

G 7010

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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, APRIL 2011

Eighth Semester

Branch : Computer Science/Information Technology

SECURITY IN COMPUTING (RT)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 4 marks.

1. Describe the relevance of network security.
2. Write a note on viruses.
3. Describe the official levels of computer security.
4. What are the protection mechanisms adopted for OS security ?
5. With figure, explain encryption and decryption mechanisms.
6. What do you mean by crypt analysis ?
7. Differentiate blue and application security.
8. Define applet security.
9. Describe SQL security.
10. Define Statistical database security.

(10 × 4 = 40 marks)

Part B

Answer all the questions.

Each question carries 12 marks.

11. Explain the following :—

(a) Hackers.

(6 marks)

(b) Crackers.

(6 marks)

Or

12. What are the different services and mechanisms for providing network security ? **(12 marks)**

13. Explain access control mechanism, What do you mean by discretionary and mandatory access control ?

Or

14. What are the different authentication mechanisms associated with OS Security ?

Turn over

15. With an example, explain the Diffie-Hellman key exchange algorithm.

Or

16. Compare RSA and DES algorithms. List the merits and demerits of each.

17. Explain the IP security architecture with relevant figures.

Or

18. With an example, explain the E-mail security.

19. What is the relevance of database security and explain statistical database security ?

Or

20. Explain how MAC provides multilevel security for database.

(5 × 12 = 60 marks)

Answer all questions.
Each question carries 12 marks.

- 1. Describe the relevance of network security.
- 2. Write a note on viruses.
- 3. Describe the different levels of computer security.
- 4. What are the protection mechanisms adopted for OS security?
- 5. With figure, explain encryption and decryption mechanisms.
- 6. What do you mean by crypt analysis?
- 7. Differentiate bit and application security.
- 8. Define application security.
- 9. Describe SQL security.
- 10. Define statistical database security.

(10 × 6 = 60 marks)

Part B

Answer all the questions.
Each question carries 12 marks.

- 11. Explain the following:
 - (a) Hackers
 - (b) Cracker
- 12. Explain access control mechanism. What do you mean by discretionary and mandatory access control?
- 13. What are the different network and workstation for providing secure access? (12 marks)
- 14. Explain access control mechanism. What do you mean by discretionary and mandatory access control?
- 15. What are the different access control mechanisms associated with OS security?

Turn over

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Reg. No.....

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B.TECH. DEGREE EXAMINATION, APRIL 2011

Eighth Semester

Branch : Computer Science and Engineering

HIGH PERFORMANCE COMPUTING (R)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

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

1. Explain Flynn's Classification.
2. What do you mean by parallel processing ? Explain.
3. Explain the classification of pipeline processors.
4. Explain instruction prefetch.
5. List the difference between static and dynamic network.
6. How do array processor achieve data routing and masking ?
7. Explain parallel synchronization mechanism in multiprocessor.
8. What are the software requirements for multiprocessor ?
9. Explain the working of Irvine data flow computer.
10. Explain the use of data flow graph.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. Briefly discuss the application of parallel processing in various fields. (12 marks)
- Or*
12. With neat block diagram explain in detail about the various programmatic levels of parallel processing. (12 marks)

Turn over

13. Write notes on :

(a) Linear pipelining.

(6 marks)

(b) Arithmetic pipeline.

(6 marks)

Or

14. With a neat diagram explain the architecture of typical vector processor with multiple functional pipes.

(12 marks)

15. Describe the features of various interconnection networks used by SIMD processor.

(12 marks)

Or

16. Discuss in detail about memory organization.

(12 marks)

17. Explain how parallelism can be exploited in programming language ?

(12 marks)

Or

18. Discuss in detail loosely coupled and tightly multiprocessor.

(12 marks)

19. With neat diagram explain static and dynamic data flow computer.

(12 marks)

Or

20. With block diagram discuss the characteristics of data flow computers.

(12 marks)

[5 × 12 = 60 marks]

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B.TECH. DEGREE EXAMINATION, APRIL 2011

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. With reference to a language, explain the concept of a virtual computer.
2. List out and explain the issues of language design.
3. Differentiate between syntax and semantics.
4. Explain with example the implicit and explicit type conversion.
5. What is aliasing ? Explain with example.
6. What are the advantages of using GOTO statements for sequence control.
7. Write notes on recursive subprograms.
8. What is Polymorphism ? Explain.
9. What is exception ? How exception handling is done in JAVA ?
10. What are the advantages of parallel processing ?

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. Write briefly about the effect of environment on languages with reference to interactive environment.

Or

12. Define binding. Explain in detail different classes of binding time.

13. What is meant by declaration ? Briefly explain the purposes if declaration.

Or

14. Briefly explain how the type checking and type conversion is done in programming languages ?

15. Describe in detail the sequence control between statements.

Or

Turn over

- 16. Describe stack-based storage management in detail.
- 17. Discuss in detail the sequence control within expressions.

Or

- 18. Explain the general scheme of implementation of sub program sequence control and recessive sub program sequence control.
- 19. What is parallel processing ? Describe its principles and illustrate with suitable examples.

Or

- 20. Describe the Hardware Development in detail.

(5 × 12 = 60 marks)

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B.TECH. DEGREE EXAMINATION, APRIL 2011

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. Why do we go for AI to solve a problem rather than conventional methods ?
2. What are methods of BFS and DFS ?
3. Define Heuristic functions.
4. What is meant by stimulated annealing ?
5. Differentiate games and search.
6. What are frames and semantic nets ?
7. Define Modus Ponens's rule.
8. What is meant by Resolution ?
9. How facts can be represented in prolog ?
10. What are Facts and Rules in Prolog ?

(10 × 4 = 40 marks)

Part B

Answer all questions.

Each question carries 12 marks.

11. What are objectives of AI problems ?

Or
12. Compare various searching strategies.
13. What is meant by constraint satisfaction search ? Explain with example.

Or
14. Explain the HILL climbing algorithm.
15. Draw and explain use of semantic network for the following statement "Raju went to Calicut to deposit fees to write MBA examination".

Or

Turn over

16. Compare the methodologies in Crames and Search problems.
17. Prove by resolution that "Collins should not be a suspect". From the premises : Victim died of a heart attack Killer was friend of victim. Apartment was blue and infact. Murder occurred in midnight. There is a reason to suspect that Collins murdered the victim.

Or

18. Explain an algorithm to compute well formed formula into the clausal form.
19. What are the important abstract data types of prolog ?

Or

20. Discuss with examples the Meta Predicates and Meta interpreters.

(5 × 12 = 60 marks)

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B.TECH. DEGREE EXAMINATION, APRIL 2011

Eighth Semester

Branch : Computer Science and Engineering/IT

CLIENT-SERVER COMPUTING (Elective II) (RT)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 4 marks.

1. What is the need of client-server computing ?
2. Differentiate client server computing and heterogenous computing.
3. Write short note on client server interaction management.
4. Give examples for client server implementations.
5. Differentiate multi-programming and multi-tasking.
6. List the advantages of multi-processor.
7. Write short note on semaphores. Explain its wage with an example.
8. Define processing queues.
9. Discuss the different communication protocols.
10. Differentiate n/w communication and inter process communication protocols.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. List the advantages and disadvantages of client server computing. (12 marks)
- Or*
12. Explain the client server databases. How it is useful for client server communication ? (12 marks)
 13. Explain the following : —
 - (i) Communication Technique Protocols. (6 marks)
 - (ii) Client Server Interaction Protocols. (6 marks)

Or

Turn over

14. Explain the preparation and optimization of applications for client server. (12 marks)

15. Define processor. Note on child and parent processor. (12 marks)

Or

16. Discuss the server communication model. (12 marks)

17. What do you mean by Scheduling ? How scheduling is implemented in client server model ? (12 marks)

Or

18. Define context switching. What do you mean by context switching pre emptive systems ? (12 marks)

19. Explain the inter process communication. How it is achieved ? (12 marks)

Or

20. Discuss the client server applications. How to build the portable client server applications. (12 marks)

[5 × 12 = 60 marks]

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B.TECH. DEGREE EXAMINATION, APRIL 2011

Eighth Semester

Branch : Computer Science and Engineering/Information Technology

2. DISTRIBUTED COMPUTING—(Elective II) (RT)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 4 marks.

1. Write a note on the evolution of distributed systems.
2. Write short note on IP protocol.
3. Explain the distributed file system requirements.
4. With figure explain the NFS architecture.
5. Differentiate closed groups and open groups.
6. Define the term trashing.
7. Explain the process migration. When it is needed ?
8. Explain load balancing and load sharing.
9. What do you mean by the term intention lists ?
10. What is a deadlock in distributed systems ?

(10 × 4 = 40 marks)

Part B

Answer any five questions.

Each question carries 12 marks.

11. List the advantages and disadvantages of distributed system. (12 marks)

Or

12. Give description about the following : —

(i) Process management in MACH. (4 marks)

(ii) Memory management in MACH. (4 marks)

(iii) Communication in MACH. (4 marks)

13. Explain the different ways of dealing with the shared files in distributed systems .

(12 marks)
Turn over

Or

14. Explain the names and attributes used in CDDA. (12 marks)

15. Discuss the different classes of failures that can occur in RPC systems. (12 marks)

Or

16. Define mutual exclusion. What are various algorithms used in distributed systems? (12 marks)

17. With figure explain the receiver initiated algorithm. (12 marks)

Or

18. Discuss various approaches of task management. (12 marks)

19. Discuss the transaction recovery methods. (12 marks)

Or

20. With figure explain : (i) Initialized deadlock detection. (6 marks)

(ii) Distributed deadlock detection. (6 marks)

[5 × 12 = 60 marks]

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B.TECH. DEGREE EXAMINATION, APRIL 2011

Eighth Semester

Branch : Computer Science and Engineering

MULTIMEDIA SYSTEMS (Elective III) (R)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

Part A

Each question carries 4 marks.

1. Describe the analog and digital text and graphic image editors used in a multimedia system.
2. Discuss the software applications of multimedia.
3. Classify image types and list the compression standards used in multimedia systems.
4. Describe the basic principle of capture and playback techniques.
5. Describe the rate, technical background, modulation schemes and capacity of CD digital audio.
6. What is a multimedia work station. Explain its working.
7. What is format classes? Explain.
8. What is synchronization? Explain its need.
9. Describe the video conferencing method.
10. Explain the future trends in multimedia.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. What are MIDI protocols? Explain its role in digital music making. Compare MIDI with digital audio.

Or

12. Describe the basic and authoring tools used in multimedia.
13. Explain the run length coding and predictive coding methods used for video compression in multimedia systems.

Or

Turn over

14. (a) With architecture, explain the coding methods used in JPEG. Discuss its performance.
(b) Describe DVI technology.
15. (a) Explain digital audio representation and processing architecture.
(b) Compare performance aspects of CD-audio CD-ROM and CD-I.

Or

16. Explain the following :

- (a) Digital video interactive.
(b) Multimedia extensions.

17. Describe synchronization in MHEG with architectural details of MHEG engine.

Or

18. What is HLL? How media is considered differently in a programming language.
19. What is virtual reality? Explain. Describe issues in virtual reality. Discuss its future trends.

Or

20. Describe the architecture, working and uses of a multimedia network.

(5 × 12 = 60 marks)

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B.TECH. DEGREE EXAMINATION, APRIL 2011

Eighth Semester

Branch : Computer Science Engineering/Information Technology

NEURAL NETWORKS—(Elective III) (R, T)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 4 marks.

1. Define an activation function.
2. Explain the terms threshold and bias.
3. What are the advantages of back propagation network ?
4. What is meant by temporal instability ?
5. What are the advantages of CPN Compared to BPN ?
6. Discuss the two different types of layers used in CPN.
7. What are the characteristics of Boltzman's training ?
8. Explain the artificial specific heat method.
9. What is an associative memory ?
10. Explain the architectural classification of ART networks.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. Explain with diagrams the training process of ANNs.

Or

12. Describe the training algorithms used for ANN.
13. Define the back propagation algorithm. Describe an application of BPN.

Or

Turn over

14. What is network, paralysis ? Explain the methods to avoid the situation.
15. Describe the architecture of a full CPN. Discuss its training process also.

Or

16. Explain with diagrams an application of forward only CPN.
17. Describe the architecture and training of Cauchy's machine.

Or

18. Explain the role of ANN in general non-linear optimization problems.
19. Explain the discrete Hopfield network with its architecture.

Or

20. Explain the basic concept behind ART. What are the applications of ART networks ?

(5 × 12 = 60 marks)