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Roll No. ....

**G302**

**B. Tech. EXAMINATION, 2020**

(Seventh Semester)

(B Scheme) (Main & Re-appear)

(IT)

IT403B

ADVANCED COMPUTER NETWORKS

*Time : 2½ Hours]*

*[Maximum Marks : 75*

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Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

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**Note :** Attempt *Four* questions in all. All questions carry equal marks.

1. An ISP is granted the block 80.70.56.0/21.  
The ISP needs to allocate addresses for two organizations each with the 500 addresses, two organizations each with 250 addresses, and three organizations each with 50 addresses.  
Draw block diagram and find the following :
  - (a) Find the number and range of addresses in the ISP block.
  - (b) Find the range of addresses for each organization and the range of unallocated addresses.
2.
  - (a) Draw comparison between IPv4 and IPv6 headers.
  - (b) How is RARP different from ARP ?
3.
  - (a) What do you mean by Sockets ? Write the code to create sockets ?
  - (b) What is the difference between the DatagramSocket class and the Socket class in Java ?

- (c) Explain byte manipulation and address conversion functions for sockets.
- 4. (a) What do you mean by thread programming ? Why is it required ? Explain giving a suitable examples.  
(b) Explain the *connect* and *bind* socket system calls.
- 5. (a) What do you mean by mobile number portability and how is it implemented ?  
(b) Explain WAP. Why and where is it used ?
- 6. Draw and explain components of GSM overview in detail.
- 7. (a) Are both AH and ESP needed for IP Security ? Why or why not ?  
(b) What is the purpose of Record Protocol and Hand Shake Protocol in SSL ?

8. (a) Draw comparison between S/MIME and PGP. Also discuss advantages and disadvantages of both protocols.
- (b) Differentiate between symmetric and asymmetric keys.