May 2016

4113–1/3

Roll No. .....

Subject Code—4113

M.C.A. (Third Year) EXAMINATION

(5 Years Integrated Course)

MCA-301

COMPUTER NETWORKS

Time : 3 Hours *Maximum Marks : 100*

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) List and explain in brief the important uses of computer networks.

(b) Distinguish between a LAN and a WAN.

2. (a) Enumerate the functions of transport and network layers in OSI reference model and compare them with TCP/IP model.

(b) Specify the characteristics of various wirless transmission medias suitable for data communication along with their applications.

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3. (a) How does data transmission take place through optical fibers ?

   (b) Explain the polynomial code method for detecting errors in transmission.

4. Compare CSMA media access control mechanism with Aloha. What is the advantage of collision free protocols ? Give one example of a collision free protocol.

5. (a) Give an example of a public key algorithm used for encryption of data.

   (b) Describe the physical specificatons, coding and frame format of IEEE 802·3 LAN standard.

6. (a) What is the advantage of selective repeat sliding window protocol over go back n protocol ?

   (b) What is the purpose of monitor station in Token ring ? How are reservations done in token ring ?

7. (a) When are flooding and shortest path routing used in link state routing ?

   (b) Explain one algorithm each for controlling congestions based on open loop and closed loop policies.

8. (a) Derive a relationship between DNS, WWW and Multimedia.

   (b) Identify the characteristic features of ATM.