

**Master of Technology**  
**First Semester Main Examination, Dec-2020**  
**Cyber Law and Intellectual Property Rights [MTCYS101]**

**Time: 3:00 Hrs**

**Max Marks 70**

**Note: Attempt any five questions out of eight.**  
**All questions carry equal marks.**

- Q.1 “Copyright of cyber technology has evolved in the light of Universal Copyright Convention of 1971 and other International Copyright Conventions”. Comment.
- Q.2 Examine the scope of copyright protection to the computer programmers in the light of the provisions of the Copyright Act, 1957.
- Q.3 Discuss in detail the provisions of TRIPS Agreement for trademarks and patent protection of Cyber World Technologies.
- Q.4 Enumerate the provisions of the Semi-conductor Integrated Circuits Layout Designs Act, 2000 in the context of protection of internal hardware components.
- Q.5 Write a critique on International perspective in respect of Cyber World Trademark in the light of Madrid Agreement.
- Q.6 What is called as ‘Better business bureau’ and explain its role in protecting the rights of consumers in Cyber World?
- Q.7 Explain the mechanism of transactions for payment of electronic funds?
- Q.8 Write short notes of the following:
1. WAN
  2. Registration of domain name
  3. Cyber surveillance
  4. Web Browser

**Master of Technology**  
**First Semester Main Examination, Dec- 2020**  
**Operating System and Security [MTCYS102]**

**Time: 3:00 Hrs****Max Marks 70**

**Note: Attempt any five questions out of nine.**  
**All questions carry equal marks.**

- Q.1** In a multiprogramming and time-sharing environment several users share the system simultaneously. This situation can result in various security problems. Explain any two such problems? Can we ensure the same degree of security in a time-shared machine as we have in dedicated machine? Explain your answer.
- Q.2** Define the essential properties of the following types of operating systems:  
 (a) Batch (b) Time sharing (c) Real time  
 (d) Parallel (e) Distributed
- Q.3** Distinguish between multiprogramming and multi-processing. What are the key motivations of development of each?
- Q.4** What are the differences between a trap and an interrupt? What is the use of each function?
- Q.5** Which of the following instruction should be privileged and why?
- Q.6** (a) Set value of timer (b) Load bound registers  
 (c) Read the clock (d) Forcibly terminate an I/O operation  
 (e) Clear memory (f) Mask off some interrupts  
 (g) Turn off interrupts (h) Load a value in a CPU register  
 (i) Switch from user to monitor mode.
- Q.7** The CPU should be in the privileged mode while executing the kernel code and in the User mode (i.e., non-privileged mode) while executing a user program. Explain how this is achieved during operation of an OS.
- Q.8** Consider the following set of processes, with the length of the CPU-burst time given in milliseconds:
- | Process        | Burst time | Priority |
|----------------|------------|----------|
| P <sub>1</sub> | 10         | 3        |
| P <sub>2</sub> | 1          | 1        |
| P <sub>3</sub> | 2          | 3        |
| P <sub>4</sub> | 1          | 4        |
| P <sub>5</sub> | 5          | 2        |
- The processes are assumed to have arrived in the order P<sub>1</sub>, P<sub>2</sub> ... P<sub>5</sub> all at time 0.  
 (1) Draw four Gantt charts illustrating the execution of these process using FCFS, SJF, a non-preemptive priority, and RR (quantum = 1) scheduling.

**Master of Technology**  
**First Semester Main Examination, Dec- 2020**  
**Computer Network and Security [MTCYS103]**

**Time: 3:00 Hrs**

**Max Marks 70**

**Note: Attempt any five questions out of eight.**  
**All questions carry equal Marks.**

- Q.1 What are the Transport layer services? Explain each layer in details?
- Q.2 Explain Internet Model of OSI Network Architecture?
- Q.3 What is mean by Internetworking? Applications of Internetworking?
- Q.4 How Peer to Peer Networks works in OSI network architecture?
- Q.5 Define the following terms:
- (i) Worms
  - (ii) Viruses
  - (iii) VPNs.
- Q.6 Compare and contrast a circuit-switched network and a packet-switched network.
- Q.7 What is mean by system calls? Explain Elementary and Advanced system calls?
- Q.8 Write a short note on:
- (i) Substitution Technique
  - (ii) Transposition Techniques.

**Master of Technology**  
**First Semester Main Examination, Dec-2020**  
**Data Base and Security (MTCYS-104)**

**Time: 3:00 Hrs****Max Marks 70****Note : Attempt any five questions out of eight.**

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|-----|---|----|
| Q.1 | (a) Explain three levels of abstraction in data modeling and their relationship.  | 7  |
|     | (b) What are two major variants of relational calculus? Explain their usage.  | 7  |
| Q.2 | (a) How is the objective of query optimization is achieved? Explain challenges to achieve it.                           | 7  |
|     | (b) Explain reduction of ER schema to table by taking example.  | 7  |
| Q.3 | (a) What is non loss decompositions? Explain functional dependency.   | 7  |
|     | (b) How is the multimedia database is different from normal database? Explain the main features of multimedia database. | 7  |
| Q.4 | What do you mean by “Knowledge Discovery”? How it is related to database house?   | 14 |
| Q.5 | (a) Write the algorithmic steps for query simplification.   | 7  |
|     | (b) What are common techniques for evaluating relational operators?   | 7  |
| Q.6 | What is data mart? How is it different from data warehouse? How the management of data base?                            | 14 |
| Q.7 | (a) Write a brief notes on pipelining and materialization.  | 7  |
|     | (b) Explain the relationship between a security policy and security model.  | 7  |
| Q.8 | Write short notes on the following-   | 14 |
|     | (a) Snowflake schema and fact constellation.  |    |
|     | (b) Clustering based disaster – proof database.   |    |
|     | (c) Malicious software.   |    |
|     | (d) Security managements.   |    |

**Master of Technology**  
**First Semester Main Examination, Dec-2020**  
**Cyber Security (MTCYS-105)**

**Time: 3:00 Hrs****Max Marks 70**

**Note :** Attempt any five questions out of seven.

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|------------|--|-----------|
| <b>Q.1</b> | <b>(a) What are the various components of information system?</b>              | <b>7</b>  |
|            | <b>(b) Discuss issues and challenges in cyber crime.</b>                       | <b>7</b>  |
| <b>Q.2</b> | <b>(a) What do you mean by email spoofing?</b>                                 | <b>7</b>  |
|            | <b>(b) Explain and differentiate between wishing, vishing, smishing?</b>       | <b>7</b>  |
| <b>Q.3</b> | <b>(a) Explain different method of password cracking.</b>                      | <b>7</b>  |
|            | <b>(b) What are the different forensic technologies?</b>                       | <b>7</b>  |
| <b>Q.4</b> | <b>(a) Explain operation of various hacking devices.</b>                       | <b>7</b>  |
|            | <b>(b) How to identify wireless network defenses and counter measures?</b>     | <b>7</b>  |
| <b>Q.5</b> | <b>Discuss nature of crimination and strategies to tackle cyber crime.</b>     | <b>14</b> |
| <b>Q.6</b> | <b>(a) What is the difference between linux firewall and windows firewall?</b> | <b>7</b>  |
|            | <b>(b) Write a note on Indian IT Act 2000.</b>                                 | <b>7</b>  |
| <b>Q.7</b> | <b>(a) Discuss Filter Vs Firewall.</b>   | <b>7</b>  |
|            | <b>(b) What are the various attack on wireless networks?</b>                   | <b>7</b>  |