

(DMCA301)

ASSIGNMENT - 1
M.C.A.DEGREE EXAMINATION, MAY - 2019

(Third Year)

ARTIFICIAL INTELLIGENCE

Maximum : 30 MARKS

Answer ALL questions.

- Q1)** a) Write about the problem characteristics with suitable example.
b) State 8 – puzzle problem? Construct state space tree for this problem.
- Q2)** Explain A* algorithm with example and also explain the effect of over-estimate and under estimate of it on A* algorithm.
- Q3)** Discuss various issues in knowledge representation.
- Q4)** Express the following sentences in predicate logic formulae.
“All people who are not poor and are smart and happy. Those people who read are not stupid. Many can read and is wealthy. Happy people have exciting lives. Anybody who is wealthy is not poor. John is wealthy but not happy. A smart person is not stupid”.
- a) Convert the formulae into clausal form.
b) Use resolution to answer the query:- “Can anybody be found with an exciting life”?
- Q5)** What is an expert system? Discuss expert system architecture in detail.
- Q6)** Describe different applications of Artificial intelligence.
- Q7)** State and explain about generate and algorithm.
- Q8)** Write about means - ends analysis with example.
- Q9)** Describe unification algorithm.

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ASSIGNMENT - 2
M.C.A. DEGREE EXAMINATION, MAY - 2019

(Third Year)

ARTIFICIAL INTELLIGENCE

Maximum : 30 MARKS

Answer ALL questions.

- Q1)* Differentiate forward and backward reasoning.
- Q2)* Write about dependency directed backtracking.
- Q3)* Explain about expert system shell.
- Q4)* Write short notes on ontologies.
- Q5)* Define the state space approach.
- Q6)* Define natural deduction.
- Q7)* Define monotonic reasoning.
- Q8)* Give the limitations of hill climbing.
- Q9)* What is declarative knowledge?



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ASSIGNMENT - 1
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(Third Year)

CRYPTOGRAPHY AND NETWORK SECURITY

Maximum : 30 MARKS

Answer ALL questions.

- Q1)** Explain about Data Encryption Standard (DES) in detail.
- Q2)** What are Prime and Relatively Prime Numbers? Explain any two methods for testing prime numbers.
- Q3)** Explain the round functions of IDEA algorithm.
- Q4)** Explain in detail Digital Signature Standard approach and its algorithm.
- Q5)** Draw the IP Security ESP format and discuss the protocols used to provide IP security.
- Q6)** Write about network security model with neat diagram.
- Q7)** What are the design parameters of Feistel cipher network?
- Q8)** What is Public Key Encryption? State the difference between conventional encryption and public key encryption.
- Q9)** Determine the GCD (24140, 16762) using Euclid's algorithm.

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ASSIGNMENT - 2

M.C.A. DEGREE EXAMINATION, MAY - 2019

(Third Year)

CRYPTOGRAPHY AND NETWORK SECURITY

Maximum : 30 MARKS

Answer ALL questions.

- Q1)** What you meant by hash function? Differentiate MAC and Hash function.
- Q2)** What are the similarities and differences between S? MIME and PGP?
- Q3)** Describe primitive operations of CAST – 128 Encryption.
- Q4)** What is a firewall? What is the need for firewalls?
- Q5)** Define steganography.
- Q6)** What is triple encryption?
- Q7)** Define trusted system.
- Q8)** Define confidentiality.
- Q9)** What is crypt analysis?



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ASSIGNMENT - 1
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EMBEDDED SYSTEMS

Maximum : 30 MARKS

Answer ALL questions.

- Q1)** Explain about Custom single-purpose processor design.
- Q2)** Explain about UART, LCD controller and Keypad Controller.
- Q3)** Explain about Cache mapping techniques and Cache replacement policy.
- Q4)** Explain about the high level implementation of the CNTL module in digital camera.
- Q5)** Explain about Hierarchical/Concurrent state machines and Statecharts.
- Q6)** Explain about Sequential logic design.
- Q7)** List three main approaches to improving the design process for increased productivity.
- Q8)** Explain about Stepper motor controller.
- Q9)** What is Cache memory?

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ASSIGNMENT - 2
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(Third Year)

EMBEDDED SYSTEMS

Maximum : 30 MARKS

Answer ALL questions.

- Q1)** Explain about CCDPP.
- Q2)** Describe the implementation of digital camera with microcontroller and CCDPP/DCT.
- Q3)** Explain about Program-state machines.
- Q4)** Explain about the Implementing concurrent processes.
- Q5)** What is a multiplexer?
- Q6)** What is RTC?
- Q7)** What is write-through technique?
- Q8)** List nonfunctional requirements of digital camera design.
- Q9)** Explain about Processes and threads.



(DMCA304)

ASSIGNMENT - 1

M.C.A. DEGREE EXAMINATION, MAY - 2019

(Third Year)

DATAMINING TECHNIQUES

Maximum : 30 MARKS

Answer ALL questions.

- Q1)** Discuss about various components of datamining algorithms.
- Q2)** Explain the 'Star' and 'Snowflake' schemas of data warehouse.
- Q3)** Explain the steps of the "Apriori Algorithm" for mining frequent item sets.
- Q4)** Explain Linear & Non-Linear Regression methods of Predictions.
- Q5)** Explain the Agglomerative Hierarchical clustering with an example.
- Q6)** Describe discriminative classification and its decision boundaries.
- Q7)** What are OLAP operations in the multi-dimensional data model?
- Q8)** Write about patterns for strings.
- Q9)** Explain the Classification by Decision Tree Induction Algorithm.

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ASSIGNMENT - 2
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DATAMINING TECHNIQUES

Maximum : 30 MARKS

Answer ALL questions.

- Q1)** Briefly explain about pattern structures.
- Q2)** Describe joint distributions for categorical data.
- Q3)** Write about multilayer perceptron's for regression.
- Q4)** Write about score Functions for Partition-Based Clustering.
- Q5)** Define data visualization.
- Q6)** Define perceptron.
- Q7)** Define data cube.
- Q8)** Define support and confidence.
- Q9)** What is OLTP?



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SYSTEMS AUDITING

Maximum : 30 MARKS

Answer ALL questions.

- Q1)** a) Discuss briefly regarding Need of Control and audit of Computers.
b) Explain Audit Risks.
- Q2)** a) Explain briefly how to organize the Programming Team.
b) Discuss about Disaster Recovery Planning.
- Q3)** Explain briefly regarding Concurrency Controls for Database Controls.
- Q4)** Explain briefly regarding Utility Software.
- Q5)** Discuss about Evaluating Information System Use.
- Q6)** Explain Module Implementation and Integrations Strategy.
- Q7)** Explain Major Security Threats and Remedial measures.
- Q8)** Explain Online Output Production and Distribution controls.
- Q9)** Discuss briefly regarding Expert Systems.

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SYSTEMS AUDITING
Maximum : 30 MARKS
Answer ALL questions.

- Q1)** What is meant by Program source-Code Review?
- Q2)** Write about Implementing Concurrent Auditing Techniques.
- Q3)** Explain a model of information system effectiveness.
- Q4)** Discuss Topological Controls.
- Q5)** What is the importance of Testing?
- Q6)** Define error Propagation codes.
- Q7)** What is Object Data Model Integrity Constraints?
- Q8)** Give benefits and costs of code comparison.
- Q9)** What are Analytical models?

