



5 Attempt any two questions:  $10 \times 2 = 20$

- (a) Discuss the Single and Multistage Realization, and draw the polyphase filter structure for implementing the design of Phase Shifters.
- (b) Define wavelet transform and discuss the filter bank implementation of wavelet expansion of signal.
- (c) Design a two stage decimator for the following specification.

$D=100$ ; Passband :  $0 \text{d}'' \text{F d}'' 50$ ; Transition band :  $50 \text{d}'' \text{F d}'' 55$

Input sampling rate : 10 kHz; Ripple  $\delta_1 = 10^{-1}$  ;  $\delta_2 = 10^{-3}$

—x—

[uptuonline.com](http://uptuonline.com)