discuss remote user-authentication using symmetric encryption.	7M
		(OR)	
8.	a)	Draw the format of x.509 certificate and explain the fields in it.	7M
	b)	Explain the operation of Kerberos version 4.	7M

UNIT-V

9.	a)	Name seven types of packets used in PGP and explain their purpose.	7M
	b)	Define IKE and explain why it is needed in IPSEC.	7M
		(OR)	
10.	a)	Name all content types defined by CMS and explain their purpose.	7M
	b)	Compare IP-Security in transport mode and tunnel mode.	7M

*****

Code No: MC2032/R20

MCA III Semester Regular/Supplementary Examinations, February-2023

INTERNET OF THINGS

Time: 3 Hours | Max. Marks: 70

Answer any FIVE Questions One Question From Each Unit
All Questions Carry Equal Marks

UNIT-I

1.	a)	Correlate M2M architectural domains with IoT architecture levels.	7M
	b)	Write about the open-source software components for developing an IoT application.	7M
		(OR)	
2.	a)	List out the features of HTTP and explain.	7M
	b)	What are the major Privacy and Security Issues in case of Internet Of Things (IoT)? Explain.	7M

UNIT-II

3.	a)	How gateways are used for data management in IOT? Explain	7M
	b)	Why is an additional layer for application-support required in IoT/M2M applications? Discuss.	7M
		(OR)	
4.	a)	What are the capabilities of ETSI M2M domains? Give details.	7M
	b)	Why is a gateway necessary in a communication framework for IoT and M2M applications and services? Explain.	7M

UNIT-III

5.	a)	Write about Lightweight Machine-to-Machine Communication Protocol	7M
	b)	Discuss about Extensible Messaging and Presence Protocol.	7M
		(OR)	
6.	a)	What are the functions of DTLS?	6M
	b)	Write short notes on message communication protocols for connected devices.	8M

UNIT-IV

7.	a)	Discuss the role of Data Analytics in Internet of Things (IoT).	7M
	b)	Describe different types of transaction processing on databases, streaming data and events.	7M
		(OR)	
8.	a)	How does a data acquisition system work? Explain.	7M
	b)	Write about data organizing, transactions and business processes.	7M

UNIT-V

9.	a)	Write about IoT Cloud-based Data Collection, Storage, Computing using Xively platform.	7M
	b)	Describe the Sensor Network Technology in IoT.	7M
		(OR)	
10.	a)	List the salient features in Nimbits cloud platform.	7M
	b)	Explain the design challenges of WSN security, QoS and configuring of the nodes.	7M

*****

Code No: MC2035B/R20

MCA III Semester Regular/Supplementary Examinations, February-2023

SOFTWARE PROJECT MANAGEMENT

Time: 3 Hours | Max. Marks: 70

Answer any FIVE Questions One Question From Each Unit
All Questions Carry Equal Marks

		UNIT-I	
1.	a)	Describe the three generations of software economics.	7M
	b)	Briefly explain pragmatic software cost estimation.	7M
		(OR)	
2.	a)	Describe the progress profile of a conventional software project.	7M
	b)	Explain the principles of modern software management.	7M
		UNIT-II	
3.	a)	What are the seven workflows in the Life Cycle? Elaborately discuss them.	7M
	b)	What are the activities that are essential in Inception and Elaboration phases? Explain.	7M
		(OR)	
4.	a)	Explain in detail about test artifacts.	7M
	b)	Explain the milestone that occurs at the end of the inception phase.	7M
		UNIT-III	
5.	a)	What are iteration workflows? Explain.	7M
	b)	Write short notes on cost and schedule estimating.	7M
		(OR)	
6.	a)	Describe technical perspective of model-based software architectures.	7M
	b)	What are the advantages and disadvantages of traditional Work Breakdown Structures?	7M
		UNIT-IV	
7.	a)	What are the basic characteristics of a good metric? Explain.	7M
	b)	Explain metrics derivation.	7M
		(OR)	
8.	a)	Explain how process automation and change management are critical to an iterative process and how does metric automation become crucial to effective project control.	7M
	b)	Discuss about quality indicators.	7M
		UNIT-V	
9.	a)	Explain about Fundamentals of DevOps.	7M
	b)	Discuss about Agiling capabilities.	7M
		(OR)	
10.	a)	Discuss about DevOps adoption in projects.	7M
	b)	Write about agile methodology.	7M

*****