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]**