Reg. No. :

Question Paper Code: 41854

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

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. Which is not a component of embedded programs?

    (a) state machine   (b) processor   (c) circular buffer (d) queue

4. _____ testing strategy methods generate tests based on the program structure.

    (a) Black box   (b) Unit   (c) Regression   (d) Clear-box

5. _____ defines how processes are selected for promotion from the ready state to the running state.

    (a) Scheduling policy   (b) Preemption
    (c) Priorities   (d) Context switching

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. _____ assumes that several versions of the system will be built.

    (a) Spiral model   (b) Waterfall model

    (c) Concurrent engineering   (d) Reverse engineering

9. _____ refers to the message recorded by the owner of the machine and played at the start of every phone call.

    (a) Messaging   (b) Incoming message

    (c) Outgoing message   (d) Both incoming / outgoing message

10. _____ not only captures images, it also performs a substantial amount of image processing that formerly was done by photofinishers.

    (a) Audio player   (b) Data compressor

    (c) Video accelerator   (d) Digital still camera

PART - B (5 x 2 = 10 Marks)

11. What are the sophisticated functionalities of embedded systems?

12. What are the compilation techniques available in an embedded computing system?

13. In interprocess communication, how does a process send a communication?

14. Define concurrent engineering.

15. How is similarity measured in a video accelerator?

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

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(b) Explain in detail about the ARM processor. (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) Explain in detail about interprocess communication mechanisms. (16)

19. (a) Discuss about the advanced techniques for specification. (16)

Or

(b) Explain in detail about quality assurance. (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) Explain in detail about the functioning of video accelerators. (16)

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