Reg. No. : | | | | | | | | | | |

Question Paper Code: 41854

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Fifth Semester

Information Technology

14UIT504 - EMBEDDED COMPUTING SYSTEMS

(Regulation 2014)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. ARM stands for

   (a) Advanced Rate Machines
   (b) Advanced RISC Machines
   (c) Artificial Running Machines
   (d) Aviary Running Machines

2. An embedded system must have

   (a) Hard disk   (b) Processor and memory
   (c) Operating system   (d) Processor and input-output units

3. Bus is a set of

   (a) Wires   (b) Cards   (c) Chips   (d) Pins

4. _____ is the hardware signal to be set when the timer reaches zero.

   (a) I/O Flag   (b) Zero Flag   (c) Status Flag   (d) Reset Flag

5. _____ is defined as a process of selection which says that a process has right to use the processor at given time.

   (a) Program   (b) Scheduling
   (c) Relocation   (d) Controller

6. In real time operating system

    (a) Control flow graphs   (b) Control/data flow graphs

    (c) Data flow graph   (d) Flow graph

7. Which process can be affected by other processes executing in the system?

    (a) cooperating process   (b) child process

    (c) parent process   (d) init process

8. Which one of the following is not a real time operating system?

    (a) POSIX   (b) Windows CE

    (c) RTLinux   (d) Palm OS

9. _____ is used to compress video.

    (a) JPEG   (b) JPG   (c) MPEG   (d) PNG

10. JPEG Image data divided into blocks of

    (a) 4 x 4 pixels   (b) 2 x 2 pixels   (c) 6 x 6 pixels   (d) 8 x 8 pixels

PART - B (5 x 2 = 10 Marks)

11. Name some of the hardware parts of embedded systems?

12. Name any two techniques used to optimize execution time of program?

13. Mention the different styles of IPC?

14. Mention the networks for distributed embedded systems.

15. Define data compressor.

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Explain the modeling of multi-processor systems.   (8)

       (ii) Describe the software tools used for designing an embedded system.   (8)

Or

   (b) What do you mean by throwing an exception? How is the exception condition during execution of a function handled.   (16)

17. (a) With a neat sketch, explain the role of assemblers and linkers in compilation process.   (16)

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(b) Explain in detail about program validation and testing. (16)

18. (a) Explain Inter-process communication and synchronization with signals. (16)

Or

(b) Explain in detail about inter process communication mechanisms. (16)

19. (a) Discuss about different types of design flows used for design methodologies. (16)

Or

(b) Explain in detail about quality assurance. (16)

20. (a) Summarize the sequence diagram of taking picture with digital still camera. (16)

Or

(b) Explain briefly about the development and debugging of an alarm clock. (16)

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