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Question Paper Code: 47404

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Seventh Semester

Electronics and Communication Engineering

14UEC704 EMBEDDED AND REAL TIME SYSTEMS

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- The embedded design process that starts with requirements is
 - Top - Down
 - Bottom Up
 - Redemption
 - None
- ARM7 is a _____ processor with _____ Architecture
 - RISC, Harvard
 - CISC, Von Neumann
 - RISC, Von Neumann
 - CISC, Harvard
- DMA operation is controlled by
 - CPU
 - Unique Controller
 - By both
 - By any one
- The major high-speed serial bus is _____
 - IEEE1493
 - IEEE1394
 - IEEE1934
 - IEEE1943
- Preemptive scheduling gives importance to
 - Low priority task
 - High Priority task
 - Gives equal priority to all
 - As per OS

6. The priorities that change during execution is
(a) Static (b) Dynamic (c) Both (d) None
7. The interconnect network used in automotive electronics is
(a) I²C (b) Ethernet (c) Internet (d) CAN
8. Internet enabled network has applications in
(a) Hard Real time (b) Soft Real Time (c) In both a & b (d) Non Real Time
9. Software Modem utilizes
(a) PSK (b) ASK (c) FSK (d) QPSK
10. Example of Lossy Data compression is
(a) MPEG (b) JPEG (c) GIF (d) a & b

PART - B (5 x 2 = 10 Marks)

11. Compare CISC and RISC processors.
12. Write short notes on DMA.
13. Define RTOS and State the general difference between RTOS and general purpose OS.
14. Give examples of internet enabled systems.
15. Infer H/W and S/W co-design and state its need.

PART - C (5 x 16 = 80 Marks)

16. (a) Discuss the embedded system design process in detail. (16)
Or
(b) Explain about CPU performance and Data instructions of ARM processor. (16)
17. (a) Give a detailed account of basic compilation techniques. (16)

Or

(b) Discuss the process of program validation and testing. (16)

18. (a) Discuss about interprocess communication mechanism of embedded applications. (16)

Or

(b) Illustrate Rate Monotonic algorithm with an example given below and compare it with EDF. (16)

Process	Execution time	period
P1	1	4
P2	2	6
P3	3	12

19. (a) Write short notes on accelerators and Explain the I²C bus operation. (16)

Or

(b) Elaborate Internet enabled operation and state applications. (16)

20. (a) With a neat diagram, Describe how Personal Digital Assistant and data compressor are designed (16)

Or

(b) Elaborate the embedded design with the example of Data compressor. (16)
