

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**
