DATA COMMUNICATION
NOV - DEC 2009

Time : Three Hours Pages :- 02 **Max. Marks : 100**

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Student should note, no suppliment will be provided.
4. Attempt **any two** questions from each unit.
5. Figures to the right indicate full marks.
6. Draw neat diagrams whenever necessary.
7. Assume suitable data if required.

UNIT - I

1. a) Define following with example. 10

   i) Throughput.

   ii) Propagation speed.

   iii) Wavelength.

   iv) Transmission impairment.

   v) Propagation time.

   b) i) A signal of 100w power, going into the channel with noise of 10w. In order to send 10,000 bits/ sec How much Bandwidth needed ? 5

   ii) What are different types of signals used in data communication ? Compare them. 5

   c) Explain with diagram OSI reference model. 10

UNIT - II

2. a) What is sampling ? State and explain Nyquist's theorem. 10

   b) What are different digital modulation techniques ? Explain any one in detail. 10