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M.Sc. DEGREE EXAMINATION, DEC. – 2016

Second Year

INFORMATION TECHNOLOGY

Software Engineering

Time : 3 Hours

Maximum Marks : 70

Section - A

(3 x 15 = 45)

Answer any Three questions

- Q1)** Explain Waterfall and Concurrent development process models.
- Q2)** Discuss about the eliciting requirements of requirements engineering.
- Q3)** Explain the design concepts of software engineering.
- Q4)** Explain White-box testing techniques in detail.
- Q5)** Explain CK metrics suite and Component-level design metrics for design model.

Section - B

(5 x 4 = 20)

Answer any Five questions

- Q6)** Discuss about different software myths and their corresponding realities.
- Q7)** What are software engineering layers?
- Q8)** Write the use-case template for surveillance of safe home system.
- Q9)** What are SQA activities?
- Q10)** Explain verification and validation.

Q11) What are size-oriented metrics? Explain.

Q12) Explain Basis-path testing.

Q13) What are ISO 9126 quality factors?

Section - C

(5 x 1 = 5)

Answer All questions

Q14) What is Refactoring?

Q15) What is cohesion?

Q16) What is legacy software?

Q17) Define Metric.

Q18) Define Software Engineering.

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M.Sc. DEGREE EXAMINATION, DEC. – 2016

(Second Year)

INFORMATION TECHNOLOGY

Programming with C++

Time : 3 Hours

Maximum Marks : 70

Section - A

(3 x 15 = 45)

Answer any Three questions

- Q1)** Explain control structures in detail.
- Q2)** Explain any 5 string functions in C++.
- Q3)** Define pointer? Explain 'this' pointer.
- Q4)** Explain Multiple-inheritance? Write a program to implement it.
- Q5)** Explain in detail the exception handling mechanism in C++.

Section - B

(5 x 4 = 20)

Answer any Five questions

- Q6)** Explain namespaces.
- Q7)** Explain inline functions and also state their limitations.
- Q8)** Differentiate between a pointer and a reference variable.
- Q9)** Define new and delete operators. State the advantages of new over malloc().
- Q10)** Explain the 3 access specifiers.

Q11) What is a container class? Explain.

Q12) Explain catch(...) statement.

Q13) What is an pure virtual function? State its purpose.

Section - C

(5 x 1 = 5)

Answer All questions

Q14) Late binding.

Q15) Data encapsulation.

Q16) Friend function.

Q17) Destructor.

Q18) Abstract class.

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M.Sc. (Final) DEGREE EXAMINATION, DEC. – 2016

(Second Year)

INFORMATION TECHNOLOGY

(Paper – III): TCP/IP

Time : 3 Hours

Maximum Marks : 70

Section - A

(3 x 15 = 45)

Answer any Three questions

- Q1)** Differentiate between the OSI reference model and TCP/IP reference model with neat diagram.
- Q2)** Explain in detail the routing protocol.
- Q3)** Explain in detail UDP and TCP protocols.
- Q4)** Explain in detail network technologies.
- Q5)** Explain about routing protocol in detail.

Section - B

(5 x 4 = 20)

Answer any Five questions

- Q6)** Describe the client-server model.
- Q7)** Discuss about Internet Control Message Protocol.
- Q8)** Write about DHCP.
- Q9)** Explain about RARP.
- Q10)** Write about congestion control.

Q11) What are the characteristics of mobile IP.

Q12) Write down the difference between classfull and classless addressing.

Q13) Write a short note on error and control message.

Section - C

(5 x 1 = 5)

Answer All questions

Q14) What is internet?

Q15) Write about Socket Interface.

Q16) What is datagram?

Q17) Define IP.

Q18) What is a protocol?



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M.Sc. DEGREE EXAMINATION, DEC. – 2016

(Second Year)

INFORMATION TECHNOLOGY

Data Mining and Techniques

Time : 3 Hours

Maximum Marks : 70

Section - A

(3 x 15 = 45)

Answer any Three questions

- Q1)** What is scaling? Explain multi-dimensional scaling factors.
- Q2)** Explain vector-space algorithms for Text-retrieval.
- Q3)** Explain Naïve Bayes theorem.
- Q4)** What are scoring patterns for datamining algorithms? Explain Score functions and descriptive models.
- Q5)** Explain Tree model in detail.

Section - B

(5 x 4 = 20)

Answer any Five questions

- Q6)** Explain data mining tasks.
- Q7)** Explain Apriori algorithm for association rule mining.
- Q8)** Explain about tree classifiers.
- Q9)** Explain about EM algorithm.
- Q10)** What is cluster analysis? Give an example.

Q11) Briefly explain un-supervised learning.

Q12) Explain basic algorithm for parameter based clustering.

Q13) What is a multivariate parameter optimization.

Section - C

(5 x 1 = 5)

Answer All questions

Q14) What is perception?

Q15) Explain generalization.

Q16) Write about Classification.

Q17) What is score function?

Q18) What are Index structures?



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M.Sc. DEGREE EXAMINATION, DEC. – 2016

(Second Year)

INFORMATION TECHNOLOGY

Cryptography and Network Security

Time : 3 Hours

Maximum Marks : 70

Section - A

(3 x 15 = 45)

Answer any Three questions

- Q1)** Discuss the different types of attacks elaborately.
- Q2)** Explain DES algorithm.
- Q3)** Explain in detail about public-key cryptography and its uses.
- Q4)** What is a Message Digest? Explain MD5 algorithm.
- Q5)** What is a Firewall? How does it ensure security?

Section - B

(5 x 4 = 20)

Answer any Five questions

- Q6)** Explain about key expansion schedule of AES.
- Q7)** Write a short note on Transposition techniques.
- Q8)** Explain RSA algorithm.
- Q9)** Explain Diffie-Hellman key exchange algorithm.
- Q10)** Write a few words about Linear and differential cryptanalysis.

Q11) Briefly describe Fermat's Theorem.

Q12) Explain CFB and CTR block cipher modes of operations.

Q13) Briefly explain the DSS algorithm.

Section - C

(5 x 1 = 5)

Answer All questions

Q14) Define honey pot.

Q15) What are security services?

Q16) What is a hash function?

Q17) What is user authentication?

Q18) State the 3 objectives of security.



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M.Sc. DEGREE EXAMINATION, DECEMBER – 2016

Second Year

INFORMATION TECHNOLOGY

Artificial Intelligence

Time : 3 Hours

Maximum Marks : 70

Section - A

(3 x 15 = 45)

Answer any Three questions

- Q1)* What are problem characteristics? Discuss with examples.
- Q2)* Discuss about various approaches to knowledge representation.
- Q3)* Explain A* and AO* algorithms.
- Q4)* Explain the steepest hill climbing algorithm.
- Q5)* Discuss about commonsense ontologies.

Section - B

(5 x 4 = 20)

Answer any Five questions

- Q6)* Explain the concept of question answering.
- Q7)* Explain default reasoning approaches.
- Q8)* Derive production rules of water jug problem.
- Q9)* Explain control knowledge.
- Q10)* Explain Crypt-arithmetic problem.

Q11) Write a short note on Dempster-Shafer Theory.

Q12) Explain about semantic analysis.

Q13) Write a short note on heuristic search technique.

Section - C

(5 x 1 = 5)

Answer All questions

Q14) What is AI?

Q15) Define an Expert System.

Q16) What is natural deduction?

Q17) What is conflict resolution?

Q18) Define abduction.

