(DMSIT21)

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M.Sc. DEGREE EXAMINATION, MAY – 2018

Second Year

INFORMATION TECHNOLOGY

SOFTWARE ENGINEERING

Time : 3 Hours **Maximum Marks : 70**

SECTION – A **(3 × 15 = 45)**

Answer any THREE questions

Q1) Explain about spiral model and win – win spiral model in detail.

Q2) Discuss about functional and non – functional requirements.

Q3) Explain in detail the design issues while designing User Interface.

Q4) Explain white box and black box testing. Discuss all the testing strategies that are available.

Q5) Discuss COCOMO model with an illustrative example.

SECTION – B **(5 × 4 = 20)**

Answer any five questions

Q6) What are the umbrella activities of software process?

Q7) Describe the benefits of proto typing.

Q8) What is software requirement document? Who are the users of it?

Q9) What is Relationship? Explain Cardinality and Modality with Examples.

Q10) Draw the DFD for order processing.

Q11) What are different levels of testing and the goals of the different levels?

Q12) Briefly explain about Delphi method.

Q13) What is Risk? Explain various categories of it.

SECTION – C

(5 × 1 = 5)

Answer all questions

Q14) What are the merits of incremental model?

Q15) Define data dictionary

Q16) Define unit testing.

Q17) Define cohesion.

Q18) Define software measure.

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(DMSIT22)

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M.Sc. DEGREE EXAMINATION, MAY – 2018

Second Year

INFORMATION TECHNOLOGY

Programming with C++

Time : 3 Hours **Maximum Marks : 70**

SECTION – A **(3 × 15 = 45)**

Answer any THREE questions

Q1) Explain about various data types, constants, identifiers in C++.

Q2) Discuss different parameters passing mechanisms in C++ with suitable example.

Q3) Write a C++ program to create a class STUDENT with data members USN, name and age. Using inheritance, create the classes UGSTUDENT and PGSTUDENT having fields as semester, fees and stipend. Enter the data for 5 students. Find the semester wise average age for all UG and PG students separately.

Q4) What is constructor? Explain different types of constructors and also give characteristics of constructors.

Q5) Discuss the concept of virtual functions, with an example.

SECTION – B **(5 × 4 = 20)**

Answer any five questions

Q6) Describe any four differences between C and C++.

Q7) How to initialize and access two dimensional array?

Q8) What is nested class? Give an example.

Q9) Explain different access specifiers of a class in C++.

Q10) Illustrate multiple inheritance with suitable example.

Q11) What is operator overloading? List the operator overloading restrictions.

Q12) Explain user – defined manipulator with an example.

Q13) Write about function template with syntax.

SECTION – C

(5 × 1 = 5)

Answer all questions

Q14) Define pointer.

Q15) What is scope resolution operator?

Q16) What is destructor?

Q17) What is late binding?

Q18) Define vector class.

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(DMSIT23)

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M.Sc. DEGREE EXAMINATION, MAY – 2018

Second Year

INFORMATION TECHNOLOGY

TCP/IP

Time : 3 Hours **Maximum Marks : 70**

SECTION – A **(3 × 15 = 45)**

Answer any Three questions

Q1) Explain about Fiber Distributed Data Interconnect.

Q2) Explain about Reverse Address Resolution Protocol.

Q3) Explain about the Transmission Control Protocol.

Q4) Explain about Core routers.

Q5) Explain about DHCP.

SECTION – B **(5 × 4 = 20)**

Answer any five questions

Q6) Explain about the Thin – wire Ethernet.

Q7) Explain about Ethernet frame format.

Q8) Explain about the address resolution through direct mapping.

Q9) Explain about ARP message format.

Q10) Explain about UDP Encapsulation and Protocol Layering.

Q11) Explain about Gateway - to - Gateway Protocol.

Q12) Explain about Socket interface.

Q13) Explain about Mobile IP.

SECTION – C (5 × 1 = 5)

Answer all questions

Q14) Explain about IP Multicast Addresses.

Q15) Explain about the purpose of the Internet Protocol.

Q16) What is Out of Band Data?

Q17) Explain about ATM Hardware.

Q18) Explain about socket Listen function.

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(DMSIT24)

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M.Sc. DEGREE EXAMINATION, MAY – 2018

Second Year

INFORMATION TECHNOLOGY

Data Mining and Techniques

Time : 3 Hours **Maximum Marks : 70**

SECTION – A **(3 × 15 = 45)**

Answer any THREE questions

Q1) Discuss in detail about various data mining tasks.

Q2) Explain about the CART Algorithm for Building Tree Classifiers.

Q3) Write about different parameter optimization methods.

Q4) Discuss about partition - based clustering algorithms.

Q5) Explain about data warehousing and online analytical processing (OLAP)

SECTION – B **(5 × 4 = 20)**

Answer any five questions

Q6) Write about various distance measures for data analysis.

Q7) Briefly explain about principle component analysis.

Q8) How to select variables for high – dimensional data.

Q9) Briefly explain about patterns for strings.

Q10) Write the features of EM algorithm.

Q11) Describe joint distributions for categorical data.

Q12) Explain feature selection for classification in High Dimensions.

Q13) Write about multidimensional indexing.

SECTION – C (5 × 1 = 5)

Answer all questions

Q14) Define sampling.

Q15) What is data visualization?

Q16) Give any two data distance measures.

Q17) Define regression.

Q18) Define association rule mining.

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(DMSIT25)

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M.Sc. DEGREE EXAMINATION, MAY – 2018

Second Year

INFORMATION TECHNOLOGY

Cryptography & Network Security

Time : 3 Hours **Maximum Marks : 70**

SECTION – A **(3 × 15 = 45)**

Answer any THREE questions

Q1) Explain about DES in detail.

Q2) Explain about the different classes of polynomial Arithmetic.

Q3) Explain about different types of key distribution techniques.

Q4) Explain about RSA algorithm.

Q5) Explain about the Authentication using symmetric key and Public key approaches.

SECTION – B **(5 × 4 = 20)**

Answer any five questions

Q6) Explain about Steganography.

Q7) What is the difference between differential and linear cryptanalysis?

Q8) Explain about the difference between modular arithmetic and ordinary arithmetic with example.

Q9) What is the difference between the AES decryption algorithm and the equivalent inverse cipher?

Q10) List important design considerations for a stream cipher.

Q11) What is the difference between a session key and a master key?

Q12) What are three broad categories of applications of public – key cryptosystems?

Q13) What requirements should a digital signature scheme satisfy?

SECTION – C

(5 × 1 = 5)

Answer all questions

Q14) What are the essential ingredients of a symmetric cipher?

Q15) What does it mean to say that b is a divisor of a?

Q16) What is a key distribution center?

Q17) What is a primitive root of a number?

Q18) What is a honeypot?

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(DMSIT26)

Total No. of Questions : 18] **[Total No. of Pages : 2**

M.Sc. DEGREE EXAMINATION, MAY – 2018

Second Year

INFORMATION TECHNOLOGY

Artificial Intelligence

Time : 3 Hours **Maximum Marks : 70**

SECTION – A **(3 × 15 = 45)**

Answer any THREE questions

Q1) Explain the State Space with the use of 8 Puzzle Problem.

Q2) Explain about Best – first search algorithm with suitable example.

Q3) Translate these sentences into formulas in predicate logic.

a) John likes all kinds of food.

b) Apples are food.

c) Chicken is food.

d) Anything anyone eats and isn't killed – by is food.

e) Bill eats peanuts and is still alive.

f) Sue eats everything bill eats.

Convert the above formulas into clauses. Prove that John likes peanuts using resolution.

Q4) Explain about Justification Truth Maintenance System (JTMS) with example.

Q5) What is Expert System? Explain architecture, Features and applications of expert system.

SECTION – B **(5 × 4 = 20)**

Answer any five questions

Q6) State and explain Turing test.

Q7) Briefly explain about simulated annealing.

Q8) Compare DFS and BFS search algorithms.

Q9) Write about declarative and procedural knowledge.

Q10) Write about unification theorem in predicate logic.

Q11) Explain non – monotonic reasoning in detail.

Q12) Write short notes on expert system shell.

Q13) What is ontology? Write about common sense ontologies.

SECTION – C **(5 × 1 = 5)**

Answer all questions

Q14) Define AI.

Q15) Define local maxima and ridge.

Q16) What problem deduction?

Q17) What is AND – OR graph?

Q18) Define backward reasoning.

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