

C.U.SHAH UNIVERSITY

Winter Examination-2015

Subject Name: Embedded Linux

Subject Code: 5TE03ELX1 **Branch:** M.Tech (VLSI and Embedded Systems Design)

Semester: 3 **Date:** 24/12/2015 **Time:** 02:30 To 5:30 **Marks:** 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
 - (2) Instructions written on main answer book are strictly to be obeyed.
 - (3) Draw neat diagrams and figures (if necessary) at the right places.
 - (4) Assume suitable data if needed.
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SECTION – I

- Q-1 Attempt the Following questions (07)**
- a. Define term an embedded system.
 - b. State any two key differences of embedded and desktop Linux.
 - c. Enlist some popular embedded Linux distributions.
 - d. State any two key points that should be considered before finalizing embedded Linux distributions.
 - e. State any two advantages of commercial embedded Linux distributions.
 - f. State any four characteristics of an embedded system.
 - g. State the main task of BIOS on power up.
- Q-2 Attempt all questions (14)**
- (a) Give the different applications of embedded system. Explain key factors that differentiate an embedded system from a desktop computer. (05)
 - (b) Explain any two popular embedded Linux distributions. (05)
 - (c) State the different tasks performed by bootloader on power up. (04)
- OR**
- Q-2 Attempt all questions (14)**
- (a) Explain some benefits of embedded Linux against proprietary embedded operating systems. (05)
 - (b) Write a short note on porting roadmap. (05)
 - (c) Explain briefly with diagram typical embedded system. (04)
- Q-3 Attempt all questions (14)**
- (a) Explain typical embedded Linux setup. (05)
 - (b) Write a note on Intel Atom stand-alone processor. (05)
 - (c) Write a short note on shell programming. (04)
- OR**
- Q-3 Attempt all questions (14)**
- (a) Explain basic Linux commands related to directories and files. (05)
 - (b) What is Shell? List and explain different shells available on Linux. (05)



- (c) Explain Pentium M companion chipset 855GM with diagram. (04)

SECTION – II

Q-4 Attempt the Following questions (07)

- a. What do you mean by vmlinux?
- b. State any two ways for obtaining embedded Linux kernel for your hardware platform.
- c. Explain briefly root file system.
- d. State the contents of following root directory entries
1) bin 2) home 3) lib 4) tmp
- e. State the functions which do by device driver.
- f. Enlist different types of file system used in Linux.
- g. What do you mean by soft and hard real time systems?

Q-5 Attempt all questions (14)

- (a) Explain Linux kernel construction. (07)
- (b) Enlist and explain common Linux startup files. (07)

OR

Q-5 Attempt all questions (14)

- (a) Explain universal bootloader Das U – Boot (07)
- (b) Explain with diagram Composite kernel image construction (07)

Q-6 Attempt all questions (14)

- (a) Write note on “Real-Time Kernel Performance Analysis” (07)
- (b) Enlist different MTD partitioning methods. Explain two of them. (07)

OR

Q-6 Attempt all Questions (14)

- (a) Explain kernel preemption in Linux. (07)
- (b) Write note on “Network File System” (07)

