

PRIYADARSHINI COLLEGE OF ENGINEERING, NAGPUR

Department: Computer Technology

Semester: VII

Section: A and B

CAT-II (2023-24)

Subject : Cryptography and Network Security
Duration : 1.5Hrs

Subject Code : BTCT701T
Max. Marks : 35

Note:

- 1) All questions are compulsory.
- 2) All questions carry marks as indicated.

Questions

			Marks	CO	BL
Q.1	A I	Identify the value of $\varphi(221)$? a) 194 b) 192 c) 208 d) 113	1M	CO3	I
	II	Extended Euclid's algorithm is used for finding_____ a) GCD of two numbers b) GCD of more than three numbers c) LCM of two numbers d) Both a and c	1M	CO3	I
	B	Explain in detail about Euler's Totient function?	5M	CO3	II
	C	Illustrate the working RSA algorithm with suitable example.	7M	CO3	III

OR

Q.2	A I	A sender is employing public key cryptography to send a secret message to a receiver. Which one of the following statement is TRUE? a) Sender encrypts using receiver's public key b) Sender encrypts using his own public key c) Receiver decrypts using sender's public key d) Receiver decrypts using own public key	1M	CO3	I
	II	Which of the following is not public key Distribution means_____? a) Public key certificates b) Hashing Certificates c) Publicly available directories d) Public Key authority	1M	CO3	I
	B	In public key system using RSA you intercept the cipher text C = 10 sent to the user whose public key is e = 5, n = 35, what is the plaintext M?	5M	CO3	III
	C	Explain in detail about the working of Diffie-Hellman key exchange algorithm.	7M	CO3	II

Q.3	A I	Which of the following is not an element/field of the X.509 certificates? a) Issuer Name b) Serial Modifier c) Issuer unique Identifier d) Signature	1M	CO5	I
	II	Digital certificates are described using the _____ format. a) X.508 b) X.509 c) X.510 d) X.409	1M	CO5	I
	B	Explain MD5 Message Digest Algorithm.	5M	CO5	II
	C	Explain the Hash Functions and their Security.	7M	CO5	II

OR

Q.4 A I When a hash function is used to provide message authentication, the hash function value is referred to as _____

1M CO5 I

- a) key code
- b) message digest
- c) keyed hash function
- d) message key hash function

II Message authentication code is also known as _____

1M CO5 I

- a) key code
- b) tag
- c) keyed hash function
- d) message key hash function

B Explain the concept of Kerberos.

5M CO5 II

C Explain in detail about X.509 directory authentication service.

7M CO5 II

Q.5 A I A packet filter firewall filters at _____

1M CO6 I

- a) Physical Layer
- b) Data Link Layer
- c) Network Layer
- d) Application Layer

II What is the major drawback of anomaly detection IDS?

1M CO6 I

- a) These are very slow at detection
- b) It generates many false alarms
- c) It doesn't detect novel attacks
- d) None of the mentioned

B Explain Application Gateway firewall.

5M CO6 II

OR

Q.6 A I What are strengths of Network based IDS?

1M CO6 I

- a) Cost of ownership reduced
- b) Malicious intent detection
- c) Real time detection and response
- d) All of the mentioned

II Network layer firewall works as a _____

1M CO6 I

- a) Frame Filter
- b) Packet Filter
- c) Content Filter
- d) Virus Filter

B Explain in detail about SQL injection?

5M CO6 II

PRIYADARSHINI COLLEGE OF ENGINEERING, NAGPUR

Department: CT

Semester: VII

Section: A/B

CAT-II (2023-24)

Subject: Data Visualization

Duration: 1.5 Hrs

Subject Code: BTCT702T-3

Max. Marks: 35

Note:

- 1) All questions are compulsory.
- 2) All questions carry marks as indicated.

Q.No. Questions

Marks CO BL

1. a. i) Amongst which of the following is a correct syntax for panda's dataframe?
 a) Pandas.DataFrame(data, index, dtype, copy)
 b) ~~pandas.DataFrame(~~ data, index, columns, dtype, copy)
 c) pandas.DataFrame(data, index, dtype, copy)
 d) pandas.DataFrame(data, index, rows, dtype, copy)
- ii) What is a cell in Jupyter Notebook?
 a) A unit of code that can be executed b) A paragraph of narrative text
 c) A mathematical equation d) A visual representation of data
- b. What is a dictionary? Explain the method available in the dictionary.

1 3 1

1 3 1

5 3 2

OR

2. a. i) What is the difference between %matplotlib inline and %matplotlib notebook magic commands in Jupyter Notebook?
 a) %matplotlib inline displays static visualizations, while %matplotlib notebook displays interactive visualizations
 b) %matplotlib inline displays interactive visualizations, while %matplotlib notebook displays static visualizations
 c) %matplotlib inline is used for data manipulation, while %matplotlib notebook is used for data visualization
 d) There is no difference between %matplotlib inline and %matplotlib notebook
- ii) Which library is used to create visualizations in Jupyter Notebook?
 a) pandas b) matplotlib c) NumPy d) scikit-learn

1 3 2

1 3 2

- b. Compare the difference between Numpy and Pandas
3. a. i) Which method shows hierarchical data in a nested format?
 a) Treemaps b) Scatter plots c) Area charts d) Population pyramids

1 4 2

- ii) Which of the following is not a type of Matplotlib plot?
 a) Line plot b) Scatter plot c) Pie chart d) Bar chart

1 4 2

- b. How to manually add a legend with a color box on a Matplotlib figure?

5 4 3

- c. How to Generate a Waffle chart? write a script to plot a waffle chart.

7 4 4

*Assume data frame as follow- data ={'printer': ['Nokia', 'Samsung', 'canon', 'Epson', 'hp'], 'stock': [24, 12, 8, 15, 3]}

OR

4. a. i) Statement to plot a line chart for data stored in a DataFrame 'df' is _____
 a) df.plot(line) b) plot(df, line) c) df.plot(kind = <line=) d) None of the above

1 4 3

- b. ii) What is Visualization?

1 4 2

- a) It is the graphical representation of information and data
 b) It is the numerical representation of information and data
 c) It is the character representation of information and data
 d) None of the above

- b. Create a list of nested dictionaries into pandas dataframe.

5 4 4

- c. Explain the steps of Creating a Word Cloud in Python.

7 4 3

- 5 a. i) Which library is used to create statistical graphics in Python?
 a) Pandas b) Numpy c) Seaborn d) Matplotlib
 ii) Which of the following is NOT a type of plot available in Seaborn?
 a) Line plot b) Scatter plot c) Bar plot d) Tree plot
 b. Define following terms: i) Barplot, ii) Boxplot, iii) Stripplot
 c. How to create a Map with a Dataset? explain with their syntax and parameter use.
- OR
- 6 a. i) Which function is used to create a heatmap in Seaborn?
 a) sns.heatmap() b) sns.scatterplot() c) sns.lineplot() d) sns.barplot()
 ii) Which argument should be set to display percentage share of each pie on a pie chart?
 a) label b) autopct c) explode d) wedge
 b. i) What is Seaborn? ii) Different categories of plot in Seaborn.
 c. Difference between Matplotlib and Seaborn with examples.

PRIYADARSHINI COLLEGE OF ENGINEERING, NAGPUR
Department :- Computer Technology Semester :- VII Section :- A / B
Session:- 2023-2024 (ODD-SEM)
CAT- 2

Subject :- HCI
Duration : 1.5Hrs

Subject Code:- BTCT703T-3
Max Marks:- 35

QNo 1 Questions

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| I Impressing moving icons in a system design can be
A. appealing B. attractive C. distracting D.attentive | 1 CO3 I |
| II Subsystem of human machine processor that handles actions of system
is called
A. Cognitive System B. MotorSystem
C. Perceptual Syste D.Autonomic System | 1 CO3 I |
| III What is meant by GOMS? Give an example | 5 CO3 I |

OR

Q No 2

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| i Simple model of human interaction was proposed by
A.Stuart K. Card B.Thomas P. Moran C.Allen Newell D.Card, Moran
AndNewell | 1 CO3 I |
| ii A _____ can be added to your presentation and then used to go to
a variety of locations ---- for example, a web address, an e-mail address, a
custom show or document, just to name a few.
A. Menu link B. Hyperlink C. Toollink D. Slide link | 1 CO3 I |
| iii Describe in detail about hypert text,Multimedia,WWW? | 5 CO3 II |

Q No 3

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| i Genetically different population with the same physical features is known
as _____
A. Ecosystem B. Ecads C. Community D. Ecotype | 1 CO4 I |
| ii What is the parent class of all Activity widgets?
A. ViewGroup B. Layout C. View D. Widget | 1 CO4 I |
| iii Explain about the Elements of Mobile Design | 5 CO4 II |
| iv Give detail description about Mobile EcoSystem: | 7 CO4 II |

OR

Q.No 4

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| i Which of the following programming medium is used by MobileMe to
create the appearance of a desktop application inside a browser?
A. HTML B. DHTML C. Jquery D. All of the mentioned | 1 CO4 I |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|

- ii Which of the following mobile platform support hundreds of thousands of third-party applications? 1 CO4 I
A.iPhone B.Symbian C.Windows Mobile Phone D.None of the mentioned
- iii Briefly explain about Mobile Application Medium Types. 5 CO4 II
- iv What is Mobile Information Architecture ? Explain it with neat diagram. 7 CO4 I

Q.No 5

- What are the designing rich web interface. ,
i A. Make it Direct B. Stay on the Page 1 CO5 I
C. Use Transitions D. All of the above
- ii Dragging the insertion bar while editing text on the iPhone is an example of 1 CO5 I
A.Drop lens B.Drag lens C.Drag object D. Drop object
- iii Explain in detail about various pattern that supports virtual pages . 5 CO5 II
- iv Explain in detail about drag and drop operations? 7 CO5

OR

Q.no 6

- Checkbox or control-based selection is,
i A. Collected Selection B. Object Selection 1 CO5 II
C. Toggle Selection D. Hybrid Selection
- Selection that spans multiple pages is,
ii A. Collected Selection B. Object Selection 1 CO5 II
C. Toggle Selection D. Hybrid Selection
- iii Describe in detail about overlay and its types 5 CO5 II
- iv Demonstrate the process flow of web interface design. 7 CO5 II

PRIYADARSHINI COLLEGE OF ENGINEERING, NAGPUR

DEPARTMENT: Artificial Intelligence and Data Science

CAT-II (2023-24) Odd Sem

SEMESTER: B.Tech.VII

DATE : 19/10/2023

SUBJECT: Python Programming

SUBJECT CODE: BTECH_AI&DS-704T

DURATION: 1 Hr 30 Min

MAX MARKS: 35

Note:

- 1) All questions are Compulsory.
- 2) All questions carry marks as indicated.
- 3) Assume suitable data whenever necessary.

Que. No.	Question	Marks	CO	BL
Que 1. A	I. NumPy arrays can be a) Indexed b) Sliced c) Iterated d) All of the mentioned II. What is the purpose of NumPy in Python? a) numeric calculation b) Scientific computing c) Both a & b d) None of the mentioned	1	CO3	1
B	Write a programme to draw a line in a diagram from position (0,0) to position (6,250) in Python.	5	CO3	2
C	Interpret Data Visualization with Seaborn in Python.	7	CO3	2
	<u>OR</u>			
Que 2. A	I. Amongst which of the following is / are used to analyze the data in pandas. a) DataFrame b) Series c) a&b d) None II. A series object is size mutable. a) True b) False	1	CO3	1
B	Differentiate between Numpy and Pandas	5	CO3	2
C	Justify Data Visualization with Matplotlib in Python.	7	CO3	3
Que 3. A	I. How to add the mailing feature in the Flask Application? a) Pip install Flask b) Pip install Flask-Mail c) install Flask Mail d) pip Flask-Mail II. Flask is a a) Miniframework b) Microframework c) Nanoframework d) Paraframework	1	CO4	1
B	State the Benefit of using Flask framework.	5	CO4	1

c	Difference between Django and Flask .	7	CO4	2
	<u>OR</u>			
Que 4. A	I. Who developed Flask? a) Armin Ronacher b) James Ghosling c) Denis Richey d) All of the mentioned II. Flask is a framework for ____. a) Mobile development b) Web development c) Cloud Development d) none of the mentioned B What is flask framework and explain in details. C Interpret Flask Extension for database integration Concept in Python.	1	CO4	1
		1	CO4	1
		5	CO4	2
		7	CO4	2
Que 5. A	I. Machine Learning is subset of which of the following? a) Artificial Intelligence b) Deep Learning c) Data Learning d) None II. which of the following is the type of Regression Algorithms. a) Linear b) Logistic c) Polynomial d) All of the above	1	CO5	1
		1	CO5	1
B	Distinguish between Supervised And Unsupervised learning.	5	CO5	2
	<u>OR</u>			
Que 6. A	A _____ problem is when the output variable is a category a) Classification b) Regression c) Clustering d) All of the mentioned II. In what type of Machine Learning Labeled dataset used a) Supervised learning b) Unsupervised c) Reinforcement d) none of the mentioned	1	CO5	1
		1	CO5	1
B	Justify Regression Algorithms in Python	5	CO5	2