

GANDAKI COLLEGE OF ENGINEERING AND SCIENCE
Time Bound Open Book Hybrid Examination

Level: Bachelor
Programme: BE Software
Course: Network Programming

Semester: Spring, 2020

Full Marks: 70
Pass Marks: 31.5
Time : 2 hrs.

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

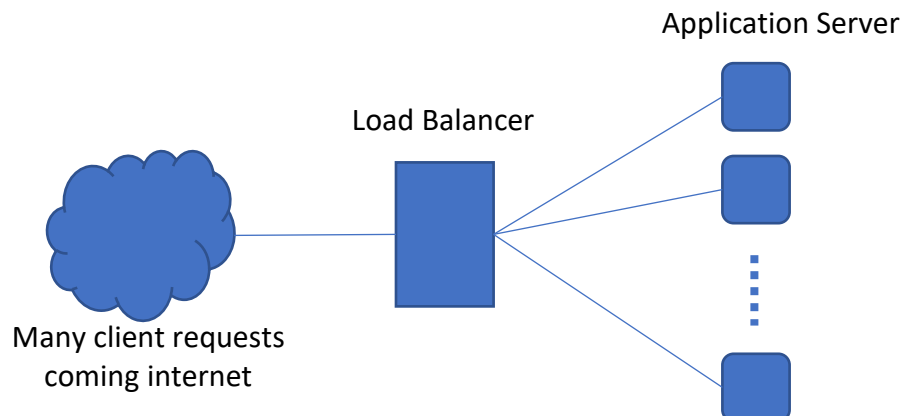
Attempt all the questions.

1. Define little and big endian. What feature of union can be used to determine the endian of a computer? Write a program to support your idea. 10
2. Do you think we can build our own web server using TCP sockets? What would be your approach to build it? Explain the socket functions that you would use? 10

OR

Bind() function is optional in client TCP application. Explain the scenario when we need bind in client side.

3. Imagine you are building a file transfer application. Which socket I/O model do you think will be suitable and why? Explain with diagram. 10
4. What are the major differences between Unix and windows socket? Is it possible to write a common network application that runs in both LINUX and Windows? How would you do it 10
5. Write a simple iterative server that can handle many clients at once. Hint not concurrent server. 10
6. Design and implement TCP based load balancer which accepts connections from many application services and distributes the incoming client request to the application server using Round-Robin algorithm. 20



Requirement:

1. Load balancer listens to application server at port 5000 so as many as required application can connect to load balancer.
2. Load balancer listens to clients at port 8080 and many clients can connect to load balancer at the same time.
3. Use Round-Robin so first request from client is sent to first application server. Make sure the request and reply are not exchanged.