## B.TECH. DEGREE EXAMINATION, MAY 2012

### Eighth Semester

Branch : Computer Science and Engineering / Information Technology

BIOMETRICS (Elective III) (R, T)

(Regular/Supplementary)

Time : Three Hours                                      Maximum : 100 Marks

*Answer* **all** *questions.*

### Part A

*Each question carries 4 marks.*

1. Differentiate between Physiological and behavioural characteristics of human being. Give examples for each.

2. Define false non-match rate. What is its importance ?

3. What are the strengths of finger scan biometric ?

4. Discuss the challenges in Facial scan.

5. Explain the user discomfort with eye-based technology.

6. What are the weaknesses of voice scan ?

7. Explain the template generation process in retina-scan.

8. Compare AFIS and Finger-scan.

9. Explain the need for standard in biometrics.

10. Define Urgency, exclusivity and receptiveness in connection with biometric diployment.

(10 × 4 = 40 marks)

### Part B

*Each question carries 12 marks.*

11. What are the advantages of biometrics compared to traditional authentication methods ?

*Or*

12. Explain with diagrams how biometric matching work.

13. Explain the working of finger scan technology.

*Or*

14. Explain the strengths and weaknesses of facial-scan technology.

15. What is the role of infrared sensors in iris recognition ? Explain in detail.

*Or*

16. Discuss the various artifacts used for voice biometrics.

17. Explain in detail the automatic fingerprint identification system.

*Or*

18. Describe in detail the working and application of any *one* type of behavioural biometric system.

19. Discuss the designing privacy sympathetic biometrics system.

*Or*

20. Explain with examples the role of biometric solution matrices in the deployment of biometric systems for authentication problems.

(5 × 12 = 60 marks)

# B.TECH. DEGREE EXAMINATION, MAY 2012

### Eighth Semester

Branch : Computer Science and Engineering/Information Technology

CLIENT – SERVER COMPUTING (Elective II) (R T)

(Regular/Supplementary)

Time : Three Hours                                    Maximum : 100 Marks

### Part A

*Answer all questions.*

*Each question carries 4 marks.*

1. What are semaphores?

2. Write briefly on the fundamentals of client-server design.

3. What is a processing queue?

4. Discuss the uses of client-server computing.

5. Explain Network Communication.

6. What is Multitasking?

7. Explain the concept of Thread.

8. What is Heterogenous computing?

9. Write examples of client-server implementation.

10. Discuss the different communication protocols.

(10 × 4 = 40 marks)

### Part B

*Answer all questions.*

*Each question carries 12 marks.*

11. Explain the relevance of client-server computing. Discuss its advantages and disadvantages.

(12 marks)

*Or*

12. Write technical notes on :

    (a) Distributed computing.

    (b) Client-server databases.

(6 + 6 = 12 marks)

**Turn over**

13. Explain the process of preparing applications for client-server and optimization of applications for client-server.

(6 + 6 = 12 marks)

*Or*

14. Write briefly on :

(a) Client-server interaction protocols.

(b) Client-server interaction management.

(6 + 6 = 12 marks)

15. (a) Explain child and parent processor.

(b) Discuss the disadvantages of multiple processors.

(6 + 6 = 12 marks)

*Or*

16. (a) Explain the uses of Threads.

(b) Discuss server communication model.

(6 + 6 = 12 marks)

17. Explain the concept of context switching. Explain context switching pre-emptive systems.

(12 marks)

*Or*

18. Explain the uses of semaphores. Briefly illustrate the semaphore implementations in NT and Netware.

(12 marks)

19. (a) Explain how Network communication is achieved.

(b) Explain Interprocess Communication.

(6 + 6 = 12 marks)

*Or*

20. Discuss the different client-server applications and explain how portable client-server applications can be built.

(12 marks)

[5 × 12 = 60 marks]

G 1250 (Pages : 2) Reg. No.................................

Name...............................

# B.TECH. DEGREE EXAMINATION, MAY 2012

### Eighth Semester

Branch : Computer Science and Engineering / Information Technology

## NEURAL NETWORKS (Elective III) (RT)

### (Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

*Answer* all *questions.*

### Part A

*Each question carries 4 marks.*

1. Explain the principle of an Artificial neuron.

2. What is linear separability ?

3. What are the applications of BPN ?

4. Differentiate between local minima and global minima.

5. What are the two types of CPN ?

6. What is Grossberg learning rule ?

7. Explain neocagnitron network in brief.

8. What is Cauchy's learning rule ?

9. What are the advantages of recurrent nets ?

10. What are the three states of ART network ?

(10 × 4 = 40 marks)

### Part B

*Each question carries 12 marks.*

11. Discuss on the development of ANN.

*Or*

12. Describe the training algorithms used in ANN.

13. Explain with diagram the architecture of a back propagation network.

*Or*

14. Discuss on the optimization technique used in back propagation algorithm.

**Turn over**

16. State and explain the application algorithm used in full CPN.

*Or*

16. With the Architecture, give a detailed description of forward only CPN.

17. Describe the structure of simulated annealing algorithm.

*Or*

18. Discuss on the applications of statistical methods for the optimization non-linear problems.

18. Draw the architecture of a BAM network and discuss on its training algorithm.

*Or*

20. Explain the basic structure and operation of ART network.

(5 × 12 = 60 marks)

G 1158

(Pages : 2)

Reg. No. CS

Name

# B.TECH. DEGREE EXAMINATION, MAY 2012

### Eighth Semester

Branch : Computer Science/Information Technology

## SECURITY IN COMPUTING (RT)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marl

## Part A

*Answer* **all** *questions.*

*Each question carries 4 marks.*

1. Explain Digital Signature.

2. What are the different Authentication mechanisms adopted for OS security?

3. What are Firewalls?

4. What is a Virus?

5. Describe SQL Security.

6. Write the need for encryption and decryption.

7. What are the common intrusion techniques?

8. Write briefly on Applet security.

9. Illustrate the different official levels of computer security.

10. Write the need for database security.

(10 × 4 = 40 marks)

## Part B

*Answer* **all** *questions.*

*Each question carries 12 marks.*

11. Explain the different security services and mechanism provided for network security.

(12 marks)

*Or*

12. Explain briefly :

  (a) Trojan Horse.

  (b) Worm.

(6 + 6 = 12 marks)

**Turn over**

13. Discuss the need for OS security. Describe the protection mechanisms adopted for OS security.

(12 marks)

Or

14. Discuss the security features for authentication, access control and remote execution in Windows 2000.

(12 marks)

15. Explain DES algorithm. Discuss the strength of DES algorithm.

(12 marks)

Or

16. (a) Explain RSA algorithm. Compare RSA algorithm with DES algorithm.

(b) Explain the importance of Hash functions.

(6 + 6 = 12 marks)

17. Explain, with an example, E-mail security.

(12 marks)

Or

18. Explain briefly :

(a) Kerberos.

(b) S/MIME.

(6 + 6 = 12 marks)

19. Discuss the security issues for databases and how database security is provided.

(12 marks)

Or

20. (a) Write briefly on statistical database security.

(b) Explain how MAC provides multilevel security for databases.

(6 + 6 = 12 marks)

[5 × 12 = 60 marks]

G 1165 (Pages : 2) Reg. No...................................

Name..............................

# B.TECH. DEGREE EXAMINATION, MAY 2012

### Eighth Semester

Branch : Computer Science and Engineering

HIGH PERFORMANCE COMPUTING (R)

(Regular/Supplementary)

Time : Three Hours
Maximum : 100 Marks

## Part A

*Answer all questions.*

*Each question carries 4 marks.*

1. What do you understand by the term parallel processing?

2. Explain what is a pipe line computer.

3. What are the two performance indices for a linear pipe line? Explain.

4. Differentiate between static pipelines and dynamic pipelines.

5. Explain what is an array processor.

6. What are the two types of associative memory organisation?

7. Explain what are critical sections. What are the usual assumptions made with regard to critical sections?

8. What is a semaphore? How is it useful?

9. Compare the principles of data flow computers and control flow computers.

10. Explain data flow graphs.

(10 × 4 = 40 marks)

## Part B

*Each question carries 12 marks.*

11. Explain the parallel processing mechanisms for uniprocessor systems.

*Or*

12. Discuss the categories of computers based on Flynn's classification.

13. Explain in detail how branch instructions affect pipelining efficiency.

*Or*

14. Explain linear pipelines and arithmetic pipelines.

**Turn over**

15. Discuss static and dynamic interconnection networks for SIMD computers.

*Or*

16. Write notes on parallel sorting on array processors.

17. Discuss the various bus arbitration schemes for multiprocessor systems.

*Or*

18. Discuss in detail the different language constructs to exploit parallelism.

19. Compare and contrast static and dynamic data flow computers.

*Or*

20. Discuss the alternative approaches for designing data flow computers.

(5 × 12 = 60 marks)

G 1176

(Pages : 2)

Reg. No...............................

Name..................................

# B.TECH. DEGREE EXAMINATION, MAY 2012

## Eighth Semester

Branch : Computer Science and Engineering

PRINCIPLES OF PROGRAMMING LANGUAGES (R)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

## Part A

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

1. List out the attributes of a good programming language.

2. Explain two different types of language standardization.

3. What are the different ways of type conversion?

4. Explain different operations on data structures.

5. Discuss any *two* central problems in storage management.

6. Explain the difference between Prefix and Postfix evaluation.

7. Explain "Copy rule" in sub-program control.

8. What are the effects of Call-return statements in subprogram?

9. Write a note on Coroutines.

10. What are the different principles of Parallel Programming languages?

(10 × 4 = 40 marks)

## Part B

*Each question carries 12 marks.*

11. Explain in detail about the computational models of programming.

*Or*

12. Explain the effects of Programming environment on language design.

13. Briefly explain the implementation of Elementary Data types.

*Or*

14. Briefly explain the implementation of data structure types.

**Turn over**

15. Differentiate compound statements and conditional statements with examples with reference to structured sequence control.

*Or*

16. Briefly explain about Semantics for expressions.

17. How can we implement subprograms using stack?

*Or*

18. Discuss on attributes of data control.

19. Explain the concept of Parallel Programming in detail.

*Or*

20. Briefly explain client-server computing in detail.

(5 × 12 = 60 marks)

**G 1185**    (Pages : 2)    Reg. No..............................

Name..................................

# B.TECH. DEGREE EXAMINATION, MAY 2012

### Eighth Semester

Branch : Computer Science and Engineering/Information Technology

## ARTIFICIAL INTELLIGENCE (RT)

(Regular/Supplementary)

Time : Three Hours                         Maximum : 100 Marks

### Part A

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

1. Give two examples of real world problems that can be solved by AI.
2. What is meant by search tree ?
3. Name the four factors based on which search algorithms are judged.
4. Show that if a heuristic is consistent, it must be admissible.
5. Explain simulated annealing.
6. How is the speed of mini-max algorithm improved ?
7. Distinguish between Forward and Backward chaining.
8. What is meant by resolution ? What are its different types ?
9. What is meant by tautology ?
10. Give example of a parse tree.

(10 × 4 = 40 marks)

### Part B

*Answer all questions.*
*Each question carries 12 marks.*

11. Explain breadth first and depth first search algorithms. Illustrate a problem where the former algorithm would work better than the later.

*Or*

12. Explain iterative deepening depth first search. What are its advantages ?

13. Explain various Heuristic search strategies.

*Or*

14. Explain Hill climbing search algorithm.

15. Explain Mini-Max algorithm.

*Or*

16. Explain the basics of application of AI in a typical state of the art deterministic game.

**Turn over**

17. State and explain resolution theorem.

*Or*

18. Explain unification of predicates.

19. (a) What is meant by non-monotonic reasoning ?

    (b) With example, explain metapredicates.

*Or*

20. Explain semantic nets and frames in prolog.

$(5 \times 12 = 60 \text{ marks})$