CBCS SCHEME

USN | | | | | | | | | | |

20EVE22

Second Semester M.Tech. Degree Examination, July/August 2022
Real Time Operating System

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. Describe the six real time service utility functions with relevant graph. **(10 Marks)**

b. With the help of pseudo code and state diagram, explain basic real time service using polling technique. **(10 Marks)**

OR

2 a. Explain real time service time line with hardware acceleration. **(08 Marks)**

b. Explain real time service time line. **(07 Marks)**

c. Explain briefly real time standards. **(05 Marks)**

Module-2

3 a. Explain briefly relationship between sufficient and NQS feasibility tests. **(10 Marks)**

b. With necessary assumptions explain two cases of RMLUB. **(10 Marks)**

OR

4 a. Explain briefly :
i) Necessary condition
ii) Sufficient conditions
iii) Preemptive fixed – priority policy
iv) Rate monotonic least upper bond. **(10 Marks)**

b. Explain the overload scenario in RM policy and EDF policy. **(10 Marks)**

Module-3

5 a. Explain the following :
i) Shared memory
ii) ECC memory. **(10 Marks)**

b. Explain with basic block diagram of deadlock and live lock. **(10 Marks)**

OR

6 a. Explain the following :
i) Direct Mapping of memory
ii) Two – way set-associative mapping of memory. **(10 Marks)**

b. Explain with basic block diagram of unbounded priority inversion scenario. **(10 Marks)**

Module-4

7 a. Comparison of PCI and VME Buses. **(05 Marks)**

b. Explain the following :
i) USB
ii) Firewire
iii) PCI – Express
iv) Ethernet. **(15 Marks)**

OR

8 a. Explain with basic block diagram of system interfaces for an embedded system. **(10 Marks)**

b. Explain the following :
i) Hardware break points
ii) Software break points. **(10 Marks)**

Module-5

9 a. Explain the following :
i) Process creation
ii) Thread creation. **(10 Marks)**

b. Explain the following :
i) Semaphores
ii) Message queue
iii) Task/thread communication. **(10 Marks)**

OR

10 a. Explain the inter task communication with a simple code. **(10 Marks)**

b. Explain the following with an example each
i) Shared Buffer ii) IPC. **(10 Marks)**

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