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Question Paper Code: 45804

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

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. _____ is an internally detected error.

    (a) Trap   (b) Exception   (c) Flaw   (d) Preemption

2. ARM is a _____ architecture.

    (a) store   (b) load-store   (c) load   (d) none of these

3. Bus is a set of

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

4. A computer program that converts an entire program into machine language at one time is called

    (a) Interpreter   (b) CPU   (c) Compiler   (d) Simulator

5. The method for updating the main memory as soon as a word is removed from the Cache is called

    (a) Write-through   (b) write-back
    (c) protected write   (d) cache-write

6. _____ is a model of a program with no conditionals.

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

   (c) Data flow graph   (d) Flow graph

7. Which phase makes detailed measurements of the development process and product quality in Capability Maturity Model (CMM)?

   (a) initial   (b) repeatable   (c) defined   (d) managed

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. What is post indexing addressing mode in ARM?

12. What is a cross compiler?

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)

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17. (a) Write in detail about the components of embedded programs. (16)

Or

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

18. (a) Discuss in detail about preemptive real-time operating systems. (16)

Or

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

19. (a) Discuss in detail about quality assurance techniques used in embedded systems.

(16)

Or

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

20. (a) Discuss the design and implementation of Telephone answering machine for business environment. (16)

Or

(b) Draw and discuss the block diagram and architecture of Video accelerator. (16)

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