Code No: R32051 **R10** **Set No: 1**

III B.Tech. II Semester Supplementary Examinations, January -2014

ADVANCED COMPUTER NETWORKS

(Computer Science and Engineering)

Time: 3 Hours **Max Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1. a) Explain the importance of Network Layer and Explain different design issues of Network Layer.
   b) Explain in detail about the Hierarchical Routing.

2. a) Differentiate between IPv4 address and IPv6 address.
   b) What is the need of Network as a Connectionless Network? Explain in detail.

3. a) Why fragmentation is necessary? Explain different fields related to fragmentation in IPv4.
   b) Explain IPv6 Address format in detail with a neat diagram.

4. a) Explain in detail about the different TCP serves.
   b) What is flow control in TCP? Explain the working of Sliding Window Protocol.

5. a) Explain in detail about the different strategies of sender TCP to avoid congestion.
   b) What is the purpose of traffic shaping? Explain Leaky Bucket algorithm in detail.

6. a) Explain in detail about the Common Gateway Interface.
   b) Explain briefly the process of Image Compression using JPEG Standard.

7. a) Briefly explain about the challenges and issues in MANETS.
   b) Discuss about different issues of transport layer in Mobile Ad hoc networks.

8. Explain the following in detail
   a) Wireless Sensor Networks characteristics
   b) HTMLS

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Code No: R32051 **R10** **Set No: 2**

III B.Tech. II Semester Supplementary Examinations, January -2014

ADVANCED COMPUTER NETWORKS

(Computer Science and Engineering)

Time: 3 Hours **Max Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1. a) Differentiate between Connectionless Services and Connection Oriented Services.
   b) What is Congestion Control? Explain Load shedding Congestion Control algorithm.

2. a) Explain Different address spaces in Classful addressing.
   b) Explain the process of Translation and implementation in a Network address.

3. a) Explain in detail about the advantages of IPv6 over IPv4.
   b) What is the need of Checksum field in the IPv4 and why it covers only the header?

4. a) Explain briefly the fields in user Datagram format with a neat diagram.
   b) Explain in detail about the segment format of TCP with a neat diagram.

5. a) Explain Closed Loop congestion control mechanism in detail.
   b) Explain different flow characteristics for QoS in Internetworking.

6. Explain in detail the following
   (i) Label
   (ii) Domain Name
   (iii) Partially Qualified Domain Name
   (iv) Domain

7. a) Briefly discuss about the Mobility issues in Mobile Computing.
   b) Explain in detail about the routing protocols in Mobile Ad hoc networks.

8. a) Explain the functioning if Wireless Sensor Networks.
   b) Explain briefly the different issues in Grid construction technology.

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Code No: R32051 **R10** **Set No: 3**

III B.Tech. II Semester Supplementary Examinations, January -2014

ADVANCED COMPUTER NETWORKS

(Computer Science and Engineering)

Time: 3 Hours **Max Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1. a) Explain briefly with the major issues that differentiate Datagram subnet with Virtual Circuit subnet.
   b) With a neat example explain shortest path routing algorithm.

2. a) What is Internetwork? Explain Network layer at source with a neat diagram.
   b) Differentiate Virtual circuit approach with the Datagram approach.

3. a) Explain briefly about the IPv4 datagram format with a neat diagram.
   b) Name and explain the three types of IPv6 addresses in detail.

4. a) What are the different applications of UDP explain in detail.
   b) Explain in detail about the SCTP Packet format.

5. a) Explain different policies to prevent Congestion in open-loop congestion control mechanism.
   b) Explain the scheduling techniques to improve QoS in Internetworking.

6. a) Explain different mail access Protocols in detail.
   b) Explain in detail about the Multipurpose Internet Mail Extension Protocol.

7. a) Explain in detail about the different protocol stack issues in Mobile computing environment.
   b) Explain the applications of Ad hoc networks briefly.

8. a) Discuss in detail about the different issues in Wireless Mesh Networks.
   b) Explain the features of Computational Grid in detail.

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Code No: R32051 **R10** **Set No: 4**

III B.Tech. II Semester Supplementary Examinations, January -2014

ADVANCED COMPUTER NETWORKS

(Computer Science and Engineering)

Time: 3 Hours **Max Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

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1. a) Explain the implementation of connectionless Service with a neat diagram.
   b) Define briefly the steps that take place in the process of Hop-by-Hop Choke Packets?

2. a) What is Internetwork? Explain Network Layer at Router with a neat diagram.
   b) Explain in detail about the Dynamic Host configuration Protocol.

3. a) Explain IPv6 Packet format with a neat diagram.
   b) What is MTU and how is fragmentation related to it. Explain?

4. a) Explain the approach to achieve the process-to-process communication through Client-Server paradigm.
   b) Explain in detail about the four TCP Timers.

5. a) Explain how congestion is avoided in the Frame Relay Protocol.
   b) What is the problem with Leaky Bucket algorithm? Explain how it is overcome with Token Bucket algorithm.

6. a) Explain the following
      (i) Flat Name Space
      (ii) Hierarchal Name Space
   b) What are the types of User agents? Explain the services provided by a User agent.

7. a) Discuss briefly about the Security issues in mobile networks.
   b) Explain how network security is provided in Mobile Ad hoc networks.

8. a) Explain in detail about the Operating system support in sensor devices.
   b) Explain the procedure of the SIP session establishment.

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