



**OR**

b) Describe the timing recovery technique for various receiver architecture. 13 K2 CO3

14. a) With neat diagram, describe the hardware implementation of smart antennas in SDR. 13 K2 CO4

**OR**

b) Show the architectures of Flash ADC and String DAC and explain. 13 K2 CO4

15. a) Describe the DSP architecture in improving the performance of the software radio. 13 K2 CO5

**OR**

b) Illustrate with neat architecture and describe about FPGA implementation in SDR. 13 K2 CO5

**PART - C (1× 15 = 15 Marks)**

16. a) Explain the architecture of USRP and how hardware devices can be programmed on it. 15 K2 CO6

**OR**

b) Illustrate with neat sketch and describe the ideal software radio with a case study – SPEAK easy. 15 K2 CO6