First question is compulsory.
Answer any FOUR from the remaining questions.
All questions carry equal marks.

---

1. Answer the following briefly:

(a) Characteristics of synchronous communication.
(b) Timer.
(c) Controlled dataflow graph.
(d) Semaphore.
(e) Modular design.
(f) Pipes.
(g) Kernel.
(h) Software validation.
(i) Cross compiler.

2. (a) Comment on various Timer and Counting devices.

(b) Elucidate on ISA, PCI, PCI-X and Advanced buses used for Parallel Communication.

3. (a) With reference to embedded systems explain context switching, Latency and deadline.

(b) Discuss interrupt servicing mechanism.

4. (a) Describe the phases in Software development and its models.

(b) Describe real time programming issues during the software development process.

5. (a) Explain various Interprocess Communication Mechanisms.

(b) Discuss IEEE standard POSIX 10003.2B function for standardization of RTOS.

6. (a) Compare the advantages and disadvantages of data transfers using Serial Ports.

(b) Explain modes of serial communication.

7. (a) What is the importance of device management in an OS for an embedded system?

(b) What are the OS units at RTOS kernel? Explain each of them.

8. (a) Explain the process modeling for software analysis before software implementation.

(b) Describe the modeling of multiprocessor system.