www.sppuonline.com

Total No. of Questions :12]

SEAT No. :

P3008

[Total No. of Pages :3

[5059] - 175

B.E. (E & TC)

EMBEDDED SYSTEM AND RTOS

(2008 Course) (Semester - I) (Elective - I) (404184)

Time : 3 Hours] *[Max. Marks :100*

Instructions to the candidates:

1) ***Answer 03 questions from Section I and 03 questions from Section II.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***

SECTION - I

Q1) a) What is embedded system? Justify that design of embedded system is unified hardware -software approach. **[9]**

b) With an example explain need of optimizing design metrics. **[9]**

OR

Q2) a) What is CAN protocol? Explain Frame format of CAN. **[9]**

b) Explain following protocol. **[9]**

i) Bluetooth

ii) IEEE 802.11

Q3) a) Explain limitation of 08 bit processor and need of 32 bit processor in embedded system. **[8]**

b) With neat interfacing diagram explain 16×2 LCD interfacing with LPC 2148 controller. **[8]**

OR

P.T.O.

www.sppuonline.com

www.sppuonline.com

Q4) a) Explain any four selection criterion for processor selection in embedded system. **[8]**

b) Explain following system control blocks of LPC 2148 **[8]**

i) PLL

ii) VPB bus

iii) Power control

iv) Walk-up timer

Q5) a) Explain following software architectures of embedded system. **[8]**

i) Round Robin with interrupt

ii) RTOS

b) Explain any two task management functions in μcos-II. **[8]**

OR

Q6) a) Draw and explain task state diagram in μcos-II. **[8]**

b) Explain any two memory management functions in μcos-II. **[8]**

SECTION - II

Q7) a) What is embedded Linux? Explain various components of embedded Linux. **[8]**

b) Explain following tool utilities **[8]**

i) Minicom

ii) Busybox

OR

Q8) a) Explain Linux file system in brief. **[8]**

b) What is device driver? Explain device driver skeleton. **[8]**

www.sppuonline.com

www.sppuonline.com

Q9) a) Compare QNX and VXWorks OS. **[8]**

b) Explain spiral model developement advantages over waterfall & V model. **[8]**

OR

Q10)a) Compare Android and symbian towards smart phone usage. **[8]**

b) Explain monolithic, microkernel and decoupled approach of operating system. **[8]**

Q11)a) With neat diagram and required hard ware, software components, explain digital camera. **[10]**

b) Explain suitable application in automotive with usage of CAN protocol. **[8]**

OR

Q12)a) Explain the features of processor, memory and I/o devices required for ECG system. **[10]**

b) Explain case study of Adaptive cruise control system in automotive. **[8]**

www.sppuonline.com

www.sppuonline.com

www.sppuonline.com