

Reg. No. :

--	--	--	--	--	--	--	--	--	--

**Question Paper Code: 45804**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

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. 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. In a non-vectorized interrupt, the address of interrupt service routine is
- (a) Obtained from interrupt address table  
(b) Supplied by the interrupting I/O device  
(c) Obtained through Vector address generator device  
(d) Assigned to a fixed memory location
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. Why debugging is a challenge in real time systems?
14. Mention the networks for distributed embedded systems.
15. Define data compressor.

PART - C (5 x 16 = 80 Marks)

16. (a) What are the requirements of an embedded system design process? Draw the architecture design and explain in detail the components involved. (16)

Or

- (b) What do you mean by throwing an exception? How is the exception condition during execution of a function handled. (16)
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) Write in detail about shared memory multiprocessors. (16)
19. (a) Discuss about the advanced techniques for specification. (16)
- Or
- (b) Write in detail about shared memory multiprocessors. (16)
20. (a) (i) Explain the working of audio players. (8)
- (ii) What is the main functionality of a digital camera? Explain. (8)
- Or
- (b) Draw and discuss the block diagram and architecture of Video accelerator. (16)
-

