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**B.TECH. DEGREE EXAMINATION, DECEMBER 2012**

**Eighth Semester**

Branch : Computer Science and Engineering / Information Technology

**SECURITY IN COMPUTING (RT)**

(Supplementary/Mercy Chance)

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 4 marks.*

1. What is Cryptography ?
2. Explain statistical database security.
3. What are the important features of modern symmetric key algorithms ?
4. Explain Hacker.
5. Describe the protective mechanisms adopted for OS security.
6. Write briefly on Electronic mail security.
7. Define Authentication.
8. Explain the need for Application Security.
9. What are the mechanisms used for providing Network Security ?
10. Discuss the security issues of databases.

(10 × 4 = 40 marks)

**Part B**

*Answer all the questions.*

*Each question carries 12 marks.*

11. Explain the different intrusion techniques in detail.

*Or*

12. Explain the different attacks on networks. Discuss the different security mechanisms adopted for providing network security.
13. Discuss briefly the security features for authentication, access control and remote execution in UNIX.

*Or*

14. Explain the authentication mechanisms adopted for OS security.

**Turn over**

15. (a) Explain the need for Cryptography. Explain the different techniques involved in encryption and decryption.

(6 marks)

(b) Write a note on Digital Signature.

(6 marks)

*Or*

16. Explain Diffie-Helmer key exchange algorithm in detail.

17. Discuss the security mechanisms used in JAVA platform.

*Or*

18. Explain, with a neat figure, IP security, architecture.

19. (a) Explain the relevance of database security.

(6 marks)

(b) Define SQL Security.

(6 marks)

*Or*

20. Explain, in detail, how MAC helps in providing multi-level security.

[5 × 12 = 60 marks]

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**B.TECH. DEGREE EXAMINATION, DECEMBER 2012**

**Eighth Semester**

Branch : Computer Science and Engineering/Information Technology

**ARTIFICIAL INTELLIGENCE (RT)**

(Supplementary/Mercy Chance)

Maximum : 100 Marks

Time : Three Hours

*Answer all questions.*

**Part A**

*Each question carries 4 marks.*

1. Define Artificial Intelligence. How AI problems differ from normal problems ?
2. With an example, explain state-space approach for solving a problem.
3. What is meant by constraint satisfaction problem ?
4. What is meant by "O(n)" type with respect to an algorithm ?
5. How is the city-block distance between two vectors computed ?
6. Explain how alpha-beta pruning got this name.
7. Explain Modus porenens in propositional logic.
8. What is meant by resolution ? What are its different types ?
9. What is the use of "assert" and "retract" with respect to a predicate in Prolog ?
10. What is a Horn clause ? Give example.

(10 × 4 = 40 marks)

**Part B**

*Each question carries 12 marks.*

11. (a) Explain uniform cost search.  
(b) Is breadth-first search a special case of uniform cost search ? Explain with reason.

*Or*

12. Explain bidirectional search and depth limited search.
13. Explain simulated annealing algorithm. State the situations/applications where this is suitable.

*Or*

14. With example, explain iterative deepening A\* algorithm.

Turn over

15. Explain Mini-Max algorithm. What are its important properties ?

Or

16. Explain alpha-beta pruning with example. Why it called so ? What are its properties ?

17. With two examples, explain semantic method for theorem proving.

Or

18. (a) What is meant by "soundness" and "completeness" of resolution algorithm ?

(b) Represent the following statement using predicate logic. Indicate your assumptions.

Some boys like Vanilla ice-creams.

19. (a) Represent each of the following pieces of knowledge by a semantic net :

(i) Loves (Mary, John).

(ii) Loves (Mary, John)  $\wedge$  Hates (John, Nitha).

(iii) Loves (Mary, John)  $\rightarrow$  Hates (Nitha, John).

(b) What are the important abstract data types in Prolog ?

Or

20. Explain semantic nets and frames in Prolog.

(5  $\times$  12 = 60 marks)



14. Write briefly on :

- (a) Client Server interaction protocols. (6 marks)  
 (b) Optimizing applications for client-server. (6 marks)

15. (a) Describe multitasking. (6 marks)  
 (b) Explain the advantages and limitations of multiple processors. (6 marks)

Or

16. (a) Explain the concept of Threads. (6 marks)  
 (b) Describe the server communication model. (6 marks)

17. (a) Explain the concept of semaphores. (6 marks)  
 (b) Illustrate the semaphore implementation in NT and Netware. (6 marks)

Or

18. (a) Explain Processing Queues. (6 marks)  
 (b) Explain how scheduling is implemented in client server environment. (6 marks)

19. (a) Discuss the different communication protocols. (6 marks)  
 (b) Explain how interprocess communication is achieved. (6 marks)

Or

20. (a) Explain the need for Network Communication. (6 marks)  
 (b) Write briefly on the process of building portable client server applications. (6 marks)

[5 × 12 = 60 marks]

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**B.TECH. DEGREE EXAMINATION, DECEMBER 2012**

**Eighth Semester**

Branch : Computer Science and Engineering/Information Technology

**DISTRIBUTED COMPUTING (Elective II) (R T)**

(Supplementary / Mercy Chance)

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 4 marks.*

1. Write the examples of distributed system. Give a brief description also.
2. List the advantages of distributed system.
3. Make notes on Transparency in distributed file system.
4. What is server caching? Explain.
5. Bring out the methods by which thrashing can be solved.
6. Describe the advantages of distributed shared memory.
7. List out the desirable features of a good scheduling algorithm.
8. What are the advantages of process migration? Explain.
9. Explain Intension lists with example.
10. Explain the conditions for deadlock in distributed system.

(10 × 4 = 40 marks)

**Part B**

*Each question carries 12 marks.*

11. Describe the design goals and main features of MACH.

*Or*

12. Explain the network technologies of distributed system.
13. Discuss the Network File System Architecture.

*Or*

14. Briefly explain the distributed file system implementation techniques.

**Turn over**

15. Describe the RPC mechanism implementation in detail.

Or

16. Explain design and implementation issues of distributed shared memory.

17. Briefly explain the taxonomy of load balancing algorithms.

Or

18. Explain the process migration on Heterogenous systems.

19. Explain the transaction recovery methods.

Or

20. Briefly explain the prevention of deadlock in distributed system.

(5 x 12 = 60 marks)



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**B.TECH. DEGREE EXAMINATION, DECEMBER 2012**

**Eighth Semester**

Branch : Computer Science and Engineering / Information Technology

**NEURAL NETWORKS (Elective III) (R, T)**

(Supplementary/Mercy Chance)

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 4 marks.*

1. What are the basic building blocks of an ANN?
2. Differentiate between training and learning processes.
3. What is a feed forward network? Give example.
4. What is temporal instability?
5. Compare the characteristics of full CPN and forward only CPN.
6. What is Kohonen learning rule?
7. Explain how Bayesian classification rule is used in statistical neural networks.
8. What is simulated annealing.
9. What is pattern association.
10. What are the two types of learnings in ART net?

(10 × 4 = 40 marks)

**Part B**

*Answer all questions.*

*Each question carries 12 marks.*

11. Explain with diagrams the activation functions used in ANN.

*Or*

12. Draw the architecture of a multilayer perceptron and explain its training algorithm.

**Turn over**

13. Derive the generalized delta learning rule.

*Or*

14. Discuss in detail the training algorithm used in back, propagation network.

15. Draw and explain the architecture of a full CPN.

*Or*

16. Explain the training and application algorithms used for forward only CPN.

17. State and explain the simulated annealing algorithm.

*Or*

18. Discuss on the role of statistical methods for the solution of nonlinear optimization problems.

19. What are the training algorithms used for pattern association?

*Or*

20. Explain the architecture of ARTI network. Also explain the computational and supplemental units.

(5 × 12 = 60 marks)

**B.TECH. DEGREE EXAMINATION, DECEMBER 2012****Eighth Semester**

Branch : Computer Science and Engineering / Information Technology

BIOMETRICS (Elective III) (RT)

(Supplementary/Mercy Chance)

Time : Three Hours

Maximum : 100 Marks

**Part A***Answer all questions.**Each question carries 4 marks.*

1. Differentiate between verification and identification.
2. What is false match rate? Explain its significance.
3. What is a platen?
4. What are the strengths of facial scan?
5. What are the weaknesses of iris scan?
6. Explain the data acquisition process in voice scan.
7. Describe the distinctive features of hand-scan biometric.
8. Explain how AFIS and finger-scan differ.
9. Is DNA a biometric?
10. Write a note on biometric middlewave.

**(10 × 4 = 40 marks)****Part B***Answer all questions.**Each question carries 12 marks.*

11. Discuss the steps involved in biometric matching.

*Or*

12. Discuss the features which cause false non-match in biometrics. Explain the methods to avoid such situations.

**Turn over**

13. How is image processed in Finger scan technology? Explain in detail.

*Or*

14. Explain in detail the changes in physiological characteristics that reduce matching accuracy in facial scan technology.

15. Discuss on the competing iris-scan technologies.

*Or*

16. Explain the different characteristics of voice biometrics for network security.

17. Explain the working of hand-scan biometric technology.

*Or*

18. Explain in detail the principle of working of a behavioural biometric system.

19. Discuss on the applications of biometrics.

*Or*

20. Explain the role of biometric solution matrix in the deployment of biometrics for authentication problems.

(5 × 12 = 60 marks)

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**B.TECH. DEGREE EXAMINATION, DECEMBER 2012**

**Eighth Semester**

Branch : Computer Science and Engineering

**PRINCIPLES OF PROGRAMMING LANGUAGES (R)**

(Supplementary/Mercy Chance)

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 4 marks.*

1. Explain the significance of rule based language.
2. What is the need for separate compilation of a program ?
3. Explain the basic elements of the implementation of a data type.
4. List out the advantages of dynamic type checking.
5. Compare different forms of state-level sequence control.
6. Explain the significance of structured break statement.
7. Explain polymorphism with an example.
8. Explain recursion with reference to sequence control structures in programming.
9. What is the significance of persistent programming language ?
10. Explain Pipelining.

(10 × 4 = 40 marks)

**Part B**

*Answer all questions.*

*Each question carries 12 marks.*

11. Define Binding. Explain different classes of binding.  
*Or*
12. Explain in detail about the role of Programming languages. List out the attributes of a good language.
13. Briefly explain type checking and type conversion.  
*Or*
14. Define Declaration. Explain the purposes for declaration.

**Turn over**

15. Briefly explain the specification and implementation of a subprogram.

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16. Discuss structured sequence control with example.

17. Compare static and dynamic scope with examples.

18. Define aliasing. What are different aliases for data objects? Explain in detail.

19. Briefly explain the role of exception handler in programming execution.

Maximum : 100 Marks

Time : Three Hours

Or

20. Compare and contrast RISC and CISC. Explain how a system performance can be improved with reference to processor design.

Answer all questions.

Each question carries 4 marks.

(5 x 12 = 60 marks)

1. Explain the significance of the based language.
2. What is the need for separate compilation of a program?
3. Explain the basic elements of the implementation of a data type.
4. List out the advantages of dynamic type-checking.
5. Compare different forms of state-level sequence control.
6. Explain the significance of structured break statement.
7. Explain polymorphism with an example.
8. Explain recursion with reference to sequence control structures in programming.
9. What is the significance of persistent programming language?
10. Explain Pipelining.

(10 x 4 = 40 marks)

**Part B**

Answer all questions.

Each question carries 12 marks.

11. Define Binding. Explain different classes of binding.

Or

12. Explain in detail about the role of programming languages. List out the attributes of a good language.

13. Briefly explain type checking and type conversion.

Or

14. Define Declaration. Explain the purposes for declaration.

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**B.TECH. DEGREE EXAMINATION, DECEMBER 2012**

**Eighth Semester**

Branch : Computer Science and Engineering

**HIGH PERFORMANCE COMPUTING (R)**

(Supplementary/Mercy Chance)

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 4 marks.*

1. List the possible parallel processing mechanisms available for uniprocessor computers.
2. Differentiate a dataflow computer from a control flow computer.
3. Explain, what is linear pipelining.
4. Explain the effect of branch instructions in the performance of pipelines.
5. What is an associative processor ? Explain.
6. Explain a cube interconnection network.
7. Differentiate between a loosely coupled and tightly coupled multiprocessors.
8. Explain the term fair scheduling as applied.
9. Explain, what a dataflow graph is.
10. What are operation packets and data tokens in a data flow computer ?

(10 × 4 = 40 marks)

**Part B**

*Answer all questions.*

*Each question carries 12 marks.*

11. Discuss the Architectural configurations of parallel computers.

*Or*

12. Explain the programmatic levels at which parallel processing can be implemented.
13. Discuss any *one* classification scheme for pipe line processors.

*Or*

14. Discuss linear pipelines and Arithmetic pipelines in detail.

**Turn over**

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15. Describe the design decision parameters for inter PE communications.
16. Write notes on SIMD matrix multiplication.
17. Discuss the various types of interconnection networks for a multiprocessor systems.
18. Explain in detail the bus arbitration algorithm for a multiprocessor system.
19. Discuss the merits and demerits of data flow computing.

Time: Three Hours

Part A

20. Discuss the properties of dataflow languages.
- Answer all questions. Each question carries 4 marks. (5 x 12 = 60 marks)
1. List the possible parallel processing mechanisms available for uniprocessor computers.
  2. Differentiate a dataflow computer from a control flow computer.
  3. Explain what is linear pipelining.
  4. Explain the effect of branch instructions in the performance of pipelines.
  5. What is an associative processor? Explain.
  6. Explain a cube interconnection network.
  7. Differentiate between a loosely coupled and tightly coupled multiprocessors.
  8. Explain the term fair scheduling as applied.
  9. Explain what a dataflow graph is.
  10. What are operation packets and data tokens in a data flow computer?
- (10 x 4 = 40 marks)

Part B

- Answer all questions. Each question carries 12 marks.
11. Discuss the Architectural configurations of parallel computers.
  12. Explain the programmatic levels at which parallel processing can be implemented.
  13. Discuss any one classification scheme for pipe line processors.
  14. Discuss linear pipelines and Arithmetic pipelines in detail.



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**B.TECH. DEGREE EXAMINATION, DECEMBER 2012**

**Eighth Semester**

Branch : Computer Science and Engineering

E-COMMERCE (Elective II) (R)

(Supplementary/Mercy Chance)

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.  
Each question carries 4 marks.*

1. What is hypertext ? Explain.
2. What is meant by business to business transactions ?
3. What is public key cryptography ?
4. Write notes on firewalls.
5. Explain the concept and types of electronic tokens.
6. What forms of EFT are suitable for online commercial payments ? Explain.
7. What do you understand by an EDI envelope ?
8. What are data warehouses ? Explain.
9. Write notes on cellular communications.
10. What is ISDN ?

(10 × 4 = 40 marks)

**Part B**

*Each question carries 12 marks.*

11. Discuss the e-commerce organisational applications in details.

*Or*

12. Explain the architecture of e-commerce.

13. Discuss in detail the protection methods available to address client-server security threats.

*Or*

14. Explain the concepts of S-http and SSL.

15. What are credit cards ? What are the advantages and disadvantages of payments using credit cards.

*Or*

16. Discuss the risks and remedies in e-payment systems.

**Turn over**

17. Explain internet information systems and their role in e-commerce.

Or

18. Discuss the types of digital documents in detail

19. Explain packet switching and circuit-switching. Bring out their relative merits and demerits.

Or

20. Explain the asynchronous transfer mode in detail.

(5 × 12 = 60 marks)

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**B.TECH. DEGREE EXAMINATION, DECEMBER 2012**

**Eighth Semester**

Branch : Computer Science and Engineering

MULTIMEDIA SYSTEMS (Elective III) (R)

(Supplementary / Mercy Chance)

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.*

**Part A**

*Each question carries 4 marks.*

1. Name different elements of a multimedia system.
2. What is MIDI? How MIDI audio is generated?
3. Explain the method of creating a digital image.
4. List the name of image file formats by different service providers.
5. Name different CD families and give its storage capacity.
6. Describe a recordable and rewritable DVD in different formats.
7. What is OOPS? Explain.
8. Discuss the problems related to multimedia programming.
9. Describe the transport subsystem in a multimedia network. List its features.
10. Write a short notes on future multimedia.

(10 × 4 = 40 marks)

**Part B**

*Each question carries 12 marks.*

11. Describe different input-output hardware devices in multimedia systems.

*Or*

12. Explain 3D-modelling and animation tools used for it.
13. Describe hypermedia and hypertext.

*Or*

14. Describe in detail MPEG-2, MPEG-4, MPEG-7 and MPEG-21 standards.

**Turn over**

15. Name different building blocks in quick time. Describe each *one* in detail.

*Or*

16. (a) Write the specifications and sampling rate of 'Red Book' standard.

(b) Describe the Apple's Quick Time player used for recording and editing audio.

17. Explain Transform classes and component classes in MM programming.

*Or*

18. Describe different synchronization methods in audio and video, in detail.

19. Describe the capture and editing of real time video pictures.

*Or*

20. Explain the protocols used in multimedia networks, and explain the protocol suite by TCP-IP.

(5 × 12 = 60 marks)