C.U.SHAH UNIVERSITY Winter Examination-2019

Subject Name: Embedded Systems

| | Subject Code: 4TE07ESY1 | | | Branch: B.Tech (EC) | | | |
|------|--|--|---|---|--------------------------------------|------------|--|
| | Semester | r:7 Date: | 18/11/2019 | Time : 10:30 To 01:30 | Marks : 70 | | |
| | Instructions: (1) Use of Programmable calculator & any other electronic instrument is prohibited. (2) Instructions written on main answer book are strictly to be obeyed. (3) Draw neat diagrams and figures (if necessary) at right places. (4) Assume suitable data if needed. | | | | | | |
| Q-1 | a) b) c) d) e) f) g) h) i) j) k) l) m) n) | Answer the follow What is a device du What are Hard and What are Recursive What do you mean What is a Memory What is a Segment What is the role of What is the role of What is Watchdog What is Mutex? What is Starvation What is Deadloak? What is Multithrea Write instruction to rest of the pins. | ving questions. tiver? Soft Real Time System e Functions? by Interrupt Latence Leak? ation Fault? Segment Register? Timer? ding? o configure P0.14 as p set first 12 pins of | stems? cy? s output pin using left oper: PORT 0. | ator and reset | (14) | |
| Atte | mpt any f | four questions from | n Q-2 to Q-8 | | | | |
| Q-2 | (a) (b) | Attempt all questi Classify Embedde System design. Explain the ARM p | ions d system and disc programmer's mode | uss the various componer el with appropriate diagram | nts of embedded | (14) | |
| Q-3 | (a) (b) | Attempt all questi How ARM handles and their priorities With diagram exp 'isochronous' and | ions s exception? List al in ARM processor. plain three modes 'asynchronous'. | l the steps. Also discuss va of serial communication | rious Exceptions , 'synchronous', | (14) | |
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| Q-4 | | Attempt all questions | (14) | | | | |
|------------|-------------|--|------|--|--|--|--|
| | (a) | a) Which are the wireless and mobile system protocols available for the embedded systems? Explain any two of the protocols in detail | | | | | |
| | (b) | Explain concept of delayed branch. Why FIQ response is fast in ARM processorcompared to IRQ? | | | | | |
| Q-5 | | Attempt all questions | (14) | | | | |
| C C | (a) | What are the parameters at a TCB of task? Why should each task have distinctTCB? | | | | | |
| | (b) | What is bus arbitration? What are the methods used for bus arbitration? | | | | | |
| Q-6 | | Attempt all questions | | | | | |
| L. | (a) | What is DMA? Using diagram show the operation of a DMA controller. | | | | | |
| | (b) | Explain device, file and I/O management in RTOS. | | | | | |
| O-7 | | Attempt all questions | (14) | | | | |
| C | (a) | Discuss and compare process, task and thread. | | | | | |
| | (b) | What is RTOS? Enlist the goals and services provided by RTOS. | | | | | |
| O-8 | | Attempt all questions | (14) | | | | |
| C - | (a) | Explain earliest deadline first (EDF) precedence and rate monotonic schedulers(RMS) model. | () | | | | |
| | (b) | What is Semaphore? Explain where Semaphore can be utilized? Describe the functions provided by RTOS to utilize it. | | | | | |

