# FUTURE VISION BIE

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## & Lab Programs

Future Vision

## By K B Hemanth Raj

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**COMPUTER NETWORK LABORATORY**
**[As per Choice Based Credit System (CBCS) scheme]**
**(Effective from the academic year 2017-2018)**
**SEMESTER – V**

| | | | |
|---|---|---|---|
| Subject Code | 17CSL57 | IA Marks | 40 |
| Number of Lecture Hours/Week | 01I + 02P | Exam Marks | 60 |
| Total Number of Lecture Hours | 40 | Exam Hours | 03 |

**CREDITS – 02**

**Description (If any):**

For the experiments below modify the topology and parameters set for the experiment and take multiple rounds of reading and analyze the results available in log files. Plot necessary graphs and conclude. Use NS2/NS3.

**Lab Experiments:**

**PART A**

1. Implement three nodes point – to – point network with duplex links between them. Set the queue size, vary the bandwidth and find the number of packets dropped.
2. Implement transmission of ping messages/trace route over a network topology consisting of 6 nodes and find the number of packets dropped due to congestion.
3. Implement an Ethernet LAN using n nodes and set multiple traffic nodes and plot congestion window for different source / destination.
4. Implement simple ESS and with transmitting nodes in wire-less LAN by simulation and determine the performance with respect to transmission of packets.
5. Implement and study the performance of GSM on NS2/NS3 (Using MAC layer) or equivalent environment.
6. Implement and study the performance of CDMA on NS2/NS3 (Using stack called Call net) or equivalent environment.

**PART B**

**Implement the following in Java:**

7. Write a program for error detecting code using CRC-CCITT (16- bits).
8. Write a program to find the shortest path between vertices using bellman-ford algorithm.
9. Using TCP/IP sockets, write a client – server program to make the client send the file name and to make the server send back the contents of the requested file if present.
10. Write a program on datagram socket for client/server to display the messages on client side, typed at the server side.
11. Write a program for simple RSA algorithm to encrypt and decrypt the data.
12. Write a program for congestion control using leaky bucket algorithm.

**Study Experiment / Project:**

**NIL**

**Course outcomes:** The students should be able to:

- Analyze and Compare various networking protocols.
- Demonstrate the working of different concepts of networking.
- Implement and analyze networking protocols in NS2 / NS3

**Conduction of Practical Examination:**

1. All laboratory experiments are to be included for practical examination.
2. Students are allowed to pick one experiment from part A and part B with lot.
3. Strictly follow the instructions as printed on the cover page of answer script
4. Marks distribution: Procedure + Conduction + Viva: 100

**Part A: 8+35+7 =50**

**Part B: 8+35+7 =50**

5. Change of experiment is allowed only once and marks allotted to the procedure part to be made zero.