IT 4th/Lib.

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BT-4/M-26 **44181**

BASICS OF COMMUNICATION

Paper–ES-IT-202A

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

UNIT–I

1. (a) Classify signals into different types and discuss their characteristics with suitable examples. 8

   (b) Explain how bandwidth, noise, and power jointly affect system performance. 7

2. (a) Derive and explain gain, attenuation, and decibel (dB) relationships in communication systems. 6

   (b) Explain the complete communication system model with block diagram and analyze the role of each component. 9

UNIT–II

3. (a) Discuss the generation of AM using the collector modulation method. 8

   (b) A frequency modulated signal has deviation = 75 kHz and modulating frequency = 15 kHz. Calculate modulation index and bandwidth (Carson's rule). 7

4. (a) Derive the power relationship in AM and explain modulation efficiency. 7

(b) Explain over-modulation in AM and calculate distortion when $m > 1$. 8

UNIT–III

5. (a) A slope detector receives FM signal with deviation 50 kHz. Analyze distortion conditions. 9

(b) Explain the role of RF amplifier in improving sensitivity and selectivity. 6

6. (a) Discuss tracking error in superheterodyne receiver and its effect. 7

(b) Explain mathematically how IF amplification improves signal quality. 8

UNIT–IV

7. (a) Explain different loss mechanisms in optical fibers and derive attenuation formula. 7

(b) Explain working of optical detectors and derive responsivity. 8

8. (a) Explain system design considerations for high-speed optical communication systems. 8

(b) Compare LED and LASER sources in optical communication systems. 7

Roll No. ..... Total Pages : 2

BT-4/M-26 **44182**

DISCRETE MATHEMATICS

Paper–PC-IT-204A

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *five* questions in all, selecting at least *one* question from each unit.

UNIT–I

1. (a) Prove the following proposition by PMI.
$1 + 2 + 3 + 4 \ldots\ldots\ldots\ldots + n = (n(n + 1))/2$.

(b) Define Quantifiers and types of Quantifiers with examples.

(c) Differentiate DNF and CNF with suitable examples. Obtain DNF of $(P \rightarrow Q) \wedge (\neg P \wedge Q)$. 15

2. The students in dormitory were asked whether they had a dictionary (D) or a thesaurus (T) in their rooms. The results showed that 650 students had a dictionary, 150 didn't have a dictionary, 175 had a thesaurus and 50 neither had a dictionary nor a thesaurus. Find the no. of students K (i) who live in dormitory, (ii) have a both dictionary and a thesaurus, (iii) have only a thesaurus, (iv) draw venn diagram, (v) explain principle of inclusion-exclusion. 15

UNIT–II

3. Draw the Hasse diagram of the poset $(D_{20}, |)$ and find its least and greatest elements, where D_{20} is the set of positive divisors of D_{20}. Determine GLB and LUB of X, where $X = \{1, 2, 4\}$. Also check whether D_{20} is lattice or not? 15

4. Define relation. Explain various types of relations with the help of suitable examples. 15

UNIT–III

5. (a) Solve the recurrence relation $a_{r+2} - 5a_{r+1} + 6a_r = 2$ by using method of generating functions satisfying the initial Conditions $a_0 = 1$ and $a_1 = 2$. 10

   (b) How many people at least in a group of 85 people have same initials? 5

6. Define functions. Explain various types of functions with suitable example. Show that function $f : R \rightarrow R$ defined as $f(x) = 3x + 4$ for all $x \in R$ is one-one onto. 15

UNIT–IV

7. Define Group. Write various Properties of a Group. Consider (G,*) be an algebraic system. G is set of nonzero real numbers, where * is defined by $a*b = ab/4$. Show that (G,*) is a Group. 15

8. Define an Abelian Group. Explain properties of Abelian Group. Consider an Algebraic system (G,*),where G is set of real numbers and * is a binary operation defined by $a*b = ab/4$. Show that (G,*) is an Abelian Group. 15

Roll No. ..... Total Pages : 3

BT-4/M-26 **44183**

OPERATING SYSTEM

Paper–PC-IT-206A

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

UNIT–I

1. (a) Explain the functions and characteristics of an Operating System. Discuss the evolution of operating systems with suitable examples. 10

(b) Compare multiprogramming, multitasking, and multiprocessing. 5

2. (a) What is a process? Explain the various fields of a Process Control Block (PCB). 5

(b) Assume the following workload in a system. All jobs arrive at time 0 in the order given.

Process	Burst Time	Priority
P1	9	5
P2	4	3
P3	5	1
P4	7	2
P5	3	4

Draw a Gantt chart illustrating the execution of the given jobs using the Priority CPU scheduling algorithm. Also calculate the average waiting time and average turnaround time. 10

UNIT–II

3. (a) Explain Interprocess Communication (IPC) and describe the message passing and shared memory techniques with suitable examples. 10

   (b) Explain the concept of deadlock and illustrate it using a Resource Allocation Graph. 5

4. (a) Explain the producer-consumer problem in detail and illustrate its solution using semaphores. Discuss the importance of synchronization in operating systems. 10

   (b) Explain the four necessary conditions for deadlock with suitable examples. 5

UNIT–III

5. (a) Explain the difference between external fragmentation and internal fragmentation. How can the fragmentation problem be solved using paging? 5

   (b) What is thrashing? What are the causes of thrashing? How does the system detect thrashing? What measures can the system take to eliminate this problem? 10

6. Consider the following page reference string :

   7 0 1 2 0 3 0 4 2 3 0 2 1 2 0 1 7 0 1 2 3 4

   (i) How many page hits will occur in the following page replacement algorithms, assuming four page frames? Assume that all frames are initially empty; therefore, the first unique pages will each result in one page fault.

   (a) Least Recently Used (LRU).

   (b) First-In-First-Out (FIFO).

   (c) Optimal Replacement. 3×3=9

(ii) Calculate the hit ratio for each of the above algorithms. 3

(iii) Which algorithm performs best for the above case? Justify your answer. 3

UNIT–IV

7. (a) Explain the concept of distributed systems. Discuss their characteristics, advantages, limitations, and applications in modern computing environments. 10

(b) Describe the Network File System (NFS) architecture. 5

8. Explain the concept of disk space management in file systems. Discuss the block allocation methods, free space management techniques, logical file system, and physical file system. Also explain the advantages and limitations of each method. 15

Roll No. ..... Total Pages : 2

BT-4/M-26 **44184**

MICROPROCESSOR INTERFACING AND APPLICATION

Paper–PC-IT-208A

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

UNIT–I

1. (a) Describe the pin configuration of 8085 and explain the function of each group of pins. 8

(b) Describe instruction cycle, machine cycle, and T-states with timing diagram of opcode fetch cycle. 7

2. (a) Draw and explain timing diagram of memory read and memory write operation. 7

(b) Describe the flag register of 8085. Explain how each flag is affected during arithmetic operations. 8

UNIT–II

3. (a) Explain stack and subroutine concepts in 8085 with CALL and RET instructions. 8

(b) Explain addressing modes of 8085 with examples. 7

4. (a) Write a program to perform BCD addition and explain DAA instruction. 9

(b) Explain instruction format and data format of 8085 with examples. 6

UNIT–III

5. (a) Describe interrupt structure of 8085 and explain different types of interrupts. 8

   (b) Differentiate between Memory Mapped I/O and I/O Mapped I/O. 7

6. (a) Discuss SIM and RIM for interrupts of 8085 microprocessor and discuss the format of the 8-bit data during SIM and RIM. 7

   (b) Design an interfacing scheme for a simple LED display using 8085. 8

UNIT–IV

7. (a) Explain the architecture and working of 8279 Keyboard/ Display Interface. 7

   (b) Explain the architecture and working of 8255 Programmable Peripheral Interface. 8

8. (a) Design interfacing of matrix keyboard using 8279. 8

   (b) Write steps to configure 8255 in Mode 0 for output operation. 7

Roll No. ..... Total Pages : 2

44185

BT-4/M-26

DATABASE MANAGEMENT SYSTEMS

Paper–PC-IT-210A

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *five* questions in all, selecting at least *one* question from each unit.

UNIT–I

1. Define database management system and also explain different types of data model with example. 15

2. What do you mean by mapping constraints and explain Specialization and Generalization with suitable examples. 15

UNIT–II

3. Distinguish between the following :
   (a) Relational algebra and Relational calculus.
   (b) Tuple relational calculus and domain relational calculus. 15

4. List and explain various commands used in DDL and DML. 15

UNIT–III

5. Illustrate different anomalies in designing a database with suitable examples. 15

6. Distinguish between 3NF, BCNF and 4NF with suitable example. 15

UNIT–IV

7. Explain the types of Serializability with example. 15

8. List different types of concurrency control. Which type is best and why? Explain in detail. 15

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BT-4/M-26 **44215**

UNIVERSAL HUMAN VALUES-II : UNDERSTANDING HARMONY

Paper–HTM-901A

Time : Three Hours] [Maximum Marks : 75

Note : Attempt any *five* questions selecting at least *one* from each unit.

UNIT–I

1. Discuss the concept of skill and value education. Discuss the process of self exploration with the one proposal you explored in your own life. (5+10=15)

2. Discuss the priority order of right understanding, relationship and physical facility for animals and human beings. Discuss the concept of happiness and prosperity. (8+7=15)

UNIT–II

3. Discuss the concept of co-existence for a human being. List and classify your desires based on self and body and further classify on the basis of source of imagination. (5+10=15)

4. Discuss the program of self regulation for harmony of self with the body. Discuss the effects of considering human being as body in today's lifestyle. (10+5=15)

UNIT–III

5. Discuss the feeling of trust and respect in human-human relationships. (15)

6. Discuss the human goal and various systems to achieve harmony in the society in detail. (15)

UNIT–IV

7. Discuss the various order of nature and harmony between them. Discuss the role of human being in maintaining/disturbing harmony. (9+6=15)

8. Discuss the concept of existence as coexistence in detail with various elements in it. Discuss the process to achieve universal human order at all level of existence. (10+5=15)

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Roll No. ..... Total Pages : 02

BT-6/M-26 **46211**

SOFTWARE ENGINEERING

Time : Three Hours] [Maximum Marks : 75

Note : Attempt any *Five* questions selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Differentiate between Program and Software Product. 7
   (b) Explain Software development life cycle. 8

2. (a) Explain Project estimation techniques. 7
   (b) Discuss Project scheduling. 8

Unit II

3. (a) Explain Requirement Engineering. 7
   (b) What do you understand by Prototyping ? 8

4. (a) Explain the terms: Coupling and Cohesion. 7
   (b) Write a short note on Database and Data Warehouse. 8

Unit III

5. (a) Explain Black box testing. 7

   (b) What do you understand by Recovery testing ? 8

6. (a) Write a short note on Debugging approaches. 7

   (b) Explain Forward Engineering. 8

Unit IV

7. (a) What do you understand by Software Quality Assurance ? 7

   (b) Explain the term 'Formal Technical Review'. 8

8. (a) Explain Capability Maturity model. 7

   (b) What do you understand by Computer Aided Software Engineering ? 8

Roll No. ..... Total Pages : 02

BT-6/M-26 46212

LINUX OPERATING SYSTEM

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. What are disk partitioning strategies in Linux. Explain how post installation customization and system upgrades are managed. **15**

2. What are the primary tasks of the Linux Kernel ? Explain, how kernel modules are managed at runtime. **15**

Unit II

3. Describe the TCP/IP protocol suite and the role of Network packets. Explain the Address Resolution Protocol (ARP) mechanism. **15**

4. Explain the architecture of the Network File System (NFS). Detail the installation and configuration of both NFS server and client sides. **15**

Unit III

5. Describe the elements of Windows networking and explain the NetBIOS, SMB and CIFS protocols. **15**

6. Explain the function of text processing tools : awk, grep and sed. With appropritae example. **15**

Unit IV

7. Explain Host Name Resolution and the hierarchy of the Domain Name System (DNS). Define DNS zones. **15**

8. Detail the configuration of a Postfix server for email relay. How are spam and viruses managed in a Linux-based mail system ? **15**

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Roll No. ..... Total Pages : 02

BT-6/M-26 46215

BIG DATA ANALYTICS

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. What do you mean by bigdata ? List features of bigdata. Also write applications of bigdata. 15

2. What do you mean by bigdata analytics ? What are the different types of big data analytics ? 15

Unit II

3. What is hadoop ? What are core components of hadoop ? Explain concept of mapreduce in hadoop. 15

4. Define data serialization. Explain how types of data affect serialization. 15

Unit III

5. What is mapreduce ? Explain various working phases of mapreduce with appropriate example and diagram. 15

6. Define HDFS. Discuss the HDFS Architecture and HDFS Commands in brief. **15**

Unit IV

7. List elements of Yarn. Discuss Hadoop YARN in detail with failures in classic Map Reduce. **15**

8. What is suffling and sorting in hadoop version 2.0 ? How are multiple tasks executed in Hadoop version 2.0 ? **15**

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BT-6/M-26 46216

ANALYSIS AND DESIGN OF ALGORITHMS

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. Define asymptotic notation. Explain all cases with suitable example. 15

2. Explain the principle of Binary search technique with an example and also list the advantages of it. 15

Unit II

3. What is Minimum cost spanning tree ? Explain an algorithm for generating minimum cost spanning tree and list some applications of it. 15

4 Find longest common subsequence by using algorithm for the strings: BACDB and BDCB. 15

Unit III

5. State n-queens problem and explain 8-queen problem using backtracking. **15**

6. Explain how the travelling salesperson problem is solved by using branch and bound algorithm. **15**

Unit IV

7. Compare BFS and DFS algorithm with an example and analyse time complexities. **15**

8. Discuss NP- hard and NP- complete class with the help of example. **15**

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BT-6/M-26 46217

MOBILE COMPUTING

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. Elaborate the mechanism of handoff in GSM. Explain how seamless communication is maintained when a user moves between calls. **15**

2. (a) Compare and contrast different generations of mobile telephony (1G, 2G, 3G, 4G) with respect to architecture, speed and services offered. **10**

   (b) Discuss mobile computing through the internet. **5**

Unit II

3. (a) Explain the major MAC layer concerns in wireless networks. Compare wireless MAC with wired MAC protocols. **10**

(b) Write a short note on wireless application in healthcare, mobile commerce, vehicular networks. 15

4. Describe the architecture of Mobile IP. Also, explain tunneling and encapsulation mechanism in Mobile IP. 15

Unit III

5. Discuss data replication mechanism used in mobile computing systems and examine the different replication approaches with their advantages. 15

6. Explain the various deployment models of cloud computing with suitable diagrams. 15

Unit IV

7. (a) What is the role of mobility and dynamic topology in MANETs ? 5

(b) Discuss the procedure of route discovery in AODV routing protocol. 10

8. What is the importance of QoS in Ad Hoc network ? Describe how DSDV maintains up-to-date routes using sequence numbers. **15**

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Roll No. ..... Total Pages : 02

BT-6/M-26 46221

E-COMMERCE

Time : Three Hours] [Maximum Marks : 75

Note : Attempt any *Five* questions selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Explain the needs of e-Commerce in modern business environments.

(b) Describe the advantages and disadvantages of e-Commerce in detail. **15**

2. (a) Explain the framework of e-Commerce with a neat diagram.

(b) Classify different types of e-Commerce and explain each with examples. **15**

Unit II

3. Explain EDI (Electronic Data Interchange) and its applications in e-Commerce. **15**

4. Explain the advantages of the Internet and the role of the World Wide Web in e-Commerce. **15**

Unit III

5. Explain different types of network attacks and their prevention techniques. **15**

6. Describe digital signatures and Virtual Private Networks (VPN) in detail. **15**

Unit IV

7. Explain the concept and importance of electronic payment systems. **15**

8. Describe electronic cash, smart card and credit card-based payment systems. **15**

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IT 7th / Library

Roll No. ..... Total Pages : 3

BT-7/M-26 **47278**

COMPILER DESIGN

Paper–PE-IT-D405A

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *five* questions in all by selecting at least *one* question from each unit. All questions carry equal marks.

UNIT–I

1. (a) What is Compiler? Design the Analysis and Synthesis Model of Compiler.

(b) Write down the five properties of compiler.

(c) Write the steps to convert Non-Deterministic Finite Automata (NDFA) into Deterministic Finite Automata (DFA).

2. (a) Write a regular expression for a language containing strings which end with "*abb*" over $\Sigma = \{a, b\}$.

(b) Construct a regular expression for the language containing all strings having any number of a's and b's except the null string.

UNIT–II

3. (a) Explain about Left factoring and Left Recursion with an example.

(b) Calculate FIRST and FOLLOW for the following grammar :

$E \rightarrow E + T/T$

$T \rightarrow T*F/F$

$F \rightarrow (E)/id$

4. (a) Construct CLR Parsing table for the given grammar:

$S \rightarrow CC$

$C \rightarrow aC/d$

(b) Differentiate between SLR, CLR, and LALR parsers with suitable example.

UNIT–III

5. (a) Draw the syntax tree and DAG for the following expression:

$(a*b) + (c - d)*(a*b) + b$

(b) Construct postfix notation for the following expression:

$(a + (b*c)\wedge d - e/(f + g)$

6. Write short notes on :

(a) Synthesized attributes.

(b) Inherited attributes.

(c) Dependency graph.

(d) Case statements.

(e) Directed Acyclic Graph.

UNIT–IV

7. (a) What is code optimization? Explain machine dependent and independent code optimization with suitable example.

(b) Write a short note with example to optimize the code:

(i) Dead code elimination.

(ii) Variable elimination.

(iii) Code motion.

(iv) Reduction in strength.

8. (a) Prepare the total cost of the following target code :

```
MOV a, R0
ADD b, R0
MOV C, R0
ADD R0, R1
M0V R1, X
```

(b) Create DAG and three - address code for the following C program :

```
i = l;
s = 0;
while ( i<= 10)
{
   s = s+ a[i] [i];
   i = i + i:
}
```

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BT-7/M-26 **47280**

SOFTWARE PROJECT MANAGEMENT

Paper–PE-IT-D409A

Time : Three Hours] [Maximum Marks : 75

Note : There are eight questions in all organized in four sections and each section is having two questions from each of the four units. The candidate shall have to attempt *five* questions in all, selecting at least *one* question from each unit.

UNIT–I

1. (a) Discuss the principles of conventional software engineering in detail. (8)

   (b) Give the Pictorial representation of the generations of Software economics advancements and explain it. (7)

2. (a) Process is an overloaded term! How improving software processes can improve software economics? (7)

   (b) Explain, with example how skill and experience of team affect the software economics. How it can be improved? (8)

UNIT–II

3. (a) Discuss in detail the inception phase and elaboration phases of life cycle process. (6)

(b) An architecture view is an abstraction of the design model! How? Discuss. (4)

(c) Draw the flow charts to show the iteration emphasis across the life cycle and discuss all the phase of it in detail. (5)

4. (a) Discuss in detail the construction phase and transition phases of life cycle process. (6)

(b) Which artifacts are necessary to synchronize stakeholder expectations? Discuss in detail. (4)

(c) With the help of pictorial representation, discuss the minor milestones in the life cycle of an iteration. (5)

UNIT–III

5. (a) Explain, how the planning balance can be achieved throughout the life cycle. (5)

(b) Differentiate between the software development team activities and software assessment team activities. (5)

(c) Write a short note on basic parameters of an earned value system. (5)

6. (a) With the help of diagram, discuss how software project team evolution takes place over the life cycle. (8)

(b) Through, how many states, the project environment artifacts evolve? Discuss in detail. (7)

UNIT–IV

7. (a) Draw and explain the review process model. (6)

(b) How many types of contracts are there? Explain in detail. (6)

(c) Differentiate between Schedule variance, Time variance and cost variance. (3)

8. (a) Write a short note on cost monitoring. (4)

(b) List the priorities one should apply to decide the levels of monitoring. (4)

(c) What do you know about software configuration management? Explain in detail. (7)

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BT-7/M-26 **47283**

CYBER LAW AND ETHICS

Paper–OE-IT-401-A

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *five* questions in all, selecting at least *one* question from each unit.

UNIT–I

1. (a) Explain the evolution of computer technology in detail. 7.5

(b) Explain Hierarchy of Courts. 7.5

2. What is Web hosting and Web Development Agreement. Explain in detail. 15

UNIT–II

3. Explain the following terms :

(a) Legal Recognition of Digital Signature.

(b) Certifying Authorities.

(c) Cyber Offences. 15

4. Explain in detail IT Act 2000 with its limitations. 15

UNIT–III

5. Differentiate between Patent, Copyright and Trademark with the help of examples. 15

6. Explain the following terms :

(a) Alternative dispute resolution.

(b) Electronic Database.

(c) Trademark law. 15

UNIT–IV

7. Define the term E-Commerce and explain all e-commerce models in detail. 15

8. Explain the following terms :

(a) Supply chain

(b) E-markets

(c) Block Chain Ethics 15

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Roll No. ..... Total Pages : 3

BT–8/M-26 **48357**

CLOUD COMPUTING

Paper–PE–IT–A404A

Time Allowed : 3 Hours] [Maximum Marks : 75

Note : Attempt **five** questions in all, selecting **one** question from each Unit. Question No. **1** is compulsory. All questions carry equal marks.

Compulsory Question

1. Answer any **five** of the following :

   (a) Differentiate between Utility Computing and Cloud Computing.

   (b) Discuss the role of Networks in Cloud Computing.

   (c) What is a Hybrid Cloud? Give its advantages.

   (d) Explain the concept of Large Scale Data Processing in Cloud.

   (e) What are the challenges of Jurisdictional Issues in Cloud computing?

   (f) Discuss Microsoft Azure as a case study.

UNIT–I

2. Define the Cloud Computing using the NIST model. Explain its essential characteristics, service models and deployment models as per NIST standards.

3. Explain the evolution of Computing paradigms from traditional computing to Cloud computing. Discuss the role of distributed, grid and utility computing in this evolution.

UNIT–II

4. Explain how Cloud computing works with the help of cloud architecture? Describe the role of Networks and protocols used in Cloud computing.

5. Differentiate between IaaS, PaaS, and SaaS with suitable examples. Discuss how each model supports different business and development needs.

UNIT–III

6. Discuss the challenges involved in managing data in cloud environments. Explain techniques for scalability, cloud storage and large-scale data processing with relevant examples.

7. Discuss the role of Data management in Cloud environments. How do Cloud service providers ensure data consistency, availability and durability?

UNIT–IV

8. Explain the different types of Security threats faced in Cloud computing environments. Discuss in detail the mitigation techniques for infrastructure security, network security and application-level security.

9. What is Cloud risk management? Explain the factors such as trust, reputation and client access that must be considered in Cloud security decision-making.

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BT–8/M-26 48360

CYBER SECURITY

Paper–OE–IT–402A

Time Allowed : 3 Hours] [Maximum Marks : 75

Note : Attempt **five** questions in all, selecting at least **one** question from each Unit. All questions carry equal marks.

UNIT–I

1. Define the Cyber Crime. Discuss the nature, scope, and types of Cyber crimes with suitable examples. 15

2. (a) Discuss the different categories of Cyber crimes such as Cyber extortion, Drug trafficking and Cyber terrorism.

   (b) Explain the importance of Information Assurance and Cyber Security in modern digital systems. 15

UNIT–II

3. (a) Describe Internet Hacking and Cracking techniques and their preventive measures.

   (b) Explain Password Cracking and Steganography techniques used in Cyber attacks. 15

4. Discuss software piracy, intellectual property exploitation, and Cyber stalking in detail. 15

UNIT–III

5. Explain the difference between passive and active Cyber attacks with suitable examples. 15

6. Discuss intrusion detection systems (IDS) and hardware protection mechanisms used in Cyber Security. 15

UNIT–IV

7 (a) Define Digital Forensics. Explain its scope and importance in Cyber Crime Investigation.

(b) Discuss the phases of the Digital Forensic Investigation process. 15

8. Write short notes on Digital Signatures, Cyber crime and Punishment and Cyber Law in India. 15

Roll No. ..... Total Pages : 2

BT–8/M-26 **48364**

INFORMATION SECURITY

Paper–OE–IT–410A

Time Allowed : 3 Hours] [Maximum Marks : 75

Note : Attempt **five** questions in all, selecting at least **one** question from each Unit. All questions carry equal marks.

UNIT–I

1. Discuss a model for network security with neat diagram. 15

2. Explain transposition techniques in detail. 15

UNIT–II

3. Compare linear cryptanalysis with differential cryptanalysis. 15

4. Discuss Diffie-Hellman key exchange algorithm in detail. 15

UNIT–III

5. What is the difference between HMAC and CMAC algorithm? 15

6. What is Kerberos authentication and how does it work? 15

UNIT–IV

7. Discuss S/MIME working and benefits in detail. 15

8. What is Secure Socket Layer and why it is used? 15