B.Tech. Sem-V (2020 course) Electronics & communication Winter-2022

BACHELOR OF TECHNOLOGY (C.B.C.S.) (2020 COURSE)
B.Tech.Sem - V Electronics & Communication : WINTER- 2022
SUBJECT : EMBEDDED SYSTEM DESIGN

Day : Monday | Time : 02:30 PM-05:30 PM
Date : 12/12/2022 | **W-24612-2022** | Max. Marks : 60

N.B.
1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Assume suitable data if necessary.

Q.1 With the help of neat block diagram, show the elements of an embedded system. Justify the importance of these components in designing an embedded system. **(10)**

OR

Q.1 How do you classify the quality attributes of embedded system? Discuss non-operational quality attributes in detail. **(10)**

Q.2 Draw circuit diagram to interface analog input to ESP 8266. Write a code in Micro-python to read the analog input & display the output. **(10)**

OR

Q.2 Define and explain the following w.r.t Micro-Python : i) Auto intent ii) REPL iii) Auto completion. **(10)**

Q.3 **a)** List the features of ESP 8266. **(05)**
b) Explain how you will configure ADC in ESP 32. **(05)**

OR

Q.3 **a)** Compare ESP 8266 and ESP 32. **(05)**
b) Write in brief about the GPIOs in ESP 8266.List important features of ESP 8266 also. **(05)**

Q.4 Define and explain: i) Thread ii) Free RTOS iii) Light weight entity iv) Multi tasking v) task **(10)**

OR

Q.4 Define process. Give a suitable example to show the difference between process and thread. **(10)**

Q.5 What do you mean by semaphore? Where it is used? Explain with suitable example. **(10)**

OR

Q.5 With respect to IPC explain: **(10)**
i) Message **ii)** Pipes **iii)** Queues

Q.6 Draw circuit diagram for interfacing ESP 8266 to LED & switch(push button). Write a program in Embedded C to turn the LED "ON" after operating the push button. Explain the code step by step. **(10)**

OR

Q.6 Draw circuit diagram for interfacing ESP 8266/ESP 32 to temperature sensor. Write a program in Embedded C to display the measured temperature. Explain the code step by step. **(10)**

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