2022

Time : 3 hours

Full Marks : 80

The figures in the right-hand margin indicate marks.

Answer **all** questions.

1. (a) What is an Embedded system ? 2

   (b) What is SoC ? Explain with suitable diagram ?

   12

   (c) Give some example of use of SoC. 2

OR

   (a) Give any six examples of embedded system used in our daily life. 3

   (b) Describe the different parts of embedded system with suitable diagram. 10

(c) What is the role of core in embedded system ? Give some examples of cores. 3

2. (a) Explain the working of device driver with suitable diagram. Exaplin its role in the OS context. 12

(b) Explain the working of any one serial communication used in embedded system.

4

OR

(a) What is the role of communication interface in embedded system ? 6

(b) Explain the working of CAN interface. 4

(c) Write short notes on (i) ISA (ii) PCI. 6

3. (a) Explain the different types of memory used in embedded system. 4

(b) What is the difference between PROM and EPROM ? 8

(c) How does the memory selected for embedded systems ? 4

OR

(a) What are the building blocks of UML ? Explain in detail. 8

(b) Explain the different types of UML diagrams and their significance in each stage of the system development life cycle. 8

4. (a) What do you mean by RTOS ? 3

(b) What is the role of Real-time operating system in Embedded system ? 6

(c) What are the different RTOS used in Embedded system ? Explain any one. 7

OR

(a) What is an interrupt ? 4

(b) What are the steps of interrupt handling ? 6

(c) Explain the various process interaction models in detail. 6

5. (a) What is hardware software co-design ? Explain with suitable diagram. Explain the fundamental issues in hardware software co-design. 16

OR

(a) What are the major processor selection criteria for an embedded system ? 7

(b) What is Inter Process Communication (IPC) ? Give an overview of different IPC mechanisms adopted by various operating systems. 6

(c) What is deadlock ? What are the different conditions favoring deadlock ? 3

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