Total No. of Questions : 10]

SEAT No. :

P2415

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T.E. (Computer Engineering)

EMBEDDED OPERATING SYSTEMS

(2012 Course) (Semester - II) (310250) (End-Sem.)

Time : 2.½ Hours] *[Max. Marks :70*

Instructions to the candidates:

1) ***Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data, if necessary.***

Q1) a) With the help of a diagram explain the classification of real-time scheduling methods. **[6]**

b) Explain role of barrel shifter in the ARM. **[4]**

OR

Q2) a) Explain how does user space applications communicates with the hardware? **[4]**

b) Write an ARM assembly program to find value of expression 3X +6Y + 9Z, where X = 4, Y = 5, Z = 3. **[6]**

Q3) a) Write short notes on (any two): **[6]**

i) LSB

ii) OSDL

iii) Kernel command line processing.

b) Why Embedded Linux is popular as OS for embedded system development? **[4]**

OR

P.T.O.

Q4) a) What are the steps involved in 'subsystem initialization'. **[4]**

b) Explain the steps involved in initialization flow of control on embedded Linux. **[6]**

Q5) a) Explain the role of bootloader in embedded systems. **[4]**

b) Give the general steps involved in PCI discovery process and probe function. **[7]**

c) Enlist device driver module utilities and explain the use of same. **[6]**

OR

Q6) a) What are the challenges for bootloader in embedded system? **[7]**

b) Explain the JFFS2 file system. **[5]**

c) Explain about U-boot configurable commands. **[5]**

Q7) a) Explain the tracing and profiling tools used in embedded application development. **[6]**

b) Write short note on (any two): **[6]**

i) GStreamer Media framework.

ii) OpenGLES.

iii) ssh

c) How to debug the kernel using 'printk'? **[5]**

OR

Q8) a) Draw & explain KGDB setup for kernel debugging. **[5]**

b) Write short note on (any two): **[6]**

i) DDD

ii) EGL

iii) Open GL

c) Explain the working of stepper motor? State any two applications of stepper motor in embedded systems. **[6]**

Q9) a) Give the latency components in Linux with neat diagram. **[8]**

b) Explain in detail, development process of Android applications. **[8]**

OR

Q10)a) What policies are used by Linux to schedule a real time task? **[8]**

b) Write short notes on (any two): **[8]**

i) Dalvik VM

ii) Zygote

iii) Activity Manager

EEE