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Total No. of Questions : 09] **Paper ID [CS303]** [Total No. of Pages : 02

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Semester - 5th)

COMPUTER NETWORKS (CS - 303)

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Section - A is **compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

Section - A

Q1)

(10 × 2 = 20)

- a) What are the units of Period and Frequency.
- b) Can the bit rate be less than the pulse rate? Why or why not?
- c) How is baud rate related to transmission bandwidth in ASK & FSK?
- d) How do guided media differ from unguided media?
- e) What are two types of switches used in circuit switching?
- f) What are the main users of ADSL technology?
- g) Discuss the concept of redundancy in error detection.
- h) Compare datagram and virtual circuits.
- i) Differentiate between error control and flow control.
- j) Differentiate between FDM and WDM? Which multiplexing technique use digital signals?

Section - B

(4 × 5 = 20)

Q2) For the following frequencies calculate the corresponding periods. Write the result in seconds, milliseconds, microseconds, nanoseconds and picoseconds: 24 Hz; 8 MHz; 140 KHz; 12 THz.

Q3) If a bit rate of a signal is 1000 bps, how many bits can be sent in 5 s ? How many bits in 1/5 s ? How many bits in 100 ms ?

Q4) What is the significance of the twisting in twisted-pair cable? Why is coaxial cable superior to twisted-pair cable?

Q5) Compare the mechanism of a space division switch to the mechanism of a time division switch.

Q6) Compare SDSL and HDSL technologies.

Section - C

(2 × 10 = 20)

Q7) (a) Compare EIA-449 & EIA-530 structures.

(b) How is the STS multiplexer different from an add/drop multiplexer. Since both can add signals?

Q8) (a) Compare Frequency hopping spread spectrum & direct sequence spread spectrum.

(b) Is bit padding a technique for FDM or TDM? Is the framing bit used in FDM or TDM?

Q9) Draw and explain TCP/IP protocol architecture and compare it with OSI model.