Indian Institute of Engineering Science and Technology, Shibpur

B.Tech.(IT) 7th Semester Final Examination 2022

INTERNET TECHNOLOGY (IT 4102)

Full Marks: 50 **Time: 3 hours**

Answer any five questions. Each question carries 10 marks

1. Explain the three phases of simple mail transfer protocol using a proper diagram. Explain with a sequence diagram shows how the POP3 protocol pull the mail from the server? Explain the working principle of a web crawler. [4+3+3]

2. Explain a procedure for mapping a dynamic IP address to a permanent physical machine address in a local area network (LAN). Explain with a proper diagram how the two processes transfer data between themselves in the Internet following OSI seven-layer architecture. [5+5]

3. What is a port number? Explain the socket address. What is the difference between the User Datagram Protocol and Transmission Control Protocol? [2+2+6]

4. Explain the little-endian and big-endian byte ordering. Explain the following functions:
   a. int inet_aton(const char *strptr, struct in_addr *addrptr);
   b. char *inet_ntoa(struct in_addr inaddr);
   c. const char *inet_ntop(int af, const void *restrict src, char *restrict dst, socklen_t size); [5+5]

5. What is the role of the root server, primary server and secondary server in domain name systems? Explain the iterative and recursive name to address the resolution technique with a diagram. [5+5]

6. How will a system retrieve its IP address through the DHCP protocol? Explain with DHCP state diagram. Write down some of the benefits of JavaScript to make the website. [6+4]