

MAHATMA GANDHI UNIVERSITY
MCA DEGREE EXAMINATION
MODEL QUESTION PAPER
(2011 Revised Syllabi)
Third Semester
MCA305 DATA COMMUNICATIONS

Time : Three hours

Maximum : 75 Marks

Part A

Answer any ten questions.
Each question carries 3 marks.

1. Define the terms frequency and period of a signal.
2. Compare analog and digital transmission.
3. A periodic signal is decomposed into five sine waves with frequencies 100, 200, 300, 400, 800 Hz what is the bandwidth?
4. Define line coding? What are its characteristics?
5. Consider the following lists stream: 110011000101 . Encode the above bit stream using.
a) NRZ – L b) NRZ – I
6. Define sampling theorem.
7. Define the terms ‘bit rate’ and ‘band rate’. Give the relation between them?
8. Explain the terms multiplexing and demultiplexing.
9. Compare parallel transmission and serial transmission.
10. Differentiate between circuit switching and packet switching.
11. What is hand off?
12. Explain frequency – Reuse principle?

(10 x 3 = 30 marks)

Part B

All questions carry equal marks.

13. a) Explain the different transmission impairments that affect data communications
OR
b) Explain characteristics of micro waves and its applications in detail.
14. a) Differentiate between Manchester and differential Manchester encoding methods with relevant wave forms.
OR
b) Explain various steps in pulse code modulation.
15. a) With a neat diagram, explain FDM with respect to multiplexing and demultiplexing, and mention its applications.
OR
b) Explain ASK, PSK, and QAM in detail.
16. a) What are virtual circuit networks? Explain the characteristics of virtual circuit networks.

OR

b) Differentiate between circuit switching and packet switching.

17. a) Explain ADSL technology in detail.

OR

b) Present a tutorial on second generation mobile systems.

(5 X 9 = 45 marks)