

Total No. of Questions : 8]

SEAT No. :

P2083

[Total No. of Pages : 2

[4460] - 736

M.E. (E&TC) (VLSI & Embedded Systems) (Semester - I)

EMBEDDED SYSTEM DESIGN

(2013 Pattern)

Time : 3 Hours]

[Max. Marks :50

Instructions to the candidates:

- 1) *Attempt any FIVE questions.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *All questions carry equal marks.*
- 5) *Assume suitable data, if necessary.*

- Q1)** a) Explain the “Design and development lifecycle model” of an embedded system. [4]
b) Discuss the constraints that should be considered when formulating a design specification for an embedded system. [3]
c) Compare the functional model and architectural model of an embedded system. [3]
- Q2)** a) Discuss the objectives of analysis phase of product design and briefly explain static and dynamic analysis. [4]
b) State and explain the various design metrics used for the design of an embedded system. [3]
c) With the help of a suitable example, explain in brief the spiral model for the development of an embedded system. [3]
- Q3)** a) Explain the architecture of ARM 9 processor. [5]
b) Discuss the architectural support provided in ARM processor for expression evaluation. [5]
- Q4)** a) Explain the ARM floating-Point architecture. [4]
b) Explain in brief the memory protection unit incorporated in an ARM processor. [3]
c) Discuss how memory can be interfaced with ARM processor. [3]
- Q5)** a) What is a bootloader? Explain important tasks performed by a boot loader in an embedded linux. [4]
b) Explain “Flash file system” in an embedded linux system. [3]
c) Explain in brief the linux kernel build system. [3]

P.T.O.

- Q6)** a) What is a device driver? With the help of a suitable example, explain the structure of a device driver program. [4]
b) Explain the typical set up for the development of an embedded linux system. [3]
c) Explain in brief the Kernel configuration (Kconfig) file. [3]
- Q7)** a) Explain the structure of an Android application. [5]
b) What is “Android manifest”? Explain in brief the structure of an Android manifest file. [5]
- Q8)** a) Discuss how the lifecycle of an activity is managed in Android OS. [4]
b) What is an Intent in Android OS? Also explain the term “Intent filters”. [3]
c) Write a short note on Android telephony. [3]

