

**IV B.Tech. II Semester Supplementary Examinations, July -2005**  
**ASYNCHRONOUS TRANSFORM MODE**  
**(Electronics & Telematics)**

**Time: 3 hours**

**Max Marks: 80**

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

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1. (a) What are the differences between circuit switching and packet switching.  
(b) Explain ISDN protocol architecture.
2. (a) Does the performance of ATM depend strongly on the delay bandwidth product of a wide area network? Explain.  
(b) Explain briefly the architecture of ATM Networks?
3. (a) Suppose that constant-length packets of size equal to M cells arrive at a source to be carried by an ATM connection and that such packets are separated by exponential random times T. What are the appropriate traffic descriptors for this sequence of cells.  
(b) What is the difference between CER and CLR? Why is one negotiated during connection setup and other is not?
4. Explain briefly the following AAL sub layers.  
(a) Service specific convergence sub layer.  
(b) Common part convergence sub layer.  
(c) Segmentation and reassembly sub layer.
5. Explain usage parameter control?
6. (a) Define switching element. What is its function?  
(b) Explain the different switching elements used in ATM networks?
7. Explain the following configurations with neat diagrams w.r.t ATM networks?  
(a) Star configuration  
(b) Multiple star configuration  
(c) Ring configuration
8. What are ATM forum specifications for wireless communications? How is wireless network implemented in ATM?

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1. (a) Is it possible for a network to offer best effort virtual circuit services? What features would such a service have?  
(b) Explain briefly B-ISDN layering.
2. (a) Explain
  - i. Peak cell rate(PCR)
  - ii. Sustainable cell rate (SCR)
  - iii. Maximum burst size(MBS)
  - iv. Burst tolerance (BT)(b) Explain generic cell rate algorithm (GCRA)
3. (a) Explain why each specific set of traffic descriptors and QoS parameters were selected for each of the ATM service categories?  
(b) What are the different methods that can be used to establish a virtual channel connection in B-ISDN?
4. (a) Explain ATM adaptation layer functions.  
(b) What are the different service classes in AAL ? and explain them briefly.
5. (a) What are ATM traffic descriptors?  
(b) Define source traffic descriptors?
6. Explain working of the following switching elements w.r.t ATM networks.
  - (a) Matrix type
  - (b) Central memory
  - (c) Bus type
  - (d) Ring type
7. (a) Explain multihop optical network?  
(b) Explain All – optical transport network?
8. What are the different ATM service categories?

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  - i. Peak cell rate(PCR)
  - ii. Sustainable cell rate (SCR)
  - iii. Maximum burst size(MBS)
  - iv. Burst tolerance (BT)(b) Explain generic cell rate algorithm (GCRA)
3. (a) Explain different fields in ATM cell header.  
(b) What are the different payload types used in ATM cell header.
4. (a) Explain ATM adaptation layer functions.  
(b) What are the different service classes in AAL ? and explain them briefly.
5. Explain peak cell rate algorithm?
6. Explain working of the following switching elements w.r.t ATM networks.
  - (a) Matrix type
  - (b) Central memory
  - (c) Bus type
  - (d) Ring type
7. What are the advantages of designing a passive optical network using multiplexer / de multiplexer approach over splitter / combiner approach?
8. What are the different types of traffic ATM is intended to carry?

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1. (a) What are the possible configurations for ISDN user network interfaces proposed by ITU-T. Explain them briefly.  
(b) Explain the structure of ISDN addresses.
2. (a) Does the performance of ATM depend strongly on the delay bandwidth product of a wide area network? Explain.  
(b) Explain briefly the architecture of ATM Networks?
3. (a) Define the following ATM performance parameters.
  - i. cell error ratio
  - ii. cell miss insertion rate.
  - iii. cell lock ratio
  - iv. cell delay variation  
(b) What is traffic shaping, Explain briefly
4. (a) What are the different fields available in AAL type 1 protocol data unit format.  
(b) What are the different functions performed by AAL
5. Explain peak cell rate algorithm?
6. Explain working of the following switching elements w.r.t ATM networks.
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7. Explain the following configurations with neat diagrams w.r.t ATM networks?
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8. Explain Telephony over ATM?

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