

NOV - 2016

Total No. of Questions :10]

SEAT No. :

P1758

[5058]-398

[Total No. of Pages :3

T.E. (Computer Engineering)
EMBEDDED OPERATING SYSTEMS
(2012 Pattern) (End-Sem.) (Semester - II) (310250)

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 side indicate full marks.
- 4) Assume suitable data, if necessary.

Q1) a) List and explain non-preemptive scheduling algorithms? [6]

b) What are the message pipes? How they are useful to Kernel? [4]

OR

Q2) a) What is the difference between Thumb and ARM modes of ARM? [4]

b) Give total number of registers found in ARM mode of ARM architecture?
Give reason for their existence. [4]

c) What is tardiness and laxity? [2]

Q3) a) Explain Linux kernel construction. [4]

b) What are the following with respect to Linux kernel? [3]

i) zImage

ii) vmlinuz

c) Draw a typical flash memory layout. [3]

OR

P.T.O.

Q4) a) With the help of neat diagram, explain composite kernel image construction. [6]

b) Give details of Busy Box configuration. [4]

Q5) a) What is the use of flash memory found on the embedded/target board? What are the limitations of flash memory? [5]

b) What is journaling? Give the names of two file systems where it is used. [6]

c) What are loadable modules with respect to device drivers? Give Commands for loading and unloading device driver modules. [6]

OR

Q6) a) What are the responsibilities of bootloader when designed for an embedded board? [6]

b) How DHCP/BOOTP protocols are useful for embedded Linux development? [6]

c) Write a note on MTD subsystem. [5]

Q7) a) With the help of neat diagram, explain the Linux kernel debugging on target board. [7]

b) Describe GDB, DDD, cbrowser/cscope. [6]

c) What is SSH? When do you use it? [4]

OR

Q8) a) With the help of neat diagram, explain interfacing of BBB with Stepper motor. [7]

b) Discuss the challenges faced by developer while debugging Linux kernel code. [6]

c) What is gdbserver? [4]

- Q9)** a) With the help of neat diagram, explain embedded android Architecture. [8]
- b) Explain different steps involved in porting Linux on embedded/target board. [8]

OR

- Q10)** a) Explain the following terms with respect to embedded android: [8]
- i) Launcher
 - ii) Activity manager
 - iii) Dalvic VM
- b) What is required to preempt Linux kernel? [4]
- c) What are sources of preemption latency in Linux kernel? [4]

EEE