

# CBCS SCHEME

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16/17SCS41

## Fourth Semester M.Tech. Degree Examination, June/July 2019 Machine Learning Techniques

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

### Module-1

- 1 a. Explain the steps in designing a learning system. (06 Marks)  
b. Explain Find-S algorithm using enjoyspent concept and training instances given below. (10 Marks)

Example	Sky	Air temp	Humidity	Wind	Water	Forecast	Enjoyspent
1	Sunny	Warm	Normal	Strong	Warm	Same	Yes
2	Sunny	Warm	High	Strong	Warm	Same	Yes
3	Rainy	Cold	High	Strong	Warm	Change	No
4	Sunny	Warm	High	Strong	Warm	Change	Yes

### OR

- 2 a. Explain ID3 algorithm for decision tree learning. (08 Marks)  
b. Give the decision tree to represent the following Boolean function:  
i)  $A \wedge \neg B$     ii)  $A \text{ XOR } B$     iii)  $A \vee [B \wedge C]$     iv)  $[A \wedge B] \vee [C \wedge D]$ . (08 Marks)

### Module-2

- 3 a. What is artificial neural network? Explain the derivation of gradient descent rule (08 Marks)  
b. Explain the stochastic gradient descent back propagation algorithm for feed forward networks. (08 Marks)

### OR

- 4 a. What is genetic algorithm [GA]? Explain the prototypical genetic algorithm. (08 Marks)  
b. Use crossover and mutation operators on the following strings:  
S1 = 11101001000    S2 = 00001010101 (08 Marks)

### Module-3

- 5 a. Explain Brute force's Baye's concept learning. (10 Marks)  
b. Explain Naïve Baye's classifier. (06 Marks)

### OR

- 6 a. Explain probably approximately correct [PAC] learning model. (10 Marks)  
b. Prove that, if the hypothesis space  $H$  is finite,  $D$  is a sequence of  $m \geq 1$ . Independent randomly drawn examples of some target concept  $C$  for  $0 \leq \epsilon \leq 1$ . The probability that version space  $VS_{H,D}$  is not  $\epsilon$  exhausted is less than or equal to  $|H|e^{-\epsilon m}$ . (06 Marks)

### Module-4

- 7 a. Explain K-nearest neighbor algorithm for a discrete valued function. (08 Marks)  
b. Explain locally weighted linear regression. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42, 8 = 50, will be treated as malpractice.

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OR

- 8 a. Explain learn one rule algorithm. (10 Marks)  
b. Explain basic FOIL algorithm. (06 Marks)

Module-5

- 9 a. What is analytical learning? Explain the analytical learning problem for safe to stack (x, y). (08 Marks)  
b. Explain regression using a single Horn's clause. (08 Marks)

OR

- 10 a. Explain Q function and Q learning algorithm. (10 Marks)  
b. Explain temporal difference learning. (06 Marks)

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# CBCS SCHEME

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16/17SCS424

## Fourth Semester M.Tech. Degree Examination, June/July 2019 Wireless Network and Mobile Computing

Time: 3 hrs.

Max. Marks: 80

*Note: Answer any FIVE full questions, choosing  
ONE full question from each module.*

### Module-1

- 1 a. List out the major categories of middle ware in application tier. Explain them briefly. (08 Marks)  
b. Explain the following GSM entities : i) BSS ii) NSS. (08 Marks)

OR

- 2 a. List and explain the different parameters used in GPRS QoS profiles. (04 Marks)  
b. Explain with neat block diagram architecture of SMS (Short Message Service). (06 Marks)  
c. Explain CDMA data protocol stack format. (06 Marks)

### Module-2

- 3 a. Explain with neat block diagram architecture of mobile IP with their capabilities. (08 Marks)  
b. Explain with neat block diagram the components of PDA. (08 Marks)

OR

- 4 a. Write a short note on cellular IP. (06 Marks)  
b. Write and explain structure of a mobile device. (04 Marks)  
c. Bring out the difference between mobile phones, PDA and communicators. (06 Marks)

### Module-3

- 5 a. Explain with neat block diagram, the smart-client architecture. (06 Marks)  
b. What are the important features that are available in most of the mobile operating system emulators? (05 Marks)  
c. Explain briefly Palm OS architecture. (05 Marks)

OR

- 6 a. Explain the following device emulators. i) Windows CE ii) symbian OS. (08 Marks)  
b. Mention different phases of smart client development cycle with neat block diagram. Explain any two phases in detail. (08 Marks)

### Module-4

- 7 a. Explain the various stages of a wireless internet request with neat block diagram. (10 Marks)  
b. What are the four important principles design of CHTML markup language? (04 Marks)  
c. What is J2EE? (02 Marks)

OR

- 8 a. Explain the following markup languages with inventory sample example : (10 Marks)  
i) HDML ii) HTML.  
b. Mention benefits of WAP. (06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

**Module-5**

- 9 a. Mention different packages available in CDC with their meaning. (03 Marks)  
b. Explain MIDLET lifecycle with neat block diagram. (06 Marks)  
c. Briefly explain security considerations in MIDP. (07 Marks)
- OR**
- 10 a. Mention different API's available in a MIDP with their meanings. (04 Marks)  
b. Write a six important steps for creating a new application in MIDLET model. (06 Marks)  
c. Explain the following terms with respect to MIDP : (06 Marks)  
i) forms ii) items iii) datafields.

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