

ROLL NO. _____

M.Tech. (CSE) – 2ND SEMESTER
SOFT COMPUTING – 13110201
END TERM THEORY EXAMINATION

Time: 03:00 Hours

Maximum Marks – 100

Instructions:

1. Write your Roll No. on the question paper.
2. Candidate should ensure that they have been provided with correct question paper. Complaints in this regard, if any, should be reported to the invigilator on duty in the examination hall within 15 minutes of the commencement of the exams. No complaints shall be entertained thereafter.
3. Attempt any **FIVE** questions. **Q.1** is compulsory.
4. Draw diagram whenever required.

- Q.1** (a) Explain the structure of Biological Neuron in detail. (5x4=20)
(b) Differentiate between Supervised and Unsupervised Learning.
(c) What are Fuzzy Quantifiers? Explain.
(d) What is membership function? Explain with the help of example.
(e) Describe some activation functions used in Artificial Neural Network.
- Q.2** (a) Explain architecture, application algorithm and training algorithm for Single layer perceptron. Develop a perceptron for **AND** function with bipolar inputs and targets. (12)
(b) Describe some areas which are suitable for the application of Neural Network. (8)
- Q.3** (a) Describe the architecture and dynamics of Hopfield Network. (12)
(b) Design an auto-associative memory to encode the following patterns:
 $A_1 = 01011$ $A_2 = 11101$ $A_3 = 10001$. Check this memory for the pattern 10001. (8)
- Q.4** (a) Write axioms associated with : (5x2=10)
i. Fuzzy Complement
ii. Aggregation Operator
(b) What is a Fuzzy Number? Given two fuzzy numbers A and B. Compute A+B, A-B.

$$A(x) = \begin{cases} 0 & x \leq -1 \text{ \& } x > 3 \\ (x + 1) / 2 & -1 < x \leq 1 \\ (3 - x) / 2 & 1 < x \leq 3 \end{cases}$$

$$B(x) = \begin{cases} 0 & x \leq -1 \text{ \& } x > 5 \\ (x - 1) / 2 & 1 < x \leq 3 \\ (5 - x) / 2 & 3 < x \leq 5 \end{cases}$$

(10)

Q.5 Write short note on the following:

(10x2=20)

- (a) Linguistic Hedges
- (b) Multi-valued Logics

Q.6 (a). Describe uncertainty of crisp set. Let $X = \{\text{low, medium, high}\}$ and $Y = \{1,2,3,4\}$. X and Y are related as follows:

(10)

	1	2	3	4
low	1	1	1	1
medium	1	0	1	0
high	0	1	0	0

Find $U(X)$, $U(Y)$, $U(X,Y)$, $U(Y/X)$, $U(X/Y)$

(b). Describe the fuzziness of fuzzy set.

(10)

*****ETE MAY/JUNE 2018*****

M. Tech. (CSE) – 2nd SEM. EXAMINATIONS; JUNE 2018
Resource Management in Computer System – 13110202

Time: 03:00 Hours

Maximum Marks – 100

Instructions:

1. Write your Roll No. on the question paper.
2. Candidate should ensure that they have been provided with correct question paper. Complaints in this regard, if any, should be made within 15 minutes of the commencement of the exams. No complaints will be entertained thereafter.
3. Attempt any **FIVE** questions. **Q.1** is compulsory.
4. Draw diagram whenever required.

- Q.1** Explain the difference between Round Robin CPU Scheduling and Shortest Job first CPU Scheduling. (20)
- Q.2** Explain Window NT and Linux Architecture. (20)
- Q.3** Write short notes on: (2*10=20)
- a) Bell La Padula model
 - b) Take Grant method
- Q.4** What do you mean by clock synchronization? Explain the concept of Lamport s logic clocks with example. (20)
- Q.5** Answer the following: (2*10=20)
- a) What do you understand by deadlock? Explain the Banker s algorithm of deadlock avoidance with the help of an example.
 - b) Discuss briefly about concurrent processes. How can you relate mutual exclusion with respect to concurrent processes?
- Q.6** What do you mean by swapping? Explain different memory management techniques. (20)

M. TECH (CSE) 2ND SEMESTER
MOBILE & WIRELESS COMMUNICATION - 13110203
END TERM THEORY EXAMINATION

Time: 03:00 Hrs**Max. Marks: 100****Instructions:**

1. Write Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided with correct question paper. Complaint(s) in this regard, if any, should be made within 15 minutes of the commencement of the exam. No complaint in this regard will be entertained thereafter.
3. Q. No 1 is Mandatory & attempt other **FOUR** questions from Q No. 2 to Q. No.6.
4. Marks are indicated against each question.
5. Draw diagram wherever required.

Q.1. Explain the following:**(4X5=20)**

- i). TDMA
- ii). MAC
- iii). Spread Spectrum
- iv). Handover
- v). Mobile IP

Q.2. (a) Explain WLL & Mobile TCP fast retransmission recovery.**(10)****(b) Give the difference between IPv4 & IPv6.****(10)****Q.3. (a) Explain IP packet delivery & IPv6.****(10)****(b) Explain Bluetooth user scenarios.****(10)****Q.4. (a) Define tunneling & reverse tunneling****(10)****(b) Explain wireless transaction protocol & wireless transport layer security.****(10)****Q.5. (a) How handover in satellite system takes place?****(10)****(b) Explain specialized MACK****(10)****Q.6. (a) Define the following:****(10)****i). Classical ALOHA****ii). Slotted ALOHA****(b) Explain Networking & Security in Wireless LAN****(10)**

Roll No. _____

M. Tech. (CSE) - 2nd SEMESTER
Software Verification Validation and Testing - 13110207
END TERM THEORY EXAMINATION

Time: 03:00 Hours

Maximum Marks – 100

Instructions:

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2. Candidate should ensure that they have been provided with correct question paper. Complaints in this regard, if any, should be reported to the invigilator on duty in the examination hall within 15 minutes of the commencement of the exams. No complaints shall be entertained thereafter.
3. Attempt any **FIVE** questions. **Q.1** is compulsory.
4. Draw diagram whenever required.

- Q.1 All Questions are compulsory (5*4 = 20)**
- a) Differentiate between fault and failure.
 - b) Discuss the limitations of testing.
 - c) Explain mutation testing.
 - d) Differentiate between alpha testing and beta testing.
 - e) Why does software fail after it has passed from acceptance testing? Explain
- Q.2 a) How software testing helpful in dynamic verification of behavior of a program on a finite set of test cases. Justify. (10)**
- b) What are the goals of software testing based on defect removal, fault, and failure verification? (10)**
- Q.3 a) Discuss verification of Data Design. (10)**
- b) What are the different types of verification activities that are used to validate software modules? (10)**
- Q.4 a) What is equivalence class partitioning? How it is helpful during black box testing? Discuss with example. (10)**
- b) How basic path testing is helpful to determine independent programs path? Explain with example. (10)**
- Q.5 a) How static testing helpful for reviewing requirement and specification? Also discuss the types of defects that are easier to find during static testing. (10)**
- b) What do you mean by big bang testing? Why this is not appropriate for large systems? (10)**
- Q.6 a) What is debugging? Discuss different types of debugging approaches? How these are helpful for test case design of software module? (10)**
- b) Write short note on :- (10)**
- i. Recovery testing
 - ii. Regression testing
 - iii. Stress testing

*****ETE MAY/JUNE 2018*****