RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

B.Sc. (General) Degree in Information and Communication Technology
Second Year - Semester II Examination – October/November 2017

ICT 2406 – INTERNET PROGRAMMING

Answer all questions **Time: Three (3) hours**

1

(a) Discuss how a hierarchical organization of the Internet has made it possible to scale to millions of users.

(4 marks)

(b) Describe three different access networks that can be used to provide internet connectivity to a subscriber. Discuss their advantages and disadvantages.

(6 marks)

(c) Consider sending a packet from a source host to a destination host over a fixed route. List the delay components in the end-to-end delay. Which of these delays are constant and which are variable?

(4 marks)

(d) Consider a router that interconnects three subnets: Subnet 1, Subnet 2, and Subnet 3. Suppose all of the interfaces in each of these three subnets are required to have the prefix 223.1 .17/24. Also suppose that Subnet I is required to support up to 63 interfaces, Subnet 2 is to support up to 95 interfaces, and Subnet 3 is to support up to 16 interfaces. Provide three network addresses (of the form a.b.c.d/x) that satisfy these constraints.

(6 marks)

2

(a) A client opens web browser and enters the URL http:// www.rjt.ac.lk. List and describe all the protocol interactions (step by step) between clients' web browser and the web server

(6 marks)

(d) Explain how names are resolved in DNS using an example.

(6 marks)

(e) What is the use of a Mail eXchange (MX) Resource Record (RR) in a DNS configuration?

(2 marks)

5

(a) What are the predominant architectural paradigms? Briefly explain them.

(4 marks)

(b) Why P2P architecture is self- scalable?

(4 marks)

(c) What is a VLAN? Differentiate a network with VLAN trunk and without VLAN trunk.

(4 marks)

(d) What is socket? Briefly explain socket process using an appropriate example.

(4 marks)

(e) RMI uses a Standard mechanism for communicating with remote objects. Define that mechanism

(4 marks)

END