CBCS SCHEME

USN | | | | | | | | | |

15MT743

Seventh Semester B.E. Degree Examination, June/July 2019
Real Time Systems

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Define Real Time System. Explain the elements of a computer control system. **(08 Marks)**
b. With an example, explain the classification of Real Time System. **(04 Marks)**
c. Explain the classification of programs. **(04 Marks)**

OR

2 a. With a neat diagram, explain a simple chemical reactor vessel as a sequence control. **(06 Marks)**
b. With an example explain the supervisory control system. **(08 Marks)**
c. What are the benefits of computer control system? **(02 Marks)**

Module-2

3 a. With a neat diagram, explain the general purpose digital computer. **(08 Marks)**
b. Explain the single chip microcomputer and microcontroller. **(05 Marks)**
c. Briefly explain the SIMD and MIMD parallel processors. **(03 Marks)**

OR

4 a. With a neat block diagram and timing diagram explain digital input interface. **(08 Marks)**
b. Explain the ISO 7-layer model as standard interface. **(08 Marks)**

Module-3

5 a. Explain the following terms:
i) Security
ii) Readability
iii) Portability. **(06 Marks)**
b. Describe declaration, initialization of variables and constants. **(06 Marks)**
c. Explain modularity and variables. **(04 Marks)**

OR

6 a. Explain data types, sub range types and derived types. **(06 Marks)**
b. Explain low-level facilities. **(04 Marks)**
c. Explain interrupt and device handling and run-time approach. **(06 Marks)**

Module-4

7 a. Explain general purpose O.S. **(04 Marks)**
b. With a neat diagram, explain multiuser and multi tasking OS. **(08 Marks)**
c. Explain the priority structure. **(04 Marks)**

OR

8 a. What is code sharing? Explain the two methods of code sharing. **(08 Marks)**
b. Define mutual exclusion. Explain mutual excursion using binary semaphore. **(06 Marks)**
c. What are the functions and primitives of minimum OS kernel. **(02 Marks)**

Module-5

9 a. With a neat diagram, explain planning phase and development phase. **(08 Marks)**
b. Explain foreground/background system. **(08 Marks)**

OR

10 a. Explain software modeling. **(04 Marks)**
b. Describe Ward and Mellor method. **(06 Marks)**
c. Explain Hately and Pirabhi method (only the structure of requirement model). **(06 Marks)**

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