

- c) Explain the Challenges of the 3rd generation programming languages in relation to network programming and how the 4th generation languages have address these . Cite Example **(4 Marks)**
- d) Write a code in java that will give as output the IP address for local Machine **(4 Marks)**
- e) Discuss the concept of network byte ordering and the two examples of implementation **(4 Marks)**
- f) With Aid of diagram ,Describe how Remote Method invocation call works **(7 Marks)**

SECTION B: ANSWER ANY TWO QUESTIONS {20 MARK EACH}.

QUESTION 2

- a) Threads are important constructs for facilitating concurrent programming , describe **Three** Approaches deployed thread implementation **(6 Marks)**
- b) Write Java code for Mutual exclusion implementing Monitor **(6 Marks)**
- c) Using an illustration and pseudo code describe the steps followed in a connectionless client server **(8 Marks)**

QUESTION 3

- a) Using a clearly illustrated diagram examine and describe the functions of the component TCP header **(8 Marks)**
- b) Using Java write a code that implement a Server Echo program **(4 Marks)**
- c) Compare and contrast the OSI reference model and the TCP/IP Protocol stack and justify **(4 Marks)**
- d) Using an illustration discuss the implementation handshake procedure for termination/close in TCP communication **(4 marks)**

QUESTION 4

- a) Elaborate on two types of Transparencies employed in distributed systems **(4 Marks)**
- b) Write code that can be used to display the IP address associated with a given Website **(6 Marks)**
- c) Using diagram discuss the concept of data encapsulation **(6 Marks)**
- d) Discuss two approaches that DNS servers use to resolve IP address **(4 Marks)**