

Total No. of Questions : 10]

SEAT No. :

P3312

[Total No. of Pages : 2

[5353]-187

T.E. (Computer Engineering) (Semester - II)

EMBEDDED OPERATING SYSTEMS

(2012 Pattern)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Answer: Q.No. 1 or Q.No. 2, Q.No. 3 or Q.No. 4, Q.No. 5 or Q.No. 6, Q.No. 7 or Q.No. 8, Q.No. 9 or Q.No. 10.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data, if necessary.*

Q1) a) What is deadlock? List the necessary conditions for a deadlock to occur. [6]

b) Name and explain two IPC methods. [4]

OR

Q2) a) Explain the important characteristics of BBB. [4]

b) Name and explain the different operating modes of ARM. [6]

Q3) a) Name and explain different standards and relevant bodies responsible for the growth of Linux. [4]

b) Explain the following: [6]

i) head.o

ii) main.o

OR

Q4) a) Name and explain kernel image components. [6]

b) What are the main categories of Linux kernel releases? [4]

P.T.O

- Q5)** a) What is flash memory? How it is different than ROM type of memory? [4]
b) Explain the term 'journaling'. Name and explain two file systems which use journaling. [7]
c) Explain the following Linux utilities used: [6]
i) mount
ii) mkfs
iii) fdisk

OR

- Q6)** a) Explain the features supported by bootloader when used for embedded systems. Also mention the challenges faced by the bootloader. [8]
b) What are the different types of device drivers? Explain lsmod and modprobe. [6]
c) What are pseudo file systems? Name any one. [3]
- Q7)** a) Why tracing and profiling tools are required? Name and explain 3 such tools. [7]
b) How to debug a core dump using GDB? [6]
c) What is JTAG probe? Mention its uses. [4]

OR

- Q8)** a) Explain interfacing of BBB with Stepper motor. [7]
b) How to debug Linux kernel code? [6]
c) What are Binary utilities? Name any two binary utilities. [4]

- Q9)** a) Explain bootloader in Android. [5]
b) How to port Linux on target board? [5]
c) What are the issues involved in preempting the Linux kernel? [6]

OR

- Q10)** a) Which Linux version supports real-time features? What are the real-time features of this Linux kernel? [6]
b) What are the types of real-time systems? [4]
c) How different latency periods affect the real-time process execution? [6]

