Reg. No. :

Question Paper Code: 47404

B.E. / B.Tech. DEGREE EXAMINATION, NOV 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)

1.   An embedded system must have

    (a) hard disk   (b) processor and memory

    (c) operating system   (d) processor and input-output unit

2.   ARM7 is a _____ processor with _____Architecture

    (a) RISC, Harvard   (b) CISC, Von Neumann

    (c) RISC, Von Neumann   (d) CISC, Hardvard

3.   DMA operation is controlled by

    (a) CPU   (b) Unique Controller   (c) By both   (d) By any one

4.   Executable binary file generation is carried out by

    (a) Assembler   (b) Loader   (c) Linker   (d) Compiler

5.   Preemptive scheduling gives importance to
    (a) Low priority task   (b) High Priority task

    (c) Gives equal priority to all   (d) 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) I^2C (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. Huffman coding is used for_____
    (a) Text compression   (b) Video compression

    (c) Image compression   (d) File compression

PART - B (5 x 2 = 10 Marks)

11. How is ARM processor different from other 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) Describe the various stages involved in the embedded system design process.   (16)

17. (a) Give a detailed account of basic compilation techniques. (16)

Or

   (b) Discuss in detail about the basic compilation process . (16)

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

Or

   (b) Analyze the various inter process communication mechanism in detail (16)

19. (a) Write short notes on accelerators and Explain the I^2C bus operation. (16)

Or

   (b) Illustrate in detail about distributed embedded architecture. (16)

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

Or

   (b) Discuss about principle of software MODEM with neat block diagram (16)

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