ws Scan Paper - 2 (2)

Con. 3153–11.　　　　　　　　**(OLD COURSE)**　　　　　　　**RK–3867**

(3 Hours)　　　　　　　　　　[Total Marks : 100]

Note:　1) Question no. 1 is compulsory.
　　　　2) Answer any 4 from question no. 2 to 7

Q.1 A. Compare OSI model and TCP/IP model.　　　　　　　　　(05 Marks)

Q.1 B. Explain packet switching in brief.　　　　　　　　　　(05 Marks)

Q.1 C. What is the difference between congestion control and flow control.

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Q.1 D. What is the difference between network layer delivery and transport layer
　　　　delivery.　-　　　　　　　　　　　　　　　　　　　(05 Marks)

Q.2 A. Explain SONET multiplexing and SONET frame structure.　(10 Marks)

Q.2 B. Draw IP header and explain each field.　　　　　　　　(10 Marks)

Q.3 A. Explain Dijkstra's shortest path algorithm using graph.　(10 Marks)

Q.3 B. Differentiate UDP and TCP.　　　　　　　　　　　　(10 Marks)

Q.4 A. Explain HDLC in detail.　　　　　　　　　　　　　(10 Marks)

Q.4 B. Derive transmission efficiency of GOBACK n ARQ. State the effect of bit error
　　　　rate and delay bandwidth product on transmission efficiency.　(10 Marks)

Q.5 A. Explain signaling in the telephone network.　　　　　　(10 Marks)

Q.5 B. Explain CSMA and CSMA/CD.　　　　　　　　　　　(10 Marks)

Q.6 A. Compare IPV4 and IPV6.　　　　　　　　　　　　　(10 Marks)

Q.6 B. Show maximum throughput of pure ALOHA is 1/2e.　　　(10 Marks)

Q.7　Write note on :　　　　　　　　　　　　　　　　　(20 Marks)
　　　i) ATM traffic management
　　　ii) Hub, bridges and switches
　　　iii) FDDI
　　　iv) Circuit switching and data gram packet switching.

Con. 3165-11.   (OLD COURSE)   **RK-3882**

(3 Hours)   **[Total Marks : 100**

N.B.: (1) Question No.1 is compulsory.
     (2) Answer any four questions out of remaining six questions.

1. Answer the following in brief :-   **20**
(a) Discuss the basic block diagram of optical communication system.
(b) What are direct and indirect band gap semiconductors? Which types are
suitable to be used as optical sources and detectors.
(c) How does the optical signal propagate through the fiber derive equations for numerical aperture .
(d) What is the difference between homodyne and heterodyne detection?

2.(a) .Draw and explain the structure of Avalanche Photo Diode (APD) along with   **10**
electrical field profile that exist in the various regions of APD structure. Explain why it is also called
reach through APD (RAPD).
(b) Discuss advantages of Optical fiber system over wired and wireless system.   **10**

3. (a) Explain anyone fiber fabrication process with a neat diagram.   **10**
(b) Explain with neat sketches fiber splicing techniques. State the desirable requirements   **10**
of a good fiber connector.

4.(a) With necessary equations explain modulation electrical and optical bandwidth.
Draw and Edge explain emitter double heterodyne LED structure.   **10**
(b) Define LED power and efficiency with necessary derivations   **10**

5. a) Explain the basic principle behind LASER and derive the Eienstein relation for spectral density
and ratio of stimulated emission rate versus spontaneous rate.   **10**
b) What are the different material that are used for fabrication of LASER for different wavelengths.
Draw and explain STRIPE geometry DH injection LASER   **10**

6. (a) Explian the techniques for measurement of attenuation, dispersion, refractive index and
numerical aperture of a fiber.   **10**
(b) Discuss a popular non-destructive technique for attenuation measurement.   **10**

7. Write short notes on any four :-
(a) Rise time budget
(b) Link Power budget.
(c) Radiative losses in optical fiber.
(d) PIN diode
(e) Optical receiver and noise sources   **20**

7/6/2011

85-mk : 1stHf-11.

B.E EXTC VIII (old)
Elective II- Internet Communication Engg.

Con. 2905-11.   (OLD COURSE)   RK-3885

(3 Hours)   [Total Marks : 100

N.B. (1) Question No. 1 is **compulsory**.
     (2) Attempt any **four** questions out of remaining questions.

1. Answer any **four** :—   20
   (a) Compare IPV_4 with IPV_6.
   (b) What is NAT ? How the address translation takes place using NAT ?
   (c) Discuss the question record of DNS.
   (d) Explain the timers in RIP.
   (e) With a neat diagram, explain the function of each of the layers of TCP/IP.

2. (a) What is internet protocol ? Explain the different options available in IP.   12
   (b) With a neat diagram, explain the transition diagram of DHCP.   8

3. (a) Explain subnetting in classful and classless addressing. Compare classless   12
       addressing with classful adddressing.
   (b) Explain different packet forwarding techniques used by router for forwarding the   8
       packet.

4. (a) Explain the error reporting messages in ICMP.   12
   (b) What are special addresses ? Explain them in brief.   8

5. (a) Explain the different fields of TCP header.   10
   (b) Discuss how link state routing is carried out in OSPF.   10

6. (a) Discuss how the error control is done in TCP.   12
   (b) Explain the checksum calculation at sender and receiver in UDP.   8

7. Write short notes on (any **two**) :—   20
   (a) RTP and RTCP
   (b) Firewalls
   (c) H-323 Architecture.

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Con. 3112–11.   (OLD COURSE)   RK–3870

(3 Hours)   [Total Marks : 100

N.B. : (1) Question No. 1 is **compulsory**.
       (2) Attempt any **four** questions from Q. Nos. **2 to 7**.
       (3) Draw **neat** sketches/diagram wherever **necessary**.
       (4) **Figures** to the **right** indicate **full** marks.
       (5) Assume **suitable** data wherever **necessary** and justify the **same**.
       (6) Answer to **new question** to be started on **fresh page**.

1. Attempt the following (any **four**) :–   20
       (a) Co-ordinate system's and co-ordinate of a point on earth.
       (b) Satellite period and satellite velocity.
       (c) Single coverage and Tripple coverage.
       (d) Lauching consideration in Geo and non Geo satellite.
       (e) Given that e = 0·2 and semi-major axis = 10,000 km, find value of lotus
            rectum, minor and distance between foci for the orbit.

2. (a) Differentiate between "Geostationary" and "low altitude" satellites," which   10
         is suitable for communications and why ?
    (b) Give the reasons as to why up-link frequency is different from down-link   10
         frequency ? Also mention reasons for holding up-link frequency higher than down
         link frequency ?

3. (a) Derive the expression for satellite look angle's and coverage angle; with the help 10
         of suitable diagram.
    (b) What are the different losses considered in satellite communication system.   10
         How these losses are minimised ?

4. (a) What do you mean by system noise temperature ? How does it affect the   10
         $\left(\dfrac{C}{N}\right)$ ratio and $\left(\dfrac{G}{T}\right)$ ratio; if received power 400 watt and noise temperature 450 k

         Calculate $\left(\dfrac{C}{N}\right)$ ratio in dBHz, Given B = 36 MHz. Calculate $\left(\dfrac{C}{N}\right)$ ratio in dB.
    (b) Discuss briefly how demand assignment may be implemented in a TDMA network.   10
         What is advantages of TDMA over FOMA in this respect ?

5. (a) Explain frequency co-ordination among the earth-station's and terristerial **10** plane microwave links; find gain of '1' meter diameter dish antenna at 6 GHz with 60% efficiency.

   (b) What are the different interference that may affect the satellite link design ? **10** Explain how these interference effects taken into account in the satellite link design.

6. (a) Explain Launching of synchronous satellite using ELV Launch, briefly list same **10** launch vehicles with features.

   (b) What is a spot beam ? Explain the use of multispot beam in satellite communication. **10**

7. Write notes on (any **four**) :– **20**

   (a) Digital TV and BW Compression
   (b) Tracking Techniques in Geostationary Satellites
   (c) FDMA–SCPC System
   (d) SPADE System
   (e) 3 Axis Stabilization.

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