Q.1 Answer the following questions related to Embedded System Architecture: (a) Explain the role of RTOS in embedded systems. Provide examples. (b) What is the difference between microcontrollers and microprocessors? (c) Discuss the significance of power optimization techniques in embedded devices. (d) Why is memory management crucial in embedded systems? Explain with case studies. (e) How does an interrupt-driven system enhance real-time performance? [15]