

ASSIGNMENT - 1, DEC - 2016.

M.Sc. (FINAL) SECOND YEAR DEGREE

INFORMATION TECHNOLOGY

PAPER- I : SOFTWARE ENGINEERING

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain the following:
 - a) CMMI
 - b) RAD model
 - 2) Elaborate different requirement engineering tasks.
 - 3) Discuss about class-based modeling of analysis model.
 - 4) Discuss on various types of software myths and the true aspects of these myths.
 - 5) What is meant by unified process? Write about unified process work products.
 - 6) Describe the core principles of software engineering practices.
 - 7) Explain in detail the Hartley-Pirbhai modeling.
 - 8) What is legacy software?
 - 9) What is validation?
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ASSIGNMENT - 2, DEC - 2016.
M.Sc. (FINAL) SECOND YEAR DEGREE
INFORMATION TECHNOLOGY
PAPER- I : SOFTWARE ENGINEERING

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain Block-box testing technique in detail.
 - 2) What is software quality? Discuss about different quality factor.
 - 3) Discuss about data modeling concepts of analysis model.
 - 4) Write about pattern-based software design.
 - 5) Describe the unit testing strategy for conventional software.
 - 6) Explain the CK metric suite for the design model.
 - 7) What are analysis rules of thumb?
 - 8) What is recovery testing?
 - 9) What is the use of UML diagrams?
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ASSIGNMENT - 1, DEC - 2016.

M.Sc. (FINAL) SECOND YEAR DEGREE

INFORMATION TECHNOLOGY

PAPER- II : PROGRAMMING WITH C++

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain in detail control structures with suitable program.
 - 2) Write a program in C++ for addition & multiplication of two matrices.
 - 3) Explain in detail overloading constructors. Write a program with multiple constructors for the single class.
 - 4) Explain the key concepts of OOPs.
 - 5) What is the use of `getline()` function? Which two arguments does it require?
 - 6) What are the Recursive Constructors? Write a program to call constructor recursively.
 - 7) Write a program to Create dynamically an array of objects of class 'type'. Use 'new' operator.
 - 8) Define string & array.
 - 9) What is local class.
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ASSIGNMENT - 2, DEC - 2016.
M.Sc. (FINAL) SECOND YEAR DEGREE
INFORMATION TECHNOLOGY
PAPER- II : PROGRAMMING WITH C++

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain about Exception handling in detail with example.
 - 2) Generate STL programming model with types in detail.
 - 3) What are abstract classes? Explain.
 - 4) Explain bubble sort using function template.
 - 5) Write a program to pass the value of variable by value, reference & address & display the result.
 - 6) What are containers? Give the types with heat program.
 - 7) Define L value & R value.
 - 8) What is scope access operator?
 - 9) What is constant pointers?
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ASSIGNMENT - 1, DEC - 2016.

M.Sc. (FINAL) SECOND YEAR DEGREE

INFORMATION TECHNOLOGY

PAPER- III : TCP/IP

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain about TCP/IP protocol suite with neat diagram.
 - 2) Explain about IP protocol in detail.
 - 3) Explain about TCP in detail.
 - 4) Explain about internetworking.
 - 5) Write a short notes on classless & classful addressing.
 - 6) Write about ARP protocol.
 - 7) Discuss about datagram delivery in IP.
 - 8) What is internet?
 - 9) Define socket?
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ASSIGNMENT - 2, DEC - 2016.

M.Sc. (FINAL) SECOND YEAR DEGREE

INFORMATION TECHNOLOGY

PAPER- III : TCP/IP

Maximum : 30 MARKS

Answer ALL questions.

- 1) Discuss unicast routing protocols in detail.
 - 2) Explain client-serves model in detail.
 - 3) Write a short notes on multicast routing protocols.
 - 4) Discuss about socket interface.
 - 5) Write about TCP/IP over ATM networks.
 - 6) Write a short notes on mobile IP.
 - 7) What is routing?
 - 8) Define protocol.
 - 9) What is packet?
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ASSIGNMENT - 1, DEC - 2016.

M.Sc. (FINAL) SECOND YEAR DEGREE

INFORMATION TECHNOLOGY

PAPER- IV : DATA MINING AND TECHNIQUES

Maximum : 30 MARKS

Answer ALL questions.

- 1) What are the major issues in Data Mining task? Explain in brief.
 - 2) Explain Apriori algorithm for association rule mining.
 - 3) Explain classification and Regression Trees.
 - 4) Explain two methods for computing similarity or distance.
 - 5) Explain MLP for Regression and classification.
 - 6) Explain Back propagation data mining algorithm.
 - 7) Explain K-means algorithm.
 - 8) Web Mining.
 - 9) Decision tree.
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ASSIGNMENT - 2, DEC - 2016.

M.Sc. (FINAL) SECOND YEAR DEGREE

INFORMATION TECHNOLOGY

PAPER- IV : DATA MINING AND TECHNIQUES

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain Data Reduction using factor analysis and principle components analysis.
 - 2) Explain Hierarchy of Measurements.
 - 3) Explain CART algorithm.
 - 4) What are special-purpose algorithms for Disk Access?
 - 5) State the different patterns for strings.
 - 6) Explain Modeling fundamentals.
 - 7) Meta data.
 - 8) Optimization.
 - 9) Distance Metrics.
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ASSIGNMENT - 1, DEC - 2016.

M.Sc. (FINAL) SECOND YEAR DEGREE

INFORMATION TECHNOLOGY

PAPER- V : CRYPTOGRAPHY AND NETWORK SECURITY

Maximum : 30 MARKS

Answer ALL questions.

- 1) Discuss the motivation for the Feistel block cipher structure and also describe some of its implications.
 - 2) Describe the AES key expansion algorithm.
 - 3) Overview the use of random numbers in network security and explain various approaches to generate random numbers.
 - 4) Explain the playfair cipher with an example.
 - 5) Describe the purpose of the S-boxes in DES algorithm.
 - 6) Determine the multiplicative inverse of $x^3 + x + 1$ in $GF(2^4)$ with $m(x) = x^4 + x + 1$.
 - 7) Write about AES evaluation.
 - 8) What is one-time pad?
 - 9) What is key agility?
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ASSIGNMENT - 2, DEC - 2016.

M.Sc. (FINAL) SECOND YEAR DEGREE

INFORMATION TECHNOLOGY

PAPER- V : CRYPTOGRAPHY AND NETWORK SECURITY

Maximum : 30 MARKS

Answer ALL questions.

- 1) Explain RSA algorithm and give an illustrative example.
 - 2) Discuss about different intrusion detection approaches.
 - 3) Briefly explain the output feedback mode of operation.
 - 4) Write about public-key cryptography authentication and secrecy.
 - 5) Describe the digital signature algorithms.
 - 6) Explain the Trojan Horse defense system.
 - 7) What is Euler's totient function?
 - 8) What is digital signature?
 - 9) What is suppress-replay attack?
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M.Sc. (FINAL) SECOND YEAR DEGREE

INFORMATION TECHNOLOGY

PAPER- VI : ARTIFICIAL INTELLIGENCE

Maximum : 30 MARKS

Answer ALL questions.

- 1) a) What is AI technique?
b) What are problem characteristics? Explain step by step.
 - 2) Explain Heuristic search techniques in detail.
 - 3) Explain Bayesian method of Reasoning?
 - 4) What are the categories of production system?
 - 5) Explain Means-Ends Analysis.
 - 6) Explain Unification Algorithm.
 - 7) Differentiate Procedural and Declarative knowledge.
 - 8) What is the criteria for success?
 - 9) What is role of knowledge?
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ASSIGNMENT - 2, DEC - 2016.

M.Sc. (FINAL) SECOND YEAR DEGREE

INFORMATION TECHNOLOGY

PAPER- VI : ARTIFICIAL INTELLIGENCE

Maximum : 30 MARKS

Answer ALL questions.

- 1) Describe various parsing techniques with example.
 - 2) What are the components of knowledge Based system? Explain in detail about each component.
 - 3) Write a note on Inheritable knowledge.
 - 4) Discuss about Conflict Resolution.
 - 5) Explain the concept of script .
 - 6) What is knowledge acquisition?
 - 7) What is conceptual dependency?
 - 8) Define frame.
 - 9) What is an expert system.
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