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Total No. of Pages: 02

Total No. of Questions: 09

**M.Sc. (IT) (2015 Onwards) (Sem. – 2)**  
**DATA COMMUNICATION & NETWORKS**  
**M Code: 72728**  
**Subject Code: MSIT-201**  
**Paper ID: [72728]**

Time: 3 Hrs.

Max. Marks: 60

**INSTRUCTIONS TO CANDIDATES:**

1. **SECTIONS-A, B, C & D** contains **TWO** questions each carrying **TEN** marks and students has to attempt any **ONE** question from each **SECTION**.
2. **SECTION-E** is **COMPULSORY** consisting of **TEN** questions carrying **TWENTY** marks in all.
3. **Use of non-programmable scientific calculator is allowed.**

**SECTION A**

1. a) What are the different type of wired and wireless media used for transmission?  
b) State three different types of Multiplexing schemes used and explain in brief.
2. What is circuit switching? Discuss how packet switching is better than circuit switching for computer to computer communication.

**SECTION B**

3. Why are some of the functions of data link layer similar to that of Transport layer? State clearly the difference between these two layers.
4. Explain different types of errors and any two schemes used for error detection and correction. Also explain how error rate is measured.

**SECTION C**

5. Explain the following network trouble shooting commands: Ping, Traceroute, Netstat.
6. What is routing? Mention different types of routing. In particular explain shortest path routing algorithm in detail.

**SECTION D**

7. a) What are the services provided by the transport layer?  
b) How is connection established and released in TCP?

8. Explain how the DNS allows a large number of DNS lookups to be processed. What strategy is adopted to make the process of DNS lookups efficient?

### SECTION E

9. Answer briefly:

- a) What is the difference between simplex & half duplex?
- b) What is the difference between baseband and broadband cables?
- c) IP defines how many bits for representing an IP and MAC address?
- d) What is the use of PING?
- e) What is IEEE 802.3 used for?
- f) What is RARP used for?
- g) What are ISDN networks?
- h) What is the format of using nslookup?
- i) What is the difference between OSI and TCP OSI Layer Model?
- j) What are the main features of IEEE 802.3?