National Forensic Sciences University
School of Cyber Security and Digital Forensics
Course Name: M.Sc. Cyber Security (Batch: 2022-24)
Semester - I

Time: 11.30 am to 01.00 pm

Subject Code: CTMSCS SI P1
Subject Name: Essentials of Cyber Security and Cyber Warfare
Exam: Mid Semester Examination (NOV - 2022)

Date: 21-11-2022

Q1. Answer the following questions in short. (Attempt any 4)   [16 Marks]

1) Explain various types of windows OS.

2) What is user space and kernel space in Operating System?

3) What do you mean by firewall? Explain.

4) What is in security audit in OS? Explain.

5) Explain backup, restore, physical drive and logical drive with an example.

Q2. Answer the following questions in detail. (Attempt any 2)   [16 Marks]

1) Explain windows logs with example.

2) Write a note on any four Sysinternals utilities.

3) How to respond to any security incident related to windows-based machine? Explain a case study on that.

Q3. Select the Correct answer from the options (Attempt any 2)   [09 Marks]

1) Write a note on windows registry and its hives.

2) Explain some strategy for hardening windows operating system through enhancing security settings.

3) Write any 6 windows commands with its technical explanations.....

National Forensic Sciences University
School of Cyber Security and Digital Forensics
Course Name: M.Sc. Cyber Security (Batch: 2022-24)
Semester - I--

Subject Code: CTMSCS SI P2

Subject Name: Cyber Security Audit and Compliance

Exam: Mid Semester Examination (NOV - 2022)

Time: 11.30 am to 01.00 pm

Date: 22-11-2022

Q1. Answer the following questions in short. (Attempt all) [25 Marks]

1) Give practical example of various assessment methods? Consider your self as an auditor for ISMS.

2) Illustrate the importance of Information Security Policy and its objective.

3) Explain the term "control" for information security. Give any 2 examples of such control with description.

4) Explain Organization of Information Security in brief with all sub-controls in ISO 27001/2.   *Internal , Roles , Responsibility , Point of Contact, Mobile , Teleworking*

5) How HR should do the background verification? What it must include ? According to ISO 27001/2.   *Screening , T&C , Management, Education, Discipline , Termination , Chang of Responsibility*

Q2. Answer the following questions in detail. (Attempt any 2) [20 Marks]

1) Write a detailed note on teleworking sub control according to ISO27001/2 with relative examples.

2) If you performing and audit for the newly built data-center what physical and environmental security major and sub controls you will check? And in case if not complying then what will be risk of that respective sub controls.   *will comply checkse*

3) Write a detailed note on HR Security with all sub-controls and it's relevant examples & risks.

Q3. Select the Correct answer from the options (Attempt all) [05 Marks]

1) Ideally, what should be the temperature in the data center?   *16-20°c*

2) Ideally, at what interval the user access rights should be reviewed by the management?   *monthly.*

3) What is the best practise for Asset management?

4) What is the difference between SLA and AMC?

5) What is the best practise for Media Disposal?

*****

National Forensic Sciences University
School of Cyber Security and Digital Forensics
Course Name: MSc. Cyber Security (Batch: 2022-24)
Semester – I

Subject Code: CTMSCS SI P3 Time: 11.30 am to 01.00 pm
Subject Name: Artificial Intelligence with Python Exam: Mid Semester Examination
(NOV - 2022)   Date: 23-11-2022

Q1. Answer the following questions in short. (Attempt any 5)   [25 Marks]

1) Consider a training set for Rule-Based Classifier having 60 positive and 100 negative examples.

   For each of the following candidate rules,
   R1: A → + (covers 50 positive and 5 negatives)
   R2: B → + (covers 2 positive and no negatives)
   Determine which is the best and the worst candidate rule according to
   a) The Rule accuracy
   b) The Coverage

2) Consider following confusion matrix for a finance scenario that has two states. The model predicts whether a customer income tax will be paid on time, or late. Calculate the Accuracy, Error Rate, True Positive Rate, False Negative Rate, False Positive Rate.

	On Time	Late
On Time	90	11
Late	19	40

3) Discuss Difference between Supervised Learning and Unsupervised Learning

4) Explain Various Data Pre-Processing techniques

5) Explain how ML works using an application scenario

6) Design Decision Tree based classifier using following Rule based Model

   R1: P=No && Q=No → [-]

   R2: P= No && Q=Yes → [+]

   R3: P=Yes && R=No → [+]

   R4: P=Yes && R=Yes && Q=Yes → [+]

   R5: P=Yes && R=Yes && Q=No → [-]

Q2. Answer the following questions in detail. (Attempt any 2)   [16 Marks]

1) Create Linear Regression Line for following set of points : $\{(-2,-1),(1,1),(3,2)\}$. Using resultant regression line predict the data points.

2) Discuss K-Means clustering algorithm. Compute similarity for following objects.

We have 3 objects with 16 attributes . Define the similarity of objects.

```
ecoli1   0 1 1 1 0 0 0 1 0 0 0 0 0 0 1 1
ecoli2   0 1 0 1 1 0 0 1 0 0 0 0 0 0 1 0
ecoli3   1 1 0 1 1 0 0 1 0 0 0 0 0 0 1 1
```

3) For the question below, consider the following training data for the Naive Bayes Classifier.

Example No.	Color	Type	Origin	Stolen?
1	Red	Sports	Domestic	Yes
2	Red	Sports	Domestic	No
3	Red	Sports	Domestic	Yes
4	Yellow	Sports	Domestic	No
5	Yellow	Sports	Imported	Yes
6	Yellow	SUV	Imported	No
7	Yellow	SUV	Imported	Yes
8	Yellow	SUV	Domestic	No
9	Red	SUV	Imported	No
10	Red	Sports	Imported	Yes

Which class is the candidate is classified in (Stolen yes/ Stolen No)?

Color	Type	Origin	Stolen
Red	SUV	Domestic	?

Show step by step execution.

Q3. Select the Correct answer from the options (Attempt any 3)   [09 Marks]

1) Define the following: i. Overfitting ii. Underfitting

2) What is sampling? Discuss the types of sampling.

3) Explain the following terms using an Example :
   I. Mean   II. Median   III. Mode

4) Define the following: (I) Artificial Intelligence (AI),   (II) Machine Learning (ML),   (III) Deep Learning (DL).

National Forensic Sciences University
School of Cyber Security and Digital Forensics
Course Name: M.Sc. Cyber Security/M.Tech Cyber Security (Batch: 2022-24)
Semester - I
Subject Code: CTMSCS SI P4/CTMTCS SI P4   Time: 11.30 am to 01.00 pm
Subject Name: Web Application Security/Application Security and VAPT
Exam: Mid Semester Examination (NOV - 2022)   Date: 24-11-2022

1. **Write any two questions (Each question 5 marks) (10 Marks)**

   a. Define Cookies and Sessions with an example.
   b. Define CVE and CWE.
   c. Explain the TCP header.

2. **Write any five questions   (Each question 8 marks)(40 Marks)**

   a. Write a note on the Vulnerability assessment Security scanning process.
   b. What is VAPT and the Importance of vulnerability assessments?
   c. What is file inclusion Vulnerability? explain it with mitigations.
   d. Explain Google examples and prevention against sensitive data leaks with google dork.
   e. Explain NMAP and Its Scanning Techniques.
   f. Define terms: - (any four)
      - Vulnerability
      - Threat
      - Attack
      - Shellcode
      - Reverse Shell

NATIONAL FORENSIC SCIENCES UNIVERSITY
M. Sc. Cyber Security – Semester (I) –Mid Semester Examination
November–2022

Subject Code: CTMSCS SI P5   Date: 25/11/2022
Subject Name: Introduction to Forensic Science and Cyber Law
Time: 11:00 am to 12:30 pm   Total Marks: 50

Instructions:

1. Attempt all questions.
2. Figures to the right indicate full marks.

Q 1. Answer the following: Marks: 2*8 =16

1. (a) In which year the first GEQD was set up in India?
   (b) Name the first scientist to bring in the idea of anthropometry system for personal identification?
2. Chain of Custody.
3. Which principle of forensic science was established by Mr. Edmond Locard? Explain.
4. Forensic Anthropology is concerned with which functions? Explain.
5. Modus Operandi & Corpus Delicti.
6. (a) Under which section the admissibility of DNA is observed in Indian legal system?
   (b) Section 47 of Indian Evidence Act is concerned with?
7. What are packet sniffers?
8. Mention any two intravenous hypnotic medications used for Narco-Analysis?

Q 2. Answer in brief: *(Any four)*   Marks: 4*4 =16

1. Briefly mention the duties of a Forensic Scientist.
2. In crimes involving the firearm injuries, the clothes of victim bearing the blood from the body should be handled and packaged in which ways? Explain.
3. Describe any 04 notices issued by the INTERPOL on international requests for cooperation and allowing in member countries to share critical crime-related information.
4. Give the full forms of the mentioned-
   (a) CDFD
   (b) CCTNS
   (c) CDTS
   (d) AFIS

Crime Laboratory court

5. Answer the following:
   (a) Mobile device forensics
   (b) Memory forensics

Q 3. Answer in detail: _(Any two)_   Marks: 9*2=18

1. Explain in detail the principles of Forensic Science? ✓
2. What is Crime Scene? Explain the steps involved in Crime Scene Investigation? ✓
3. (a) Describe any four divisions of forensic science laboratory.
   (b) Highlight the major three INTERPOL'S CRIME PROGRAMMES.

****

DNA fingerprinting & Diagnostics

Cyber Crime

Cert DNA