

Code No. N0421

**R07**

**Set No.1**

**IV B.Tech I Semester Supplementary Examinations, February/March, 2012**

**COMPUTER NETWORKS**

**(Common to Electronics & Communications Engineering, Electronics & Instrumentation Engineering and Bio-Medical Engineering)**

**Time: 3 hours**

**Max. Marks: 80**

**Answer any FIVE Questions  
All Questions carry equal marks**

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1. a) What is the importance protocol in networks  
b) Compare OSI and TCP/IP protocol models
  
2. a) What is the necessity of digital/analog to analog/digital conversion schemes.  
b) Encode the bit stream 1001001110010 in to following (assume polarity of first 1 is positive)
  - i) NRZ                      ii) DIFFERENTIAL MANCHESTER
  - iii) AMI                     iv) B8ZS
  
3. a) Explain in detail about elementary DLL protocols.  
b) What is piggybacking? Give the merits of piggybacking?
  
4. a) Explain different ALOHA protocols in detail  
b) What are the functions of bridges in networks?
  
5. a) Explain Dijkstra's shortest path routing algorithm with example.  
b) Differentiate between multicasting and broadcasting.
  
6. What is congestion explain different policies that effect congestion at different layers
  
7. a) What are the similarities and differences between Data Link layer and Transport layer?  
b) How is ATM Adaption layer (AAL) is different from TCP? Explain
  
8. a) What is meant by Encryption? Describe the public key cryptography.  
b) State and explain working of the built-in HTTP request methods.

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**Set No.2**

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**Time: 3 hours**

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1. a) Describe the OSI reference model. Explain the purpose of each layer.  
b) Explain various network topologies in detail.
2. Explain different type's transmission media of physical layer.
3. a) Explain the different types of error detection codes and give the what they can and cannot detect.  
b) Construct the HAMMING code for the bits 10011001
4. a) Draw and explain 802.3 frame format.  
b) Explain the operation of spanning tree bridges.
5. Explain hierarchical routing with example.
6. a) What is congestion? Describe different congestion control algorithms.  
b) Briefly discuss about IP address classes and special IP addresses.
7. a) Explain different steps in connection management  
b) List the differences between TCP and UDP.
8. Write shot notes on the following
  - a) MIME
  - b) WAP
  - c) DNS
  - d) VIDEOCOMPRESSIONSTANDARDS

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**Set No.3**

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**Time: 3 hours**

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1. a) List two ways in which The OSI reference model and The TCP/IP reference model are the same.  
b) List two advantages and two disadvantages of having international standards for network protocols.  
c) Explain the Novell NetWare reference model.
2. a) Compare different transmission media  
b) Give the services provided by broad band ISDN
3. a) Find the checksum for the data 1010110110110001 send using a check of 4 bits.  
b) Explain the parameters to be considered in flow control
4. a) Discuss the problems with minimum/ maximum length frames used in MAC layer.  
b) What are the services needed in wireless LAN MAC sublayers
5. a) Explain the distance vector routing and hierarchical routing in detail.  
b) Convert the IP address whose hexadecimal representation is C22F1582 to dotted decimal notation.
6. a) Describe congestion control in Datagram subnets.  
b) Explain the exterior gateway routing protocol – BGP.
7. a) Explain the Real-time transport protocol.  
b) Explain the flow control and buffering in transport layer protocols.
8. Write short notes on any three of the following  
a) Domain name space b) MIME c) SNMP d) electronic mail

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**Set No.4**

**IV B.Tech I Semester Supplementary Examinations, February/March, 2012**

**COMPUTER NETWORKS**

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**Time: 3 hours**

**Max. Marks: 80**

**Answer any FIVE Questions  
All Questions carry equal marks**

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1. a) What are the reasons for using layer protocol?  
b) Discuss the design issues for the layers in communication protocols
2. a) If a binary signal is sent over a 3-kHz channel whose signal-to-noise ratio is 20dB, what is the maximum achievable data rate?  
b) Explain the ATM reference model.
3. a) Explain the design issues of data link layer.  
b) Briefly, Explain Go Back N and Selective Repeat sliding window routing protocols.
4. a) Sketch the Manchester encoding and the Differential Manchester encoding for the bit stream : 0001110101 Assume the line is initially in the low state.  
b) Explain Bit-Map and Binary countdown collision-free protocols.
5. a) List the differences between datagram and virtual circuit subnets.  
b) Explain count to infinity problem with suitable example.
6. Explain different congestion prevention policies at different layers
7. a) Give the functions of transport layer.  
b) Explain ATM AAL2 layer protocol.
8. Write short notes on the following.
  - a) DNS
  - b) MIME
  - c) Audio compression

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**R07**

**Set No.1**

**IV B.Tech I Semester Supplementary Examinations, February, 2012**  
**MULTIMEDIA AND APPLICATION DEVELOPMENT**  
**(Common to Computer Science & Engineering and**  
**Information Technology)**

**Time: 3 hours**

**Max. Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**  
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- 1 a) Describe about Multimedia  
b) Describe about World wide web  
c) Write about the RGB cube  
d) Write about CMY cube.
- 2 Explain in detail about analog video signals
- 3 a) What is class and ?Explain class definition in Action Script  
b) Differentiate function and method in ACTION SCRIPT
- 4 What is reusability? How that is achieved? Give an example program in AS.
- 5 Explain subclasses of Movie clip type.
- 6 How Trees are used in the compression technique. Explain?
- 7 Discuss about
  - a) MELP (multiband excitation linear predictive)
  - b) MPEG-7 DDL (description definition language) components?
- 8 a) Write short notes on media-on-demand (MOD)?  
b) Explain the operation of RTSP with example?

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**R07**

**Set No.2**

**IV B.Tech I Semester Supplementary Examinations, February, 2012**  
**MULTIMEDIA AND APPLICATION DEVELOPMENT**  
**(Common to Computer Science & Engineering and**  
**Information Technology)**

**Time: 3 hours**

**Max. Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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- 1 a) Explain different file formats  
b) Explain in detail about analog video signals
- 2 Describe about
  - a) Digitization of sound
  - b) Analog and digital video
- 3 a) Explain Data type 'type checking' in AS2.0  
b) Explain Class Attributes AS 2.0
- 4 a) Explain the theory of inheritance  
b) Explain exception handling with an example
- 5 Write detail note on OOP application Frame work
- 6 Explain what are the two types of wavelet transforms?
- 7 Discuss about
  - a) Video Compression Techniques
  - b) Audio Compression Techniques
- 8 Explain TCP/IP protocols of multimedia networks?

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**Set No.3**

**IV B.Tech I Semester Supplementary Examinations, February, 2012**  
**MULTIMEDIA AND APPLICATION DEVELOPMENT**  
**(Common to Computer Science & Engineering and**  
**Information Technology)**

**Time: 3 hours**

**Max. Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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- 1 Discuss the categorist multimedia Software's.
- 2 a) Explain Structure of MIDI message  
b) Discuss the types of video Signals
- 3 a) Explain Class Attributes AS 2.0  
b) Write about static checking. Give examples
- 4 Explain the usage of Interface in AS2.0
- 5 a) Explain subclasses of Movie clip type  
b) Discuss about wavelet-based coding algorithm
- 6 Compare dictionary based coding with lossless image compression? Explain with example.
- 7 a) What is MPEG-2? Explain about MPEG-2 Scalabilities?  
b) Discuss examples on use of MPEG -4
- 8 Explain broad cast schemes for video on demand in detail?

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**Time: 3 hours**

**Max. Marks: 80**

**Answer any FIVE Questions**  
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- 1 a) Discuss about Data representation in Graphics and images.  
b) What is WWW? Explain in brief
- 2 a) Discuss the types of video Signals.  
b) What is Chroma sub sampling?
- 3 a) Differentiate function and method in ACTION SCRIPT.  
b) Write about static checking. Give examples.
- 4 What do you mean by uncaught exceptions? Explain how handle un caught exceptions.
- 5 a) Discuss Procedural programming Vs Object orients programming  
b) Explain the how to design the currency converter frame work
- 6 Explain in detail about the idea behind embedded zero three of wavelet coefficient?
- 7 Explain How MPEG -7 works.
- 8 Explain about Multimedia network communications and also discuss about its applications?

Code No. M0228

**R07**

**Set No.1**

IV B.Tech I Semester Supplementary Examinations, February, 2012

**ELECTRICAL DISTRIBUTION SYSTEMS**

(Electrical and Electronics Engineering)

**Time: 3 hours**

**Max. Marks: 80**

**Answer any FIVE Questions  
All Questions carry equal marks**

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1. a) Draw a schematic single line diagram of an electrical distribution system and explain its typical parts in detail.  
b) Write in detail about commercial and agricultural loads and their respective characteristics.
2. a) Give the various loading and voltage level factors that influence the design and operation of primary feeders?  
b) Discuss the advantages and disadvantages of radial and loop type primary feeders.
3. a) What are the various factors that are to be considered in selecting a substation location?  
b) Compare the four and six feeder's pattern of substations.
4. Derive the equations for voltage drop and power loss in a radial feeder with uniformly distributed load.
5. a) What are the objectives of distribution system protection and explain fuse-to-fuse coordination.  
b). The per unit values of positive, negative and zero sequence reactances of a network at fault are 0.08, 0.07 and 0.05 respectively. Determine the fault current if the fault is double line to ground.
6. a) What is the need for coordination of different protective devices? Explain in detail.  
b) Discuss the overall coordination procedure employed for the protection of distribution systems.

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**R07**

**Set No.1**

7. a) Compare and explain the role of shunt and series capacitors in P. F correction?  
b) A 400V, 50 cycles three phase line delivers 207KW at 0.8p.f. (lag). It is desired to bring the line p.f. to unity by installing shunt capacitors. Calculate the capacitance if they are  
i) star connected  
ii) delta connected.
  
8. a) Write the various ways to improve the distribution system overall voltage regulation?  
b) Describe the operation of AVR with a neat diagram.

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**R07**

**Set No.2**

IV B.Tech I Semester Supplementary Examinations, February, 2012

**ELECTRICAL DISTRIBUTION SYSTEMS**

(Electrical and Electronics Engineering)

**Time: 3 hours**

**Max. Marks: 80**

**Answer any FIVE Questions  
All Questions carry equal marks**

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1. a) Discuss the classification of loads and their characteristics.  
b) Define and derive the relationship between load and loss factors.
2. a) What are the various factors that influence the primary feeder loading and voltage levels?  
b) Explain the various types of radial primary feeders in detail with suitable sketches?
3. Give a detailed analysis of square shaped and hexagonal shaped distribution substation areas.
4. Discuss the various faults that occur and their probability in a distribution system and give the procedure for fault current calculation in 3 phase faults.
5. a) Discuss the objectives of distribution protection.  
b) Explain the principle of operation and the characteristics of circuit reclosers and line sectionalizers.
6. a) Explain in detail how the co-ordination of various protective devices helps in improving system performance.  
b) Discuss clearly the coordination procedure between a circuit breaker and a fuse.

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**Set No.2**

7. a) With the help of a phasor diagram, show how a series capacitor boosts the voltage? What are the drawbacks of this method?  
b) A synchronous motor having a power consumption of 50KW is connected in parallel with a load of 200KW at lagging p.f of 0.8. If the combined load has a power factor of 0.9, what is the value of leading reactive KVA supplied by the motor and at what p.f is it working?
  
8. a) Briefly explain the line drop compensation on voltage control.  
b) Write the various ways to improve the distribution system overall voltage regulation?

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**R07**

**Set No.3**

IV B.Tech I Semester Supplementary Examinations, February, 2012

**ELECTRICAL DISTRIBUTION SYSTEMS**

(Electrical and Electronics Engineering)

**Time: 3 hours**

**Max. Marks: 80**

**Answer any FIVE Questions  
All Questions carry equal marks**

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1. a) Explain the following:
  - i) Coincidence factor
  - ii) Contribution factor
  - iii) Loss factor
  - iv) Maximum Demand
- b) Write in detail about residential and industrial loads and their respective characteristics.
  
2. a) List the various design and operational aspects affecting the primary feeder loading and voltage levels.
- b) Draw the single line diagram of radial type feeders and mention the factors that influence the selection of primary feeders.
  
3. a) List out the benefits with the optimal location of substations.
- b) How do you analyze a substation service area with N primary feeders?
  
4. Briefly discuss the various faults that occur in a distribution system and their protective schemes employed.
  
5. a) Explain the objectives of distribution system protection.
- b) Explain the characteristic features of fuses and circuit breakers.
  
6. a) Discuss the importance of the coordination of different protective devices.
- b) Explain the fuse to fuse coordination procedure.

7. a) Justify the importance of power factor correction.
- b) A 3-phase, 50Hz, 2200V induction motor develops 400H.P at a power factor 0.8 lag and efficiency 90%. The power factor is to be raised to unity by connecting a bank of condensers in delta across the supply mains. If each of the capacitance unit is built up of 4 similar 550V condensers, calculate the required capacitance of each condenser and its KVA rating.
8. a) How an AVB can control voltage? With the aid of a suitable diagram explain its function.
- b) With the help of a phasor diagram, show how a series capacitor boosts the voltage? What are the drawbacks of this method?

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**Set No.4**

IV B.Tech I Semester Supplementary Examinations, February, 2012

**ELECTRICAL DISTRIBUTION SYSTEMS**

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 80

Answer any FIVE Questions  
All Questions carry equal marks

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1. a) Explain load modeling and its characteristics.  
b) Write in detail about commercial and agricultural loads and their respective characteristics.
2. a) Explain the various types of radial primary feeders in detail with suitable diagrams?  
b) Give the various loading and voltage level factors that influence the design and operation of primary feeders?
3. a) List out the rules to be observed to select an ideal location for a substation and derive the expression for the rating of a distribution substation.  
b) Compare the four and six feeder pattern for substations with the corresponding expressions.
4. Derive the necessary equations for voltage drop and power loss in a radial feeder with non-uniformly distributed load.
5. a) Discuss the objectives of distribution system protection.  
b) Discuss the merits and demerits of circuit breakers over fuses.
6. a) Explain in detail the general coordination procedure for over current protective devices.  
b) Discuss the coordination procedure between a fuse and an auto-recloser.

7. a) Explain the economic justification of installing a capacitor in a distribution system.
- b) A feeder supplies an Industrial consumer with a cumulative load of (i) Induction Motors totaling 200HP which runs at an average efficiency of 89% and a lagging average p.f. of 0.85. (ii) Synchronous motors totaling 100HP with an average efficiency of 85% and (iii) a heating load of 100KW. The Industrial consumer plans to use the synchronous motors to correct its overall power factor. Determine the required p.f. of the synchronous motors to correct the overall p.f. at peak load to (i) unity (ii) 0.95 lag.
8. a) Why do we need to control the voltage of a power system? Explain in detail.
- b) What is a line drop compensator? How is it used for the voltage regulation in a distribution system?