

DiplETE – ET/CS (Current & New Scheme)

Time: 3 Hours

JUNE 2017

Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.
- Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.
- Any required data not explicitly given, may be suitably assumed and stated.

Q.1 Choose the correct or the best alternative in the following: (2×10)

- a. Internet evolved from which of the following networks?

(A) SATNET	(B) ARPANET
(C) ATM	(D) GSWAN
- b. _____ Layer of OSI model deals with the mechanical, electrical, functional and procedural specifications of interface and transmission media.

(A) Physical	(B) Data-Link
(C) Transport	(D) Network
- c. In computer networks, transmission media can be divided into _____.

(A) Two broad categories	(B) Three broad categories
(C) Four broad categories	(D) None of these
- d. Omni directional waves are propagated in _____.

(A) One direction	(B) Depends on situation
(C) All direction	(D) Both (A) & (B)
- e. Which of the following is NOT the encoding technique used with Digital data, analog signal?

(A) ASK	(B) FSK
(C) PSK	(D) PCM
- f. CRC stands for:

(A) Code Recycling Check	(B) Cyclic Redundancy Check
(C) Common Redundancy Code	(D) None of these
- g. Which of the following is a disadvantage for networks with bus topology?

(A) Less cabling than ring	(B) needs central device
(C) Bus faults down entire network	(D) it is cheaper
- h. Fast Ethernet uses which access method?

(A) CSMA/CD	(B) CSMA/CA
(C) CSMA/Polling	(D) CSMA/CB

- i. Address space of IPv6 is
 (A) 2^{32} (B) 264
 (C) 2^{96} (D) 2^{128}
- j. E-Mail server uses which protocol to send mail?
 (A) FTP (B) SMTP
 (C) POP (D) SNMP

**Answer any FIVE Questions out of EIGHT Questions.
 Each question carries 16 marks.**

- Q.2** a. State the full form of ISO-OSI. List the layers of OSI reference model and summarize their functions. (8)
- b. Write a note on key elements of the Internet with figure. (6)
- c. Draw neat & labeled block diagram of simplified Data Communications Model. (2)
- Q.3** a. Explain construction & working of coaxial cable in detail. (8)
- b. Explain the reasons of “Digital transmission being the preferred method of transmission despite a large analog base” (5)
- c. Write a note on Infrared as wireless transmission media. (3)
- Q.4** a. Explain Quadrature Amplitude Modulation (QAM) technique. (8)
- b. Write a short note on Topology as Line Configuration characteristic. (4)
- c. Write a short note on Types of Errors. (4)
- Q.5** a. List and briefly define some of the requirements for effective communications over a data link. (5)
- b. List and briefly define three versions of ARQ. (3)
- c. Given a channel of large capacity, how does one subdivide the channel into smaller logical channels for individual users? (8)
- Q.6** a. How communication is done in circuit switched networks? Explain with example. (8)
- b. Discuss explicit congestion signalling for congestion control. (8)
- Q.7** a. Explain star topology with figure. Also state its advantages and disadvantages. (8)
- b. List and briefly define key requirements for wireless LANs. (8)
- Q.8** a. Draw and explain fields of IPv4 datagram header format. (8)
- b. Discuss the enhancements of IPv6 over IPv4. (5)
- c. Give reason why following IPv4 addresses are incorrect: (3)
- (i) 192.068.72.83 (ii) 127.20.256.87 (iii) 150.32.33.01101101
- Q.9** Write short note on ANY TWO: (8+8)
- (i) User Datagram Protocol (UDP). (ii) Simple Mail Transfer Protocol (SMTP)
- (iii) E-mail’s user agent