

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014**

**Subject code: 725402**

**Date: 18-06-2014**

**Subject Name: Embedded Linux and Programming**

**Time: 02:30 pm - 05:00 pm      Total Marks: 70**

**Instructions:**

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full mark.**

- Q.1    (a)** Explain similarities and differences between GPOS and Embedded Operating System. **07**
- (b)** What are the benefits of choosing Embedded Linux over other development tools and embedded OS available in the market? **07**
- Q.2    (a)** Explain working of following in detail: Assembler, Linker, Compiler **07**
- (b)** What is preprocessor directive in C? Explain following preprocessor directives: #if, #ifdef, #ifndef **07**
- OR**
- (b)** Brief about call graph and flat profiling with respect to GNU GDB. **07**
- Q.3    (a)** Brief about different kind of Host/ Target debug set-ups. What is the limitation of Host/Target debug setup when Host and target are linked with TCP/IP network interface? **07**
- (b)** State required Hardware characteristic to run a Linux system and draw architecture of a generic Linux system. **07**
- OR**
- Q.3    (a)** What kind of Hardware support is available in Embedded Linux for Buses and Interfaces? **07**
- (b)** Which software tools are included in building a cross-toolchain for target system? Brief about all tools. **07**
- Q.4    (a)** Brief about cross-toolchain development tool "Crosstool". **07**
- (b)** Explain different Kernel configuration methods for Embedded Linux. **07**
- OR**
- Q.4    (a)** Write in a brief about Busybox. **07**
- (b)** What is "vendor lock in" problem in Embedded Linux development? How one can get rid of it? **07**
- Q.5    (a)** Explain the role of device driver. **07**
- (b)** Brief about char device driver, block device driver and network device driver **07**
- OR**
- Q.5    (a)** Explain steps of inserting a kernel module. **07**
- (b)** Explain Linux filesystem. **07**

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