

Subject Code:H0501/R13

M. Tech –II Semester Regular Examinations, September, 2014

DATA WAREHOUSING AND DATA MINING

(Common to CS and CS&E)

Time: 3 Hours

Max Marks: 60

Answer any FIVE questions

All questions carry EQUAL marks

1. a) Describe any two techniques to compute the similarity/dissimilarity of continuous data.
b) How to define the cubes of different multi dimensional schemas with DMQL ?
2. a) What is an impurity measure ? Describe any three measures for selecting the best split
b) Discuss the Bayesian Classification with an example.
3. a) How to find the frequent sets using the FP Growth ? Explain with example
b) What is concept hierarchy ? How is it useful to the data mining ?
4. a) Explain the Nearest neighborhood classification with algorithm.
b) What is DBSCAN ? What are the strengths and weakness of DB Scan?
5. a) Discuss the Apriori algorithm to generate Frequent set generation.
b) Explain the concept of model over fitting of decision tree induction
6. a) Explain the K-means clustering
b) discuss the Support vector machines.
7. a) Explain the basic agglomerative hierarchical clustering.
b) Discuss the cluster Evaluation Techniques.
8. Write short notes on the following
 - a) Web structure mining.
 - b) Functionality of Search engines
 - c) Ranking of web pages

Subject Code:H4503/R13

M. Tech –II Semester Regular Examinations, September, 2014

WIRELESS COMMUNICATION AND NETWORKS

(Com to SSP, DIP, CE&SP, IP, C&SP, SP&C, M&CE, DECE, E&CE and CS)

Time: 3 Hours

Max Marks: 60

Answer any FIVE questions

All questions carry EQUAL marks

1. a) Describe the concept of *frequency reuse*. Derive the equation for the *frequency reuse ratio*.
b) Consider a cellular system in which the total available voice channels to handle the traffic are 1200. The area of each cell is 9 km^2 and the total coverage area of the system is 3600 km^2 . Determine the system capacity if the cluster size is 4.
2. a) Consider an indoor wireless LAN with $f_c = 900 \text{ MHz}$, cells of radius 100 m, and non-directional antennas. Under the free-space path loss model, what transmit power is required at the access point in order for all terminals within the cell to receive a minimum power of $10 \mu\text{W}$? How does this change if the system frequency is 5 GHz?
b) Explain how the *two-ray model* is used when a single ground reflection dominates the multipath effect.
3. a) What is small-scale fading? Write the factors influencing fading.
b) What is the difference between frequency selective fading and flat fading?
4. a) What are the different receiver diversity combining techniques? Explain.
b) Explain the algorithms for adaptive equalization.
5. a) Compare WLAN and wired LAN technologies.
b) Explain the IEEE 802.11b MAC layer CSMA/CA operation.
6. a) Explain the characteristics of HIPERLAN.
b) Explain different WLAN topologies.
7. a) Find the outage probability of BPSK modulation at $P_b = 10^{-3}$ for a Rayleigh fading channel with SC diversity for $M = 1$ (no diversity), $M = 2$, and $M = 3$. Assume equal branch SNRs of $\bar{\gamma} = 15 \text{ dB}$.
b) What are the different handoff strategies?
8. Write notes on the following:
 - a) RAKE receiver
 - b) Doppler spread and coherence time

