

SEM	SET	PAPER CODE	TITLE OF THE PAPER
IV	2013	12PEL4112	EMBEDDED SYSTEM-III: ARM AND EMBEDDED LINUX

SECTION – A**Answer all the questions:****20 x 1 = 20****Choose the correct answer:**

- The size of the registers available in ARM CPU is _____.
 - 8 bit
 - 16 bit
 - 32 bit
 - 64 bit
- In the first instruction cycle the core fetches _____ instruction from memory.
 - SuB
 - ADD
 - SuB and ADD
 - None of the above
- A minimal working embedded Linux system needs _____ of SDRAM.
 - 8MB
 - 16MB
 - 4MB
 - 32MB
- _____ is used as plug in for microsoft visual studio.
 - Linux
 - Visuallynx
 - Unix
 - Blue Cat Linux
- The target name decides the _____ that is being built and its output.
 - compiler
 - processor
 - assembler
 - linker

6. The first step in building GCC is to set up _____.
 - a) architecture
 - b) kernel headers
 - c) source
 - d) patches
7. The character devices are exported as _____ devices.
 - a) read
 - b) write
 - c) read-write
 - d) none of the above
8. The boot loaders relocate themselves to the _____.
 - a) Flash
 - b) ROM
 - c) RAM
 - d) Cache
9. A UART hardware has _____ UART port.
 - a) 1
 - b) 2
 - c) 3
 - d) 4
10. The sender and receiver synchronize themselves through _____.
 - a) bus
 - b) SDA line
 - c) clock line
 - d) none of the above

Fill in the blanks:

11. The Arm core uses _____ to monitor and control internal operations.
12. The idea of POSIX is to improve the probability of software written for _____.
13. _____ provides open source Linux distribution in the form of Embedded Linux Development kit.
14. _____ is the set of software used to initialize the hardware devices on the board.
15. _____ are part of the Linux IO subsystem.

State True or False:

16. Interrupts suspend the normal execution of sequential instructions and jump to a specific location.
17. Memory map defines the layout of the Chip's addressable space.
18. Minimal GCC is the compiler that has all the language support.
19. MTD is a separate class of driver set like a character or block.
20. TTY layer is used for providing access to the low-level serial port.

SECTION – B

Answer all the questions:

5 x 4 = 20

21. a. Draw the block diagram of ARM 7 three stage pipe line and explain.

OR

- b. Discuss the 4 different fields of current program status register.
22. a. With neat diagram explain CAN controller.

OR

- b. Explain briefly about uART.
23. a. Write about Metrowerks Linux functions, applications and service.

OR

- b. Explain the GNU cross platform Tool chain.

24. a. Explain Boot Loader Interface.

OR

b. Discuss MTD architecture and its features.

25. a. Explain about I2C subsystem on Linux.

OR

b. What is a watchdog Timer? State one application of watchdog timer.

SECTION – C

Answer any FOUR questions:

4 x 15 = 60

26. In detail, explain interrupts and vector table.

27. Explain Real Time clock with neat diagram.

28. Write about Embedded Linux distributions in detail.

29. How can you optimize storage space in an embedded system?

30. Explain the operating system porting layer.
