

ASSIGNMENT - 1, DEC - 2016.

M.C.A. THIRD YEAR DEGREE

PAPER- I : ARTIFICIAL INTELLIGENCE

Maximum : 30 MARKS

Answer ALL questions.

- 1) a) What is AI technique?
b) What are characteristics of production system?
 - 2) What is Heuristic function? Explain about Hill climbing in detail.
 - 3) Why A* algorithm is admissible and computationally optimal?
 - 4) Discuss about BFS algorithm.
 - 5) Discuss various issues related to knowledge representation.
 - 6) Discuss about Bayes theorem.
 - 7) Describe conceptual Dependency theory.
 - 8) What is Intelligence?
 - 9) Define Declarative knowledge.
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ASSIGNMENT - 2, DEC - 2016.

M.C.A. THIRD YEAR DEGREE

PAPER- I : ARTIFICIAL INTELLIGENCE

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain different approaches to create a semantic representation of a sentence.
 - 2) Describe the architecture of typical expert systems and its features.
 - 3) What do you mean by Intelligent editor?
 - 4) What is Learning? Explain its types.
 - 5) Explain Semantic Grammar.
 - 6) Discuss about expert system shells.
 - 7) What is script?
 - 8) What is knowledge Acquisition?
 - 9) What is Matching?
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PAPER- II : CRYPTOGRAPHY AND NETWORK SECURITY

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain the DES encryption algorithm.
 - 2) Write the extended Euclid algorithm. Use it to calculate the multiplicative inverse of $(x^7 + x + 1) \bmod (x^8 + x^4 + x^3 + x + 1)$.
 - 3) Describe the key distribution technique for symmetric encryption.
 - 4) Explain Hill cipher with an example.
 - 5) Explain the difference between differential and linear cryptanalysis.
 - 6) Determine $\gcd(24140, 16762)$.
 - 7) Describe how S-box is constructed in AES.
 - 8) What is secret key?
 - 9) What is timing attack?
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PAPER- II : CRYPTOGRAPHY AND NETWORK SECURITY

Maximum : 30 MARKS

Answer ALL questions.

- 1) Discuss the RSA algorithm and illustrate it with an example.
 - 2) Explain how do you prevent intrusion through password management.
 - 3) Explain RC4 algorithm.
 - 4) Write the Miller-Rabin algorithm to test for primality.
 - 5) Discuss about mutual authentication protocols.
 - 6) Describe about firewall configurations.
 - 7) What is triple encryption?
 - 8) What is key exchange?
 - 9) What is a circuit-level gateway?
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PAPER- III : EMBEDDED SYSTEMS

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain about hardware / software co-design.
 - 2) What are LCD controllers? Explain its significance in embedded systems with an example.
 - 3) What is cache mapping? Discuss various techniques of accomplishing it.
 - 4) Write a note on various types of embedded processors.
 - 5) What are stepper Motor controllers? Explain with an example.
 - 6) Differences between port-based and bus-based I/O.
 - 7) Write a note on read only memory with a neat diagram.
 - 8) What are the uses of Real-time clocks?
 - 9) What is FPGA?
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PAPER- III : EMBEDDED SYSTEMS

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain the functional block diagram of a digital camera with a neat diagram.
 - 2) What is a finite state machine model and discuss various steps in describing the system as a state machine.
 - 3) Explain about various cache mapping techniques.
 - 4) Describe the elevator controller using PSM.
 - 5) Explain about concurrent process model.
 - 6) Explain about hierarchial/concurrent state machines (HCFSM).
 - 7) What are interrupts?
 - 8) What is Memory Management Unit (MMU).
 - 9) What is message passing?
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PAPER- IV : DATA MINING TECHNIQUES

Maximum : 30 MARKS

Answer ALL questions.

- 1) What is the nature of Dataset? Explain different components of Data Mining Algorithms.
 - 2) Describe about CART algorithm for building Tree classifiers.
 - 3) Describe various stochastic components of Model Structures.
 - 4) Explain different parameter optimization methods.
 - 5) What is cluster Analysis? Explain with example.
 - 6) Discuss about Multidimensional scaling.
 - 7) Explain Naive Boyes Model for classification.
 - 8) What is Data Mining?
 - 9) What is Association Rule Mining?
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PAPER- IV : DATA MINING TECHNIQUES

Maximum : 30 MARKS

Answer ALL questions.

- 1) What are Scoring patterns for Data Mining Algorithms? Explain score functions for Descriptive Models.
 - 2) Explain Nearest Neighbour Methods for Classification.
 - 3) What is Modeling? Explain various Models for structured Data.
 - 4) Discuss about Hierarchical clustering.
 - 5) Explain Multivariate parameter optimization.
 - 6) Explain probabilistic interpretation of Linear Regression.
 - 7) Define perceptron.
 - 8) Define data ware housing.
 - 9) What is Multidimensional Indexing?
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M.C.A. THIRD YEAR DEGREE

PAPER- V : SYSTEMS AUDITING

Maximum : 30 MARKS

Answer ALL questions.

- 1) Define information systems audit. Bring out its objectives.
 - 2) Explain in detail about Security Management controls.
 - 3) Explain with examples about boundary controls.
 - 4) Bring out the effects of computers on auditing.
 - 5) Explain end-to-end encryption of communication controls.
 - 6) What are QA functions? List out.
 - 7) Explain various flow controls.
 - 8) What do you mean by auditing?
 - 9) What are database controls used for?
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ASSIGNMENT - 2, DEC - 2016.

M.C.A. THIRD YEAR DEGREE

PAPER- V : SYSTEMS AUDITING

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain about various White-Box test data design methods.
 - 2) Examine the update protocols and report protocols with examples.
 - 3) What are the benefits of code comparison?
 - 4) How do you evaluate system quality?
 - 5) Elucidate the functional capabilities of audit software.
 - 6) Enumerate the factors that affect the effectiveness of information systems.
 - 7) What is mesh topology?
 - 8) What is audit risks?
 - 9) Define Kennel programs.
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