

H.T.No: 21A91F0015

Course Code: 203MC3T11

ADITYA ENGINEERING COLLEGE (A)

MCA – III Semester End Examinations Regular & Supplementary (AR20) – FEB 2023

MACHINE LEARNING WITH PYTHON

Max. Marks: 70

Time: 3 hours

Answer ONE question from each unit

All Questions Carry Equal Marks

All parts of the questions must be answered at one place only

UNIT – I

- 1 a Explain about different packages in Python? K1 CO1 [7M]
 b Explain the Uses of matplotlib and scikit-learn for machine learning? K1 CO1 [7M]

OR

- 2 a What is Machine Learning? Explain types of Machine Learning. K2 CO1 [7M]
 b Explain different applications of Machine Learning? K2 CO1 [7M]

UNIT – II

- 3 a Demonstrate k- Nearest Neighbors with Example? K2 CO2 [7M]
 b Explain different types of Regression Models? K1 CO2 [7M]

OR

- 4 a Explain about ensembles of Decision Trees? K2 CO2 [7M]
 b Discuss about Kernelized Support Vector Machines with example? K3 CO2 [7M]

UNIT – III

- 5 a What is Dataset? Explain how to partitioning a dataset into training and test dataset? K3 CO3 [7M]
 b Interpret how to assess feature importance with random forests? K2 CO3 [7M]

OR

- 6 a Explain about linear discriminated Analysis? K3 CO3 [7M]
 b How to deal with Missing data and Categorical Data? K2 CO3 [7M]

UNIT – IV

- 7 a Explain the process of using k-fold cross validation to assess model performance? K2 CO4 [7M]
 b Discuss about leveraging weak learners via adaptive boosting? K2 CO4 [7M]

OR

- 8 a Define bagging. And explain how to build bagging for an ensemble classifier? K1 CO4 [7M]
 b List the Debugging Algorithms used for Model Evaluation? K2 CO4 [7M]

UNIT – V

- 9 a Explain about Advanced Tokenization, Stemming and Lemmatization K2 CO5 [7M]
 b How to Rescale the Data with tf-idf? Explain? K2 CO5 [7M]

OR

- 10 a Explain about Building own Estimators using transform(),fit() and constructor of transform class K1 CO5 [7M]
 b Discuss about Ranking? K2 CO5 [7M]



H.T.No: 21A91F0015

Course Code: 203MC3T12

ADITYA ENGINEERING COLLEGE (A)

MCA – III Semester End Examinations Regular & Supplementary (AR20) – FEB 2023

INTERNET OF THINGS (Master of Computer Applications)

Time: 3 hours

Max. Marks: 70

Answer ONE question from each unit

All Questions Carry Equal Marks

All parts of the questions must be answered at one place only

UNIT – I

- 1 a Explain the various IoT applications. K1 CO1 [6M]
b Explain the M2M communication with a neat architecture K1 CO2 [6M]

OR

- 2 a Describe the ITU-T architecture for M2M/IoT with a neat diagram. K1 CO2 [6M]
b What are the features of HTTP AND HTTPS protocols K1 CO3 [6M]

UNIT – II

- 3 a Draw and explain business model canvas with 9 building blocks K1 CO2 [6M]
b Explain the functional layers and capabilities of an IoT solution with a neat diagram. K2 CO1 [6M]

OR

- 4 a Explain Modified OSI Stack for the IoT/M2M Systems. K2 CO2 [6M]
b Explain how gateways are used for data management, local applications and device management in IoT. K1 CO2 [6M]

UNIT – III

- 5 a Write about the basic operations available in CoAP protocol. K1 CO3 [6M]
b Explain about the MQTT protocol. K3 CO3 [6M]

OR

- 6 a Explain Smart Firewall Device K3 CO3 [6M]
b How do IoT devices communicate? Explain with suitable diagrams K3 CO3 [6M]

UNIT – IV

- 7 a Describe the secure authentication and access control in constrained devices. K1 CO4 [6M]
b Explain the data acquiring and storage mechanism for IoT. K1 CO4 [6M]

OR

- 8 a How does a data acquisition system work? Explain. K1 CO4 [6M]
b Express how to organizing and analytics with SQL in IoT/M2M? K1 CO4 [6M]

UNIT – V

- 9 a How to use a service platform while developing IoT applications? Explain with respective to Xively cloud service. K4 CO4 [6M]
b What is wireless sensor network? Discuss the benefits and limitations of wireless sensor networks. K1 CO5 [6M]

OR

- 10 a Describe different Cloud Service Models. K1 CO4 [6M]
b Explain about the features of Nimbits that helps in developing IoT applications. K1 CO5 [6M]



H.T.No:

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Course Code: 203MC3T13

ADITYA ENGINEERING COLLEGE (A)

MCA – III Semester End Examinations Regular & Supplementary (AR20) – FEB 2023

WEB TECHNOLOGIES (Master of Computer Applications)

Time: 3 hours

Max. Marks: 70

Answer ONE question from each unit

All Questions Carry Equal Marks

All parts of the questions must be answered at one place only

UNIT – I

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|----|---|--|----|-----|------|
| 1 | a | What is WWW, URL? Explain Web Browsers with some examples. | K1 | CO1 | [7M] |
| | b | Explain about History of Internet and Protocols of Internet | K2 | CO1 | [7M] |
| OR | | | | | |
| 2. | a | Define CSS. Explain inline, internal, and external style sheets with examples. | K1 | CO1 | [7M] |
| | b | Classify about different list tags in HTML? | K2 | CO1 | [7M] |

UNIT – II

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|----|---|---|----|-----|------|
| 3 | a | What is XML Element? Explain various rules while writing XML. | K1 | CO2 | [7M] |
| | b | Explain the various types of XML schema data types and their applications. | K2 | CO2 | [7M] |
| OR | | | | | |
| 4 | a | Explain document type definition (DTD)? Describe the approach to declare elements, entities and attributes. | K1 | CO2 | [7M] |
| | b | What are the XML namespaces and how are they declared? | K2 | CO2 | [7M] |

UNIT – III

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|----|---|--|----|-----|------|
| 5. | a | Develop the life cycle of Servlet with a sample servlet example | K2 | CO3 | [7M] |
| | b | What are the different types of Drivers in JDBC. Explain their functionalities in brief. | K3 | CO3 | [7M] |
| OR | | | | | |
| 6 | a | Examine the Servlet API. | K2 | CO3 | [7M] |
| | b | Identify the advantage and disadvantages of Common Gateway Interface and Servlet. | K1 | CO3 | [7M] |

UNIT – IV

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|----|---|--|----|-----|------|
| 7 | a | Summarize the features of JSP Declarations. | K2 | CO4 | [7M] |
| | b | Explain in detail how to access a database from a JSP? | K3 | CO4 | [7M] |
| OR | | | | | |
| 8 | a | Explain in detail of how to use Java Beans in JSP pages with suitable example. | K2 | CO4 | [7M] |
| | b | List out how to declare and use variables in JavaScript? | K2 | CO4 | [7M] |

UNIT – V

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|----|---|--|----|-----|------|
| 9. | a | Explain how PHP variables are used with examples? | K1 | CO5 | [7M] |
| | b | What are cookies? How can you create, access and delete a cookie in PHP with the help of an example. | K2 | CO5 | [7M] |
| OR | | | | | |
| 10 | a | Discuss various types of control statements in PHP. | K2 | CO5 | [7M] |
| | b | Explain about how to connect MYSQL data base and execute select query with an example. | K3 | CO5 | [7M] |




H.T.No: 21A91F0015

Course Code: 203MC3T14

ADITYA ENGINEERING COLLEGE (A)

MCA – III Semester End Examinations Regular & Supplementary (AR20) – FEB 2023

CRYPTOGRAPHY AND NETWORK SECURITY (Master of Computer Applications)

Time: 3 hours

Max. Marks: 70

Answer ONE question from each unit

All Questions Carry Equal Marks

All parts of the questions must be answered at one place only

UNIT – I

- 1 a Briefly explain the security services and mechanisms defined for network security. K2 CO1 [8M]
b What are Security Goals?. Explain. K2 CO1 [6M]
- 2 Illustrate Data Encryption Standard. OR K3 CO2 [14M]

UNIT – II

- 3 Explain Elliptic curve cryptography algorithm for encryption and decryption. K2 CO3 [14M]
- 4 Explain Rabin Cryptosystem in detail. OR K2 CO3 [14M]

UNIT – III

- 5 a Explain Schnorr Digital Signature in detail. K2 CO4 [8M]
b Write briefly about Hash Functions Based on Cipher Block Chaining. K2 CO4 [6M]
- 6 a Explain NIST Digital Signature Algorithm. OR K2 CO4 [7M]
b Explain about SHA-3 Algorithm. K2 CO4 [7M]

UNIT – IV

- 7 Draw a neat sketch of X.509 Certificate Format and its fields in detail. K2 CO4 [14M]
- 8 a Write Key Distribution Scenario for asymmetric key distribution in detail. OR K1 CO4 [7M]
b Write a short note on decentralized key control. K1 CO4 [7M]

UNIT – V

- 9 a Explain Internet Mail Architecture. K2 CO5 [7M]
b Describe E-Mail Threats. K1 CO5 [7M]
- 10 a Write a short note on IP Security Policy. OR K1 CO6 [7M]
b Write a short note on Security Payload Encapsulation. K1 CO6 [7M]



H.T.No: 21A91F0015

Course Code: 203MC3E07

ADITYA ENGINEERING COLLEGE (A)

MCA – III Semester End Examinations Regular & Supplementary (AR20) – FEB 2023

SOFTWARE PROJECT MANAGEMENT

Time: 3 hours

Max. Marks: 70

Answer ONE question from each unit

All Questions Carry Equal Marks (5 x 14 = 70M)

All parts of the questions must be answered at one place only

UNIT – I

- 1 a Explain in brief about pragmatic software cost estimation. K2 CO1 [7M]
b Discuss about Software Economics. K3 CO1 [7M]

OR

- 2 a Discuss about the principles of conventional software Engineering. K1 CO1 [7M]
b Explain about Improving Team Effectiveness. K1 CO1 [7M]

UNIT – II

- 3 a Explain about Programmatic Artifacts. K2 CO2 [7M]
b Distinguish between Engineering and Production stages. K2 CO2 [7M]

OR

- 4 a Explain in brief about the various Artifact sets. K2 CO2 [7M]
b List the Difference between Inception and Elaboration. K3 CO2 [7M]

UNIT – III

- 5 a Explain Iteration workflow with a neat diagram. K2 CO3 [7M]
b Discuss about Work Break Down Structures. K2 CO3 [7M]

OR

- 6 a Explain about Cost and Schedule Estimation. K2 CO3 [7M]
b Explain in brief about Checkpoints of the Process with Major Milestones and Minor Milestones. K2 CO3 [7M]

UNIT – IV

- 7 a What are the Various process automation tools? Explain in brief. K1 CO4 [7M]
b Explain about Life Cycle Expectations. K2 CO4 [7M]

OR

- 8 a Discuss in detail about the seven core metrics. K2 CO4 [7M]
b Discuss about Quality Indicators. K2 CO4 [7M]

UNIT – V

- 9 a Discuss about Agile Methodology. K2 CO5 [7M]
b Discuss in detail about DevOps Architecture with a neat diagram. K2 CO5 [7M]

OR

- 10 a Explain DevOPS Delivery Pipe Line. K2 CO5 [7M]
b Explain about Tool stack implementation. K2 CO5 [7M]

