Total No. of Questions : 6]

SEAT No. :

P103

APR.-16/TE/Insem.-40

[Total No. of Pages : 2

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

Time : 1 Hour]

[Max. Marks : 30

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.*
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 do you mean by preemptive and non-preemptive tasks? [2]

b) Consider a multitasking system using SJN scheduling algorithm. There are three tasks in the ready list as given below. Find the average turnaround time (TAT). [5]

Task	Ts (Time Units)
T1	400
T2	125
T3	250

c) What do you mean by real - time tasks? Give two examples of systems with real time tasks. [3]

OR

Q2) a) Explain the terms: CPU utilization, Response time, Turnaround time and Throughput rate with respect to scheduling policies. [4]

b) What are the kernel services of RTOS? [3]

c) Explain Rate Monotonic algorithm. What is the sufficient condition for RM scheduling? [3]

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Q3) a) What is meant by 'Core' with respect to ARM architecture? [2]

b) Explain different assembler directives used in assembly language programming of ARM. [3]

c) Write assembly language program for ARM to implement the equation 4X - 9Y, where X = 2 and Y = 3. [5]

OR

Q4) a) Explain advanced features of ARM. [3]

b) What are CPSR and SPSR? [3]

c) Explain load-store architecture of ARM. Give examples. [4]

Q5) a) Differentiate between BIOS, Bootloader and Bootstrap loader. [3]

b) What are kernel image components? [4]

c) Explain Initialization flow of control in brief. [3]

OR

Q6) a) With help of diagram, explain the required setup for embedded linux development. [5]

b) What is dot-config file? [2]

c) What are the standards and relevant bodies for Linux. [3]

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