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M.Sc. DEGREE EXAMINATION, MAY - 2017

(Second Year)

INFROMATION TECHNOLOGY

Software Engineering

Time : 3 Hours

Maximum Marks : 70

SECTION-A

Answer any three questions

(3 × 15 = 45)

- Q1)** Explain about flow oriented modeling and class based modelling.
- Q2)** Discuss the properties that should be specified as part of architectural design.
- Q3)** Explain about different phases in requirements engineerings.
- Q4)** Explain black box testing methods and its advantages and disadvantages.
- Q5)** Discuss about metric for architectural design and object oriented design.

SECTION-B

Answer five from the following

(5 × 4 = 20)

- Q6)** Distinguish between process and methods.
- Q7)** Mention some of the process activities of requirement elicitation and analysis.
- Q8)** What is a cohesive module? What are the different types of cohesion?
- Q9)** Write short notes on boundary value analysis.
- Q10)** Distinguish between alpha and beta testing.

Q11) Write about testing of client server architectures.

Q12) Describe function based metrics for analysis model.

Q13) Describe the attributes of effective software metrics.

SECTION-C

Answer all questions

(5 × 1 = 5)

Q14) Define software process.

Q15) Define static verification.

Q16) What is benefit of modular system?

Q17) Define system testing.

Q18) What is software metric?



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M.Sc. DEGREE EXAMINATION, MAY – 2017

Second Year

INFORMATION TECHNOLOGY

Programming with C++

Time : 3 Hours

Maximum Marks: 70

SECTION - A

Answer Any 3 Questions

(3 × 15 = 45)

- Q1)** State and discuss different operators used in C++.
- Q2)** What is constructor? Describe the characteristics of constructors and also discuss different forms of constructors.
- Q3)** How to create class and object in C++? Explain about accessing member functions with suitable example.
- Q4)** Explain about function overloading and operator overloading with suitable example.
- Q5)** Discuss in detail about vectors, container classes and stream hierarchy.

SECTION - B

Answer Any 5 Questions

(5 × 4 = 20)

- Q6)** Describe the characteristics of Object oriented Programming.
- Q7)** What is the usage of 'this' pointer? Demonstrate the usage of returning values using 'this' pointer.
- Q8)** Explain dynamic memory allocation and deallocation of arrays using example.
- Q9)** Write about multilevel and hierarchical inheritance with suitable example.

Q10) Write about inline functions with suitable example.

Q11) Explain early binding late binding with example.

Q12) Describe any five string handling functions with syntax.

Q13) Briefly discuss the concept of virtual functions.

SECTION - C

Answer All Questions

(5 × 1 = 5)

Q14) Define encapsulation.

Q15) What is use of friend function?

Q16) Which operators cannot be overloaded?

Q17) Give the syntax of nested classes.

Q18) Define template.



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M.Sc. DEGREE EXAMINATION, MAY – 2017

Second Year

INFORMATION TECHNOLOGY

TCP / IP

Time : 3 Hours

Maximum Marks: 70

SECTION - A

Answer Any Three Questions (3 × 15 = 45)

- Q1)** Explain about IPv4 subnet Addressing.
- Q2)** Explain about ARP implementation.
- Q3)** Explain about UDP Message Format and interpretation of the UDP Checksum.
- Q4)** Explain about Client-Server Model. Explain about UDP Echo Server.
- Q5)** Explain about DHCP protocol.

SECTION - B

Answer Any Five Questions (5 × 4 = 20)

- Q6)** Explain about Ethernet Frame Format and Packet Size.
- Q7)** Explain about a Classless IPv4 Addressing with example.
- Q8)** Explain about The ARP Cache.
- Q9)** Explain about the purpose and Importance of the Internet Protocol.
- Q10)** Explain about IPv4 UDP Pseudo-Header Format.
- Q11)** Explain about TCP Checksum Computation.
- Q12)** Explain about Link-State Routing.
- Q13)** Explain about ATM networks.

SECTION - C

Answer All Questions

(5 × 1 = 5)

Q14) What is VLAN Technology?

Q15) List three conceptual levels of internet services.

Q16) What is TCP *timestamp*

Q17) What is RTT?

Q18) Explain Servers That Handle Multiple Services.



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M.SC. DEGREE EXAMINATION, MAY - 2017

(Second Year)

INFORMATION TECHNOLOGY

Data Mining and Techniques

Time : 3 Hours

Maximum Marks : 70

SECTION-A

(3 × 15 = 45)

Answer any three questions

- Q1)** What is principal component analysis? Explain
- Q2)** Explain apriori algorithm for association rule mining?
- Q3)** Explain scoring models with different complexities?
- Q4)** Discuss the hierarchical clustering algorithm?
- Q5)** Explain index structures?

SECTION-B

(5 × 4 = 20)

Answer five from the following

- Q6)** What are the tools used displaying more than two variables? Explain?
- Q7)** Explain about statistical inference?
- Q8)** Explain pattern structures for strings?
- Q9)** Explain about systematic search and search heuristics?

Q10) Explain logistics discriminant analysis?

Q11) Explain artificial neural networks?

Q12) Compare OLAP and OLTP?

Q13) Explain the generalized linear models?

SECTION-C

(5 × 1 = 5)

Answer all questions

Q14) What is scatter plot matrix?

Q15) Define meta data?

Q16) Define optimization?

Q17) What is data warehouse?

Q18) What is regression?



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M.Sc. DEGREE EXAMINATION, MAY - 2017

(Second Year)

INFORMATION TECHNOLOGY

Cryptography & Network Security

Time : 3 Hours

Maximum Marks : 70

SECTION-A

Answer three questions

(3 × 15 = 45)

- Q1)** Explain about fermat's and Euler's theorems.
- Q2)** Discuss about DES in detail.
- Q3)** Describe the steps in message digest generation in secure hash algorithm in detail.
- Q4)** Explain about digital signature algorithm with example.
- Q5)** Explain about PGP message generation and reception.

SECTION-B

Answer Five questions

(5 × 4 = 20)

- Q6)** Differentiate active and passive attack. Which attack is related to confidentiality?
- Q7)** Explain about network security model with neat diagram.
- Q8)** What are the principle elements of public key crypto systems?

Q9) Define S/MIME? What are the elements of MIME?

Q10) Compare SHA-1 and MD5 algorithms.

Q11) What is MAC? Describe the functioning of MAC.

Q12) Draw the IP security authentication header.

Q13) Perform encryption and decryption using RSA algorithm for the following $p = 7$,
 $q = 11$, $e = 17$ and $M = 8$.

SECTION-C

Answer All questions

(5 × 1 = 5)

Q14) Define firewall.

Q15) Define public key and private key.

Q16) Define trusted system.

Q17) Define virus.

Q18) Define message digest.



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M.Sc. DEGREE EXAMINATION, MAY – 2017

Second Year

INFORMATION TECHNOLOGY

Artificial Intelligence

Time : 3 Hours

Maximum Marks: 70

SECTION - A

Answer Any Three Questions (3 × 15 = 45)

- Q1)** What is meant by state space approach? Illustrate state space search with suitable example.
- Q2)** Discuss means – ends analysis with robot navigation problem.
- Q3)** Translate the following sentence into predicate form:
- a) Roses are red and Violets are Blue.
 - b) All dogs are Mammals.
 - c) Some program have Bugs.
 - d) All Pompeians died when the volcano erupted in 79 A.D.
 - e) All the indoor games are easy.
- Q4)** Illustrate justification truth maintenance system (JTMS) with ABC murder story.
- Q5)** State and explain common sense ontologies with suitable example.

SECTION - B

Answer Any Five Questions (5 × 4 = 20)

- Q6)** Describe various AI domain tasks.

- Q7)** Describe any five problem characteristics.
- Q8)** Explain the features of AO* algorithm.
- Q9)** Differentiate procedural and declarative knowledge.
- Q10)** Explain unification algorithm.
- Q11)** What is matching? List down different matching techniques.
- Q12)** Write about case based reason with example.
- Q13)** Briefly explain about expert system shell.

SECTION – C

Answer All Questions

(5 × 1 = 5)

- Q14)** Define production system.
- Q15)** What is heuristic function?
- Q16)** Define natural deduction.
- Q17)** What is resolution?
- Q18)** What is an expert system?

