



networks.

**OR**

- b) (i) Discuss some applications of HART. 8,K2,CO3  
(ii) Classify the types of layers in PROFIBUS and explain each in detail. 5,K2,CO3

14. a) (i) Categorize the MODBUS functions and message format with an application. 8,K2,CO4  
(ii) Classify the features of MODBUS. 5,K2,CO4

**OR**

- b) Discuss the basic operation of SCADA and its application in Power Generating Stations. 13,K2,CO4

15. a) (i) Explain the wireless sensor network architecture with a diagram. 8,K2,CO5  
(ii) Interpret the energy consumption rate for sensors in a wireless sensor network. 5,K2,CO5

**OR**

- b) (i) Summarize about the wireless HART in detail. 5,K2,CO5  
(ii) Outline the working principle of Zigbee protocol with an architecture diagram. 8,K2,CO5

**PART - C (1 × 15 = 15 Marks)**

16. a) Design a complete package that helps to build, test and deploy HART enabled product for a leading oil and gas company, which holds turbine meter, flow meters and flow computers. 15,K3,CO3

**OR**

- b) Elaborate the basic components and architecture of Foundation field bus with neat diagram. 15,K3,CO3